

# Scope of Practice for the Diagnostic Ultrasound Professional

Copyright © 1993-2000

*Society of Diagnostic Medical Sonographers, Dallas, Texas USA: All Rights Reserved Worldwide. Organizations which endorse the Scope of Practices and Practice Standards may use them for their own internal use, including copying or distributing the text, provided that the text is reproduced in its entirety with no changes, and includes proper attribution and the copyright notice displayed above.*

The purpose of this document is to define the Scope of Practice for Diagnostic Ultrasound Professionals and to specify their roles as members of the health care team, acting in the best interest of the patient. This scope of practice is a “living” document that will evolve as the technology expands.

## **Definition of the Profession:**

The Diagnostic Ultrasound Profession is a multi-specialty field comprised of Diagnostic Medical Sonography (with subspecialties in abdominal, neurologic, obstetrical/gynecologic and ophthalmic ultrasound), Diagnostic Cardiac Sonography (with subspecialties in adult and pediatric echocardiography), Vascular Technology, and other emerging fields. These diverse specialties are distinguished by their use of diagnostic medical ultrasound as a primary technology in their daily work. Certification<sup>1</sup> is considered the standard of practice in ultrasound. Individuals who are not yet certified should reference the Scope as a professional model and strive to become certified.

## **Scope of Practice of the Profession:**

The Diagnostic Ultrasound Professional is an individual qualified by professional credentialing<sup>2</sup> and academic and clinical experience to provide diagnostic patient care services using ultrasound and related diagnostic procedures. The scope of practice of the Diagnostic Ultrasound Professional includes those procedures, acts and processes permitted by law, for which the individual has received education and clinical experience, and in which he/she has demonstrated competency.

## **Diagnostic Ultrasound Professionals:**

- Perform patient assessments
- Acquire and analyze data obtained using ultrasound and related diagnostic technologies
- Provide a summary of findings to the physician to aid in patient diagnosis and management
- Use independent judgment and systematic problem solving methods to produce high quality diagnostic information and optimize patient care.

---

<sup>1</sup> An example of credentials: RDMS (registered diagnostic medical sonographer), RDCS (registered diagnostic cardiac sonographer), RVT (registered vascular technologist); awarded by the American Registry of Diagnostic Medical Sonographers,® a certifying body with NCCA Category “A” membership.

<sup>2</sup> Credentials should be awarded by an agency certified by the National Commission for Certifying Agencies (NCCA).

# **Diagnostic Ultrasound Clinical Practice Standards**

Standards are designed to reflect behavior and performance levels expected in clinical practice for the Diagnostic Ultrasound Professional. These Clinical Practice Standards set forth the standards (principles) that are common to all of the specialties within the larger category of the diagnostic ultrasound profession. Individual specialties or subspecialties may adopt standards that extend or refine these general Standards and that better reflect the day to day practice of these specialties. Certification is considered the standard of practice in ultrasound. Individuals not yet certified may reference these Clinical Practice Standards to optimize patient care.

## **Section 1: Patient Information, Assessment and Evaluation Patient Education and Communication, Procedure Plan**

### **STANDARD - Patient Information Assessment & Evaluation:**

1.1 Information regarding the patient's past and present health status is essential in providing appropriate diagnostic ultrasound information. Therefore, pertinent data regarding the patient's medical history, including familial history as it relates to the diagnostic ultrasound procedure, should be collected whenever possible and evaluated to determine its relevance to the ultrasound examination.

#### *The Diagnostic Ultrasound Professional:*

**1.1.1** Verifies patient identification and that the requested procedure correlates with the patient's clinical history and presentation. In the event that the requested procedure does not correlate, either the interpreting physician or the referring physician will be notified.

**1.1.2** Uses interviewing techniques to gather relevant information from the patient or patient's representative and the patient's medical records regarding the patient's health status and medical history.

**1.1.3** Assesses the patient's ability to tolerate procedures.

- 1.1.4** Evaluates any contra-indications to the procedure, such as medications, insufficient patient preparation or the patient's inability or unwillingness to tolerate the procedure.

## **STANDARD -Patient Education and Communication:**

- 1.2** Effective communication and education are necessary to establish a positive relationship with the patient and/or the patient's representative, and to elicit patient cooperation and understanding of expectations.

### *The Diagnostic Ultrasound Professional:*

1.2.1. Communicates with the patient in a manner appropriate to the patient's ability to understand. Presents explanations and instructions in a manner which can be easily understood by the patient and other health care providers.

1.2.2. Explains the examination procedure to the patient and responds to patient questions and concerns.

- 1.2.3** Refers specific diagnostic, treatment or prognosis questions to the patient's physician.

## **STANDARD- Analysis and Determination of Procedure Plan for Conducting the Diagnostic Examination**

- 1.3** The most appropriate procedure plan<sup>1</sup> seeks to optimize patient safety and comfort, diagnostic ultrasound quality and efficient use of resources, while achieving the diagnostic objective of the examination.

### *The Diagnostic Ultrasound Professional:*

1.3.1 Analyzes the previously gathered information and develops a procedure plan for the diagnostic procedure. Each procedure plan is based on age appropriate and gender appropriate considerations and actions.

1.3.2 Uses independent professional judgment to adapt the procedure plan to optimize examination results. Performs the ultrasound or vascular technology procedure under general<sup>2</sup> or direct<sup>3</sup> supervision, as defined by the procedure.

---

<sup>1</sup> **Procedure Plan:** A plan for conducting the ultrasound or related examination. The procedure plan must take into account the skills and knowledge of the Diagnostic Ultrasound Professional, the condition and history of the patient, the objectives of the examination, the diagnostic criteria, the capabilities of available ultrasound and related equipment and a wide range of other factors.

<sup>2</sup> **General Supervision:** the minimal level of physician supervision; physician is not required to be present in the office suite when the ultrasound procedure is performed.

<sup>3</sup> **Direct Supervision:** physician must be present in office suite when ultrasound exam or vascular procedure is performed.

- 1.3.3 Consults appropriate medical personnel, when necessary, in order to optimize examination results.
- 1.3.4 Confers with the interpreting physician, when appropriate, to determine if contrast media administration will enhance image quality and provide additional diagnostic information.
- 1.3.5 Uses appropriate technique for intravenous line insertion and contrast media administration when the use of contrast is required.
- 1.3.6 Determines the need for accessory equipment.<sup>4</sup>
- 1.3.7 Determines the need for additional personnel to assist in the examination.
- 1. Acquires prior written approval from the medical director for contrast media injection.<sup>5</sup>

## **STANDARD-Implementation of the Procedure Plan**

**1.4** Quality patient care is provided through the safe and accurate implementation of a deliberate procedure plan.

### *The Diagnostic Ultrasound Professional:*

- 1.4.1 Implements a procedure plan that falls within established protocols.<sup>6</sup>
- 1.4.2 Elicits the cooperation of the patient in order to carry out the procedure plan.
- 1.4.3 Modifies the procedure plan according to the patient's disease process or condition.
- 1.4.4 Uses accessory equipment, when appropriate.

Modifies the procedure plan, as required, according to the physical circumstances under which the procedure must be performed (i.e., operating room, ultrasound laboratory, patient's bedside, emergency room.)

---

<sup>4</sup> **Accessory equipment:** Equipment which extends or modifies the function of the ultrasound scanning device, or which provides ancillary or complimentary diagnostic information (i.e. non-ultrasound testing equipment).

<sup>5</sup> **Note:** Approval of individuals for contrast media injection and IV line insertion requires that the individual have obtained education and training for this function and have demonstrated competency. The Diagnostic Ultrasound Professional is encouraged to obtain continuing medical education related to the materials being injected and the procedures being performed.

<sup>6</sup> **Protocols:** A standardized description of the elements of a task, procedure or process; a detailed plan of a procedure.

- 1.4.6 Assesses and monitors the patient's physical and mental status during the examination.
- 1.4.7 Modifies the procedure plan according to changes in the patient's clinical status during the procedure.
- 1.4.8 Administers first aid, or provides life support in emergency situations, as required by employer policy.
- 1.4.9 Performs basic patient care tasks, as needed.
- 1.4.10 Requests the assistance of additional personnel, when warranted.
- 1.4.11 Recognizes sonographic characteristics of normal and abnormal tissues, structures and blood flow; adjusts scanning technique to optimize image quality and spectral waveform characteristics.
- 1.4.12 Analyzes sonographic findings throughout the course of the examination so that a comprehensive exam is completed and sufficient data is provided to the physician to direct patient management and render a final diagnosis.
- 1.4.13 Performs measurements and calculations according to laboratory protocol.
- 1.4.14 Strives to minimize patient exposure to acoustic energy without compromising examination quality or completeness.

## **STANDARD-Evaluation of the Diagnostic Examination Results**

**1.5** Careful evaluation of examination results<sup>7</sup> in the context of the procedure plan is important in order to determine whether the procedure plan goals have been met.

*The Diagnostic Ultrasound Professional:*

- 1.5.1 Establishes that the examination, as performed, complies with applicable protocols and guidelines.<sup>8</sup>
- 1.5.2 Identifies any exceptions to the expected outcome.<sup>9</sup>

---

<sup>7</sup> **Examination results:** The ultrasound images, data and measurements which results from the examination process.

<sup>8</sup> **Guideline:** A written document which provides suggestions (guidance) on how to accomplish a particular task, procedure or process on how to respond to specified circumstances.

<sup>9</sup> **Expected outcome:** The expected information and data which was anticipated to have resulted from the examination.

- 1.5.3 Documents any exceptions<sup>10</sup> clearly, concisely and completely. When necessary, develops a revised procedure plan in order to achieve the intended outcome.
- 1.5.4 Initiates additional scanning techniques or administers contrast agents as indicated by the examination and according to established laboratory policy and procedures under state law.
- 1.5.5 Notifies an appropriate health provider when immediate medical attention is necessary, based on procedural findings and patient conditions.
- 1.5.6 Evaluates the patient's physical and mental status prior to discharge from the Diagnostic Ultrasound Professional.
- 1.5.7 Upon assessment of the examination findings, recognizes the need for an urgent rather than routine report and takes appropriate action.
- 1.5.8 Provides a written or oral summary of preliminary findings to the physician.

## **STANDARD-Documentation**

**1.6** Clear and precise documentation is necessary for continuity of care, accuracy of care and quality assurance.

### *The Diagnostic Ultrasound Professional:*

- 1.6.1 Documents diagnostic and patient data in the appropriate record, according to the policy and procedure of the facility.
- 1.6.2 Ensures that the documentation is timely, accurate, concise and complete.
- 1.6.3 Documents any exceptions from the established protocols and procedures.
- 1.6.4 Records diagnostic images and data for use by the interpreting physician in rendering a diagnosis and for archival purposes.
- 1.6.5 Provides an oral or written summary of preliminary findings to the interpreting physician.

---

<sup>10</sup> **Exceptions:** Any elements of the examination protocol that were not performed; the Diagnostic Ultrasound Professional must document exceptions in the written summary of examination findings.

## **Section 2      Quality Assurance Performance Standards**

### **STANDARD-Implementation of Quality Assurance**

**2.1**      Implementation of a quality assurance action plan is imperative for quality diagnostic procedures and patient care.

*The Diagnostic Ultrasound Professional:*

2.1.1 Obtains assistance appropriate personnel to implement the quality assurance action plan.

2.1.2 Implements the quality assurance action plan.

### **STANDARD-Assessment of Equipment, Procedures and the Work Environment**

**2.2**      The planning and provision of safe and effective medical service relies on the collection of pertinent information about equipment, procedures and the work environment.

*The Diagnostic Ultrasound Professional:*

2.2.1 Strives to maintain a safe workplace environment.

2.2.2 Performs equipment quality assurance procedures, as required, to determine that equipment operates at an acceptable performance level.

2.2.3 Seeks to ensure that each work site in which the Diagnostic Ultrasound Professional conducts patient examinations has in place a policy manual that addresses environmental safety, equipment maintenance standards and equipment operation standards and that this policy manual is reviewed and revised on a regular basis. Knows, understands and implements the policies set forth in the work site policy manual.

### **STANDARD-Analysis and Determination of a Quality Assurance Plan**

**2.3**      The Diagnostic Ultrasound Professional uses quality assurance and continuous quality improvement methods to assess and evaluate all aspects of ultrasound practice.

*The Diagnostic Ultrasound Professional:*

2.3.1 Strives to become knowledgeable about the theory and practice of quality assurance and continuous quality improvement methods and procedures as they are applied in the clinical environment. Works with all concerned parties to implement such methods and procedures with the objective of continuously improving the quality of ultrasound diagnostic services.

2.3.2 Compares quality assurance results to established and acceptable values.

2.3.3 Works with all concerned parties to formulate and implement an action plan.

## **STANDARD-Outcomes Measurement**

2.4 Outcomes assessment<sup>11</sup> is an integral part of the ongoing quality assurance plan to enhance diagnostic services.

### *The Diagnostic Ultrasound Professional:*

2.4.1 Based on outcomes assessment, determines whether the performance, of equipment and materials is in accordance with established guidelines and protocols.

2.4.2 Based on outcomes assessment, determines whether the diagnostic information provided as a result of the ultrasound examination correlates with other diagnostic testing or procedures performed on the same patient.

2.4.3 Based on outcomes assessment, determines that each test achieves the same outcome when performed by different Diagnostic Ultrasound Professionals.

2.4.4 Develops and implements an action plan when outcome measurement results are not within currently accepted tolerances.

2.4.5 Is knowledgeable of, or works with the medical director to develop, written diagnostic ultrasound procedure protocols that meet or exceed established guidelines.<sup>12</sup>

---

<sup>11</sup> **Outcome Assessment:** Assessment of an action, process or procedure based on the ultimate outcome of that action, process or procedure. In this case, the term refers to assessment of the outcome of the diagnostic test (the results of the test or the diagnosis) in comparison to other sources of information (i.e. other types of diagnostic testing) which can be used to assess the validity of the conclusions reached on the basis of the ultrasound examination.

<sup>12</sup> **Guidelines:** (Relevant to the development of diagnostic procedure protocols): Professional organizations, including the American Institute of Ultrasound in Medicine, the American College of Radiology, the American College of Obstetrics and Gynecology, the American Society of Echocardiography, the Society of Diagnostic Medical Sonographers and the Society of Vascular Technology have published guidelines for clinical ultrasound procedures.



## **STANDARD-Documentation**

**2.5** Documentation provides evidence of quality assurance activities designed to enhance the safety of patients, the public, and health care providers, during diagnostic ultrasound procedures.

*The Diagnostic Ultrasound Professional:*

**2.5.1** Maintains documentation regarding quality assurance activities, procedures, and results, in accordance with the established laboratory policies and protocols.

**2.5.2** Provides timely, concise, accurate and complete documentation of quality assurance activities.

**2.5.3** Adheres to the established quality assurance performance standards

## **Section 3 Professional Performance Standards**

### **STANDARD-Quality of Care**

**3.1** All patients expect and deserve excellent care during the ultrasound examination.

*The Diagnostic Ultrasound Professional:*

**3.1.1** Works in partnership with other health care professionals to provide the best medical care possible for all patients.

**3.1.2** Obtains and maintains appropriate professional credentials.<sup>13</sup>

**3.1.3** Adheres to the standards,<sup>14</sup> policies,<sup>15</sup> and procedures<sup>16</sup> adopted by the profession and regulated by law.

---

<sup>13</sup> **Professional Credentials:** Competency based ultrasound credentials awarded by a National Commission for Certifying Agencies (NCCA) accredited certification body; an example is the American Registry of Diagnostic Medical Sonographers (ARDMS).

<sup>14</sup> **Standards:** Statements of the minimum behavioral or performance levels that are acceptable. Something established by authority as a rule for the measure of quantity or quality.

- 3.1.4 Provides the best possible diagnostic exam for each patient by applying professional judgment and discretion.
- 3.1.5 Anticipates and responds to the needs of the patient.
- 3.1.6 Participates in quality assurance programs.
- 3.1.7 Stays current with required continuing medical education (CME) in order to stay abreast of changes in the field of diagnostic ultrasound and to maintain professional credentials.

## **STANDARD-Self-Assessment**

**3.2** Self-assessment is an essential component in professional growth and development. Self-assessment involves evaluation of personal performance, knowledge and skills.

*The Diagnostic Ultrasound Professional:*

- 3.2.1 Recognizes personal strengths and uses them to benefit patients, coworkers, and the profession.
- 3.2.2 Performs diagnostic procedures only after receiving appropriate education and supervised clinical experience.

Recognizes and takes advantage of educational opportunities, including improvement in technical and problem-solving skills and personal growth.

## **STANDARD-Education**

**3.3** Advancements in medical science and technology occur very rapidly, requiring an on-going commitment to professional education.

*The Diagnostic Ultrasound Professional:*

- 3.3.1 Maintains professional credentials that are specifically related to the currently practiced discipline(s).
- 3.3.2 Participates in continuing education activities through professional societies and organizations, to enhance knowledge, skills and performance.

---

<sup>15</sup> **Policies:** Written statements indicating what actions are to be taken when specific criteria are encountered. A definite course or method of action selected from among alternatives and in light of given conditions to guide and determine present and future decisions.

<sup>16</sup> **Procedures:** Written guidelines that state how a task is to be accomplished, the specific steps to be taken, or how a policy is to be executed.

## **STANDARD-Collaboration**

**3.4** Quality patient care is provided when all members of the health care team communicate and collaborate efficiently.

*The Diagnostic Ultrasound Professional:*

3.4.1 Promotes a positive and collaborative atmosphere with all members of the health care team.

3.4.2 Effectively communicates with all members of the health care team regarding the welfare of the patient.

3.4.3 Shares knowledge and expertise with colleagues, patients, students, and all members of the health care team.

## **STANDARD-Ethics**

**3.5** All decisions made and actions taken on behalf of the patient adhere to the *Code of Ethics*<sup>17</sup> upon which the accepted professional standards are based.

*The Diagnostic Ultrasound Professional:*

3.5.1 Adheres to the accepted professional ethical standards as defined by the *Code of Ethics*.

3.5.2 Is accountable for professional judgments and decisions, as outlined in the professional standard of ethics.

3.5.3 Provides patient care with bias toward none and equal respect for all.

3.5.4 Respects and promotes patients rights.

3.5.5 Provides patient care with respect for patient dignity and needs.

3.5.6 Acts as a patient advocate supporting patient rights.

3.5.7 Adheres to the established professional performance standards of practice.

---

<sup>17</sup> **Code of Ethics:** Document defining the expected professional standard of conduct for Diagnostic Ultrasound Professionals; published by the *Sonography Coalition* and included in the appendix.