

The Journal of
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Consulting**

Volume 22 ▲ Number 2 ▲ Spring 2011

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LEGAL NURSE CONSULTANTS**

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The Journal of Legal Nurse Consulting

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The purpose of The Journal is to promote legal nurse consulting within the medical-legal community; to provide both novice and experienced legal nurse consultants (LNCs) with a quality professional publication; and to teach and inform LNCs about clinical practice, current legal issues, and professional development.

Manuscript Submission

The Journal accepts original articles, case studies, letters, and research. Query letters are welcomed but not required. Material must be original and never published before. A manuscript should be submitted with the understanding that it is not being sent to any other journal simultaneously. Manuscripts should be addressed to JLNC@aalnc.org.

Manuscript Review Process

Submissions are peer-reviewed by eminent professional LNCs with diverse professional backgrounds. Manuscript assistance can be provided upon request to the editor. Acceptance is based on the quality of the material and its importance to the audience.

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LEGAL NURSE CONSULTING

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Julie Dickinson, MBA BSN RN LNCC

This article offers a historical perspective of the profession by reviewing the two cases which marked the dawn of legal nurse consulting as well as the events that transpired thereafter to mold the profession into what it is today.

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Debra Wolf, PhD MSN BSN RN and Deborah L. Nellis, DNP RN LNCC

This article is the second of a two part series that will assist legal nurse consultants (LNCs) to increase their understanding of Health Information Technology (HIT) and to be more proficient in reviewing and requesting electronic health records (EHRs). Part I titled "Understanding the transition: Moving from paper to electronic records" provided a foundation of knowledge that centered on why organizations are transitioning to electronic charting, the impact political reform has had on EHRs, the challenges of implementing an EHR, and the various organizations involved in the protection of health information. Part II introduces the LNC to the various types of functionality found within EHRs and presents a tool to assist LNCs in requesting EHR documents for review. Being able to speak the language and request selected documents in detail will assist the LNC in completing a timely and full medical record review for legal litigation.

Preparing a Nursing Negligence Expert Report in Six Paragraphs 13

Wesley T. D. Myers and Bernadette P. Boutier, RN BSN

As conveyed by the title, this article provides a simple six paragraph framework to employ when preparing a nursing expert report in a medical malpractice case which can be utilized by nursing experts retained by either the party prosecuting or defending the lawsuit.

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Judith M. Bulau, MSN RN

CORRECTION: In the Winter 2011, Volume 22, Number 1, Page 27 issue of the Journal, a correction is made in the last paragraph of the article, **Discovery of Sentinel Events and Root Cause Analysis Documents**. The word "plaintiff" should be replaced with "defendant" so the sentences read:

For example, in Reyes v. Meadowlands Hospital Medical Center, 355 N.J. Super.226, 809 A.2d 875 (2001), a cause of action involving a claim of medical malpractice and wrongful death, the defendant brought a motion for a protective order. The motion was filed because the defendant was seeking to shield from discovery its SE and RCA documents gathered through a process it called "self-critical analysis."

Extending the Learning Through Continuing Education



Dear Colleagues,

Spring is upon us as is this Spring issue of the *Journal*!

I know that those of you who were at the 2011 AALNC Conference this year received many benefits including attending wonderful and exciting sessions that provided great learning opportunities from experts in the field; networking with colleagues to spark discussions about career choices and expansions; socializing with friends and colleagues whom you may not have seen for awhile; and gathering new ideas or refreshing old ideas to advance the specialty practice. As well, this issue of the *Journal* is packed full of excellent information on a variety of topics that will continue to provide an exceptional learning experience.

In this issue of the *Journal*, Julie Dickinson begins with a historical perspective on the advent of the legal nurse consulting specialty field by examining two cases that sparked the initiation and growth of the specialty. She gives some great information having interviewed two AALNC past presidents about their experiences and how the LNC has added value to the legal field. She further describes important events that have occurred over the past 30 years that have continued to define the role and enlarged scope of practice of the LNC.

Debra Wolf and Deborah Nellis offer Part II on the topic of electronic health records (EHR). In the previous *Journal* issue, the authors provided foundational information on transitioning to an EHR along with the challenges this system creates. In this article, the authors further describe how these systems interface and how logic information is used. They describe why it is important for the LNC to be familiar with these systems in order to effectively manage legal cases in the world of ever advancing technology.

Preparing nursing negligence expert reports is the subject of an article by Wesley Myers and Bernadette Boutier. This topic is presented informatively and concisely and describes how this done in six paragraphs! It emphasizes the important aspects of the report and the ultimate issue of the expert's opinion which is the focal point of the report.

In the *Journal* special departments, Ann Peterson writes the Clinical Maxim on osteoporosis and hip fractures. This article provides excellent in depth coverage of the topic describing current epidemiologic information, pathophysiology, risk factors, assessment, treatment, and important medical/legal implications. Readers will also learn a great deal about bone mass changes that occur with the aging process. This article is accompanied by an extensive list of online references and resources prepared by Kara DiCecco. This includes several resources for diagnosis and treatment, guidelines, support groups and current news. In our Professional Practice, Trends, and Issues department, Eileen Watson and Holly Hillman discuss the issue of competency in practice and the direction of nursing related to this as we move forward in advancing our practice. The importance of continuing education and certification is briefly explored as important to competency achievement and maintenance. In the Questions and Answer segment, Judith Bulau gives an excellent overview of the meaning of reportable events and hospital acquired conditions. She discusses how these can impact legal claims.

I hope you enjoy reading and learning about these important topics and also consider writing an article for the *Journal*. We would enjoy receiving your manuscript!

Bonnie Rogers
Editor-in-Chief, *The Journal of Legal Nurse Consulting*

The Origins and Evolution of Legal Nurse Consulting

By Julie Dickinson, MBA BSN RN LNCC

KEY WORDS

Origin, History, Evolution, Development

This article offers a historical perspective of the profession by reviewing the two cases which marked the dawn of legal nurse consulting as well as the events that transpired thereafter to mold the profession into what it is today.

In 1980, the profession of legal nurse consulting began to develop more fully. Before then, courts across the country worked under the presumption that only physicians could testify as to the standard of care in all cases involving the nursing profession (Iyer, 2003). Nurses were used in the courtroom to offer testimony as fact witnesses, but as such, could not opine regarding compliance with or deviations from the standard of care (Cohen, Rosen, & Barbacci, 2008). However, in 1980, there were two landmark cases that changed this stance and marked the advent of the legal nurse consulting profession. *Avret v. McCormick* (1980) and *Maloney v. Wake Hospital Systems* (1980) paved the way for nurse experts to opine on the standards of care for nursing practice and acted as catalysts for the growth and evolution of legal nurse consulting. This article will discuss these two cases as well as the subsequent events that have molded the profession into what it is today.

The Origins of Legal Nurse Consulting

Avret v. McCormick

Ms. McCormick brought a medical malpractice action against Dr. Avret (*McCormick v. Avret*, 1980) alleging that failure to maintain needle sterility during a blood draw caused an infection and subsequent damage to a nerve in her right wrist. During the trial, Ms. McCormick testified that the needle used to draw her blood was placed next to a recently used tongue depressor. She also reported that the same needle was used during several attempts to draw her blood but was never resterilized. After the blood was drawn, the insertion site became swollen and tender. While Dr. Avret testified that he could not pinpoint the exact cause of the inflammation, he admitted that one of the possible causes was infection. Of significance, Dr. Avret confirmed under oath that the drawing of blood is not a treatment exclusive to medical doctors. During the trial, Ms. McCormick offered a nurse witness, who had personally performed over 2,000 blood draws and injections, to testify as to the proper procedure for keeping a needle sterile. The court refused to qualify the nurse as an expert, and Dr. Avret moved for and was granted a directed verdict, meaning that jury deliberations are bypassed and a verdict is rendered from the bench. The judge issued a defense verdict.

Ms. McCormick appealed the decision (*McCormick v. Avret*, 1980) stating that the trial court erred in refusing to qualify the nurse expert and in granting the directed verdict. Dr. Avret countered that since he was a medical doctor only another medical doctor would be qualified to provide expert testimony. The Court of Appeals noted that ordinarily only a medical doctor has the training and experience to opine on the standard of care in a medical malpractice case (*Pilgrim v. Landham*, 1940; *Howell v. Jackson*, 1941; *Shea v. Phillips*, 1957). However, since Dr. Avret had testified that a nurse is normally responsible for drawing blood from his patients, and therefore, not a procedure exclusively performed by medical doctors, the Appellate Court found that the nurse witness, with training and experience in drawing blood, did in fact qualify as an expert. "She is no less an expert merely because the defendant in a particular case happens to be a medical doctor." The judgment was reversed.

Dr. Avret appealed to the Supreme Court for certiorari (issue an order to a lower court to transmit records for a case to be heard on appeal) to determine whether or not a nurse is qualified to testify as an expert witness as to the standard of care in keeping a needle sterile during a blood draw (*Avret v. McCormick*, 1980). The court cited that "a witness with such skill, knowledge or experience in a field or calling as to be able to draw an inference that could not be drawn by the average layman may be qualified as an expert witness (Agnor, Georgia Evidence, § 9-5)." "Medical experts are persons possessing technical and peculiar knowledge, and any person learned in medical or physiological matters is qualified to testify as an expert thereon, even though he is not a medical practitioner (32 CJS 336, Evidence, § 546(92))." The Supreme Court upheld the judgment of the Appellate Court.

Maloney v. Wake Hospital Systems

Ms. Maloney brought an action against Wake Hospital (*Maloney v. Wake Hospital Systems*, 1980) for the alleged nursing malpractice of one of its employees, Nurse Kulyk. Ms. Maloney was admitted to the defendant hospital and was ordered to receive potassium chloride (KCl) intravenously (I.V.). Ms. Maloney testified that Nurse Kulyk injected undiluted KCl into the intravenous tubing, which inadvertently infused into the tissue of her hand instead of the vein. Nurse Kulyk testified that the KCl solution

was, in fact, properly diluted prior to administration. Part-way through the solution administration, Ms. Maloney complained of a burning sensation in her hand where the I.V. catheter was inserted. Ms. Maloney's hand later became swollen, with the skin turning a grayish color. Ms. Maloney underwent debridement of this skin as well as subsequent cosmetic surgery.

At trial, Ms. Maloney presented a nurse expert, Nurse Atkins, who was specially trained in I.V. therapy. Nurse Atkins was to testify that Nurse Kulyk breached the standard of care and that the damage to Ms. Maloney's hand was caused by the improper I.V. administration of KCl. The court did not permit Nurse Atkins to testify regarding causation, stating that an individual not licensed to diagnose or prescribe medical treatment could not testify as to injury causation. The jury returned a defense verdict.

Ms. Maloney appealed this judgment and asked the Appellate Court to determine whether an expert who is not a medical doctor may give expert opinion testimony as to the cause of a physical injury. The court reviewed Nurse Atkins' extensive education, experience, and skills (*Maloney v. Wake Hospital Systems*, 1980). Specifically, Nurse Atkins had been a coordinator of another hospital's I.V. therapy division, served as president of the American Society of Intravenous Therapy, established I.V. therapy programs, developed an I.V. therapy manual, and, at the time of trial, was nearing completion of a degree in pharmacy. In addition, she had worked as a consultant with numerous pharmaceutical companies on I.V. administration and practices and was involved on multiple national-level committees to set standards for preparation and administration of I.V. medications.

The Appellate Court ruled that the lower court erred in excluding Nurse Atkin's opinion testimony as to the cause of plaintiff's injury and in disqualifying Nurse Atkins as an expert. "The opinion testimony of an expert witness is competent if there is evidence to show that, through study or experience or both, the witness has acquired such skill that he is better qualified than the jury to form an opinion on the particular subject of his testimony (*State v. Johnson*, 280 N.C. 281, 185 S.E. 2d 698 (1972))." "The common law... does not require that the expert witness on a medical subject shall be a person duly licensed to practice medicine (2 Wigmore on Evidence § 569, pp. 667-668 (3d ed. 1940); *State v. Johnson*, supra; 2 Jones on Evidence § 14.13, p. 619 (6th ed. 1972); 1 Stansbury's N.C. Evidence § 135, pp. 439-440 (Brandis rev. 1973))." The court supported its decision by noting the growing role that nurses play in the diagnosis and treatment of human ailments. "The role of the nurse is critical to providing a high standard of health care in modern medicine. Her expertise is different from, but no less exalted than, that of the physician." It further noted that a witness's education, knowledge, information, skill, and experience should be the deciding factors. "An expert witness is not disqualified from giving an expert opinion as to the cause of a physical injury simply because he is not a medical doctor." A new trial was ordered. The defendant petitioned to the Supreme Court for

a discretionary review (authority of the courts to decide which appeals they will consider from among the cases submitted to them); however, this was denied (*Maloney v. Hospital Systems*, 1980).

The Evolution of Legal Nurse Consulting

As a result of these aforementioned events, word slowly spread of law firms hiring nurses both as in-house staff and independent consultants. This trend is echoed in the personal experiences of two past presidents of the American Association of Legal Nurse Consultants (AALNC). Marlene Vermeer Campbell, an AALNC past president, reported that the Arizona legal community had been using in-house legal nurse consultants (LNCs) since the mid to late 1970s (M. Campbell, personal communication, February 8, 2011). With a general understanding of the work LNCs did, Ms. Campbell was interviewed and hired as an LNC with a large defense firm in Phoenix, AZ in early 1984. Ms. Campbell worked primarily on the defense of medical malpractice and personal injury cases with a small amount of product liability defense. As relevant for these cases, she reviewed and analyzed medical records, researched medical issues, located and worked with experts, prepared discovery and disclosure documents, and assisted with preparation for depositions, settlement, and trial. After three years at the firm, Ms. Campbell decided to venture out into independent practice. Armed with a referral letter from the Phoenix firm, Ms. Campbell recounts having little difficulty obtaining work as an independent LNC. She ascribes her success to the effective results she provided to attorneys, coupled with educating them about the value LNCs could offer. She also credits the personal growth and leadership skills she honed during her tenure with the AALNC.

In 1988, Barbara Levin, also an AALNC past president, received her first case through a word-of-mouth referral (B. Levin, personal communication, February 16, 2011). Prior to this case, she had never heard of legal nurse consulting. This first case and those she received over the next seven years were all personal injury cases. In addition to performing behind-the-scenes reviews, researching the case topics, and explaining the injuries and medical issues to the attorneys, Ms. Levin also attended independent medical examinations. Ms. Levin received a case in 1995 that was not only her first medical malpractice case but also her first case as an expert witness. Through networking opportunities, including those with the then Rhode Island AALNC Chapter (now the Southern New England Chapter of AALNC), the types of claims for which Ms. Levin was asked to provide consultation began to broaden to include product liability, toxic tort, and criminal cases. She also started working on issues related to patient safety and attending mediations as a fact witness.

In April 1988, "Law Firms Branch Out," an article published in the American Bar Association (ABA) Journal, reported that for the purposes of profitability, efficiency, and promotability, law firms were beginning to hire non-attorney staff, including nurses, to consult on their cases (Marcotte,

1988). Ms. Caroline Ehrlich, regarded as the founding mother of the AALNC (<http://www.aalnc.org/about/>), was featured in the article. In 1983, Ms. Ehrlich was hired by an Arizona law firm to work on personal injury cases, and her assignments later grew to include medical malpractice cases and physician peer-review. By 1988, this law firm had five nurses on staff. Another nurse featured in the article, Ms. Lolly Beaird, was hired by a Texas law firm in 1987 as the firm believed that having a nurse consultant on staff would “enhance its ability to serve health care providers and institutions” (Marcotte, 1988). The unique requirements needed for these legal clients sparked the movement by firms to provide staff experts in specific fields, including nursing.

By this time in 1988, the growth in the number of LNCs and the profession had led to the formation of three separate support groups of legal nurses in Arizona, Georgia, and California. A member of the San Diego, California group read “Law Firms Branch Out” and contacted an LNC in the Arizona group, named Arizona Nurse Consultants in Law. Because this contact sparked discussion of goals and aspirations for a larger organization (Collins, 2008), “Law Firms Branch Out” has therefore been lauded as the initial force behind laying the foundation for the AALNC (Vallarelli & Curran, 2000). Led by Ms. Ehrlich, the AALNC was founded in July 1989, and its first Board of Directors was elected in March 1990. The Table (see below) provides key dates in the history of AALNC.

In the practice arena, the trend to use LNCs was slow to catch on for multiple reasons, including the conservative nature of the legal profession, the need for attorney education

on the benefits of using nurse consultants, and the silence by the firms using nurses so as not to divulge their “secret weapons” (“Nurses find,” 1991). However, as the 1990s progressed, the use of LNCs continued to grow beyond the expert witness role. This was evident in the Scope of Practice for the Legal Nurse Consultant published by AALNC in 1994 (AALNC, 1994). This document was based on data collected from a 1992 role delineation study (Iyer, 2003) and revealed that LNC practice settings had increased to include law firms, government offices, insurance companies, hospital risk management departments, and independent practice. The practice areas included product liability, medical malpractice, workers’ compensation, toxic torts, risk management, medical professional licensure investigation, and criminal law as well as personal injury. Revisions to this Scope of Practice Statement were made in 1995 to reflect AALNC’s position that legal nurse consulting was a specialty practice of nursing (Iyer, 2003). This became part of the *Scope and Standard of Practice for the Legal Nurse Consultant* published by AALNC in 1995 (AALNC, 1995).

In 1997, AALNC published the textbook *Legal Nurse Consulting: Principles and Practice* (Bogart, 1997) which described in detail the practice and functions of the LNC. This hallmark textbook identified several new practice areas for LNCs, including independent medical examinations, life care planning, and noneconomic damages testimony. The continued growth of the profession is evident in the two subsequent editions of this text, published in 2003 and 2010 respectively. The following new practice areas and settings were identified: case management, nursing home

Table: Key dates in the history of the American Association of Legal Nurse Consultants

YEAR	EVENT
1989	American Association of Legal Nurse Consultants (AALNC) was founded.
1990	AALNC’s first Board of Directors was elected.
1990	AALNC’s first annual national educational conference was held in Phoenix, Arizona.
1992	AALNC’s Code of Ethics was published.
1994	AALNC’s Scope of Practice Statement was published.
1995	The first edition of the <i>Journal of Legal Nurse Consulting</i> was issued.
1995	AALNC published the <i>Scope and Standard of Practice for the Legal Nurse Consultant</i> .
1997	The 1st edition of <i>Legal Nurse Consulting: Principles and Practice</i> was published.
1997	The American Legal Nurse Consulting Certification Board (ALNCCB) was formed.
1998	The first Legal Nurse Consultant Certification (LNCC) exam was administered.
1999	AALNC authored a position statement on The Role of the Legal Nurse Consultant as Distinct from the Role of the Paralegal and Legal Assistant.
1999	The LNCC program was accredited by the American Board of Nursing Specialties.
2003	The 2nd edition of <i>Legal Nurse Consulting: Principles and Practice</i> was published.
2005	AALNC authored a position statement on the Specialty Practice of Legal Nurse Consulting.
2006	AALNC authored a position statement on Providing Expert Nursing Testimony.
2006	Legal nurse consulting was recognized as a nursing specialty practice by the American Nurses’ Association upon the publication of <i>Legal Nurse Consulting: Scope and Standards of Practice</i> .
2006	The ALNCCB authored a position statement on Certification in Legal Nurse Consulting.
2010	The 3rd edition of <i>Legal Nurse Consulting: Principles and Practice</i> was published.

litigation, litigation related to the Employee Retirement Income Security Act and health maintenance organizations (Iyer, 2003), subacute rehabilitation litigation, accident reconstruction, administrative health law, Medicare Set-Asides, fraud, employment law, occupational health and safety, and litigation related to residential and community-based care (Peterson & Kopishke, 2010). The next several years were monumental in the recognition of legal nurse consulting as a distinct nursing specialty. In 1997, the American Legal Nurse Consultant Certification Board (ALNCCB) was established and offered the first certification examination as a legal nurse consultant certified (LNCC) in 1998. In 1999, the American Board of Nursing Specialties (ABNS) (now the Accreditation Board for Specialty Nursing Certification) accredited the LNCC certification program (Iyer, 2003) which is the only recognized LNC certification by ABNS. This acknowledgment elevated the profession to a new level and gave credence to LNCs in the eyes of nursing and legal colleagues. Moreover, this was one necessary constituent for the official recognition of legal nurse consulting as a nursing specialty (ALNCCB, 2006).

In response to the ABA's suggestion in 1998 that LNCs be included in their definition of a paralegal / legal assistant, the AALNC published a position paper *The Role of the Legal Nurse Consultant as Distinct From the Role of the Paralegal and Legal Assistant* (AALNC, 1999; Iyer, 2003) that stated the foundation of the LNC's practice in the legal setting is his/her nursing knowledge and expertise and that legal education is not required for an LNC to practice. These statements, coupled with a list of distinguishing activities performed by the LNC, supported the recognition by the AALNC of a clear distinction between the role of the LNC and the paralegal / legal assistant. By clarifying the divergence of these roles and recognizing the added value that only LNCs can offer, this position paper helped advance the profession for LNCs working behind-the-scenes for law firms.

The use of nurses to testify about nursing standards of care was also slow to develop as many attorneys apparently continued to use physicians for this testimony. For example, in the Illinois case of *Sullivan v. Edward Hospital* (2004), the plaintiff offered a physician to testify as to the applicable standard of care for nurses. The American Association of Nurse Attorneys authored and submitted a brief to the Illinois Supreme Court in this case (Butler, 2003). Arguing that the responsibility and authority to define the scope and practice of nursing was solely within the purview of nursing, the brief reasoned that only a nurse was qualified to offer expert opinion as to the standard of care for nurses. Citing this brief extensively in its decision, the Illinois Supreme Court ruled that only a nurse is qualified to offer opinion evidence as to the nursing standard of care (*Sullivan v. Edward Hospital*, 2004).

To further solidify its view that expert testimony regarding nursing standards of care should only be offered by registered nurses, the AALNC published its *Providing Expert Nursing Testimony* position statement (AALNC, 2006),

noting that the nursing profession is independent from the medical profession and other allied health disciplines and, as such, defines and publishes its own standards of care and practice. Therefore, "when applicable nursing standards need to be established through expert testimony, the expert shall be a licensed, registered nurse" (AALNC, 2006, p. 2).

Another event in 2006 proved to be a milestone for the profession of legal nurse consulting. Upon the publication of *Legal Nurse Consulting: Scope and Standards of Practice*, legal nurse consulting became recognized as a specialty practice of nursing by the American Nurses' Association (ANA) (American Nurses Association, 2006). This acknowledgment by the ANA added additional credibility and authority to the profession of legal nurse consulting.

According to Ms. Levin (B. Levin, personal communication, February 16, 2011), with knowledge, expertise, and a passion for education, the sky is the limit for the legal nurse consulting profession. This advancement is evident in the 2007 Legal Nurse Consultant Practice Analysis (Webb, 2007) which shows the evolution in practice since its earlier days of working solely in-house or independently and primarily on personal injury or medical malpractice cases. The practice analysis revealed that the majority of LNCs (54.3%) worked as solo practitioners in independent practice, followed by working for law firms (33.3%), insurance companies (8.1%), and LNC firms (7.8%). Other settings included health care facilities (5.4%), governmental agencies (2.7%), and litigation management companies (4.3%). Legal practice areas included medical malpractice, personal injury, product liability, expert witness work, risk management, workers' compensation, and elder law. Newer areas of legal nurse consulting were also identified to include life care planning, criminal / forensic work, and regulatory compliance. This evolution of practice settings and practice areas, coupled with the value of LNC work, has allowed for the expansion of issues for which an LNC is qualified to testify (Cohen, Rosen, & Barbacci, 2008) such as liability, causation, damages, pain and suffering / non-economic damages, criminal issues, and forensic topics.

Thanks to the pioneers who launched this profession and to the trailblazers who have continued to evolve it, the profession of legal nurse consulting has experienced tremendous growth since its origin. Ms. Campbell described that the evolution of legal nurse consulting is dependent on both innovative nurses and receptive customers (M. Campbell, personal communication, February 8, 2011). Those who recognize the needs of the legal community and then deliver a product to fulfill those needs have and will guide the profession into the future.

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Informatics: Helping the LNC Adjust to Electronic Records

Being Prepared – Part II: Knowing What to Expect with Electronic Health Records

By Debra M. Wolf, PhD MSN BSN RN and Deborah L. Nellis, DNP RN LNCC

KEY WORDS

Electronic Documentation, Computers, Technology, Medical Records, Electronic Health Records, Informatics

This article is the second of a two part series that will assist legal nurse consultants (LNCs) to increase their understanding of Health Information Technology (HIT) and to be more proficient in reviewing and requesting electronic health records (EHRs). Part I titled "Understanding the transition: Moving from paper to electronic records" provided a foundation of knowledge that centered on why organizations are transitioning to electronic charting, the impact political reform has had on EHRs, the challenges of implementing an EHR, and the various organizations involved in the protection of health information. Part II introduces the LNC to the various types of functionality found within EHRs and presents a tool to assist LNCs in requesting EHR documents for review. Being able to speak the language and request selected documents in detail will assist the LNC in completing a timely and full medical record review for legal litigation.

As legal nurse consultants (LNCs) begin to better understand and adjust to electronic health records, they begin to have a stronger cybersense including an understanding of the terminology and functionality used within the newly designed electronic health records. Key questions a LNC may ask include a) What processes were used in designing the electronic forms?; b) What functionality exists that guides documentation within an electronic health record (EHR)?; c) What logic or clinical decision support is used to guide the clinician in making critical decisions?; and d) How are EHR downtimes handled or documented within the organization? This article is the second of a two part series that will assist the LNC in asking critical questions that need to be considered when requesting and reviewing patient medical records.

LNCs recognize that healthcare providers receive multiple requests from a variety of entities for patient health information. These entities include insurance companies, health plans, personal injury lawyers, employers for pre-employment physical, and government agencies such as Medicare, Social Security Disability, and Worker's Compensation (U.S. Department of Health & Human Services, 2003). In each of these cases, reasonable effort is made by the providers not to disclose more patient information than is necessary to accomplish the intended purpose of the requester (Hester, 2003). Therefore, limited information may be received if a request is not clearly defined or outlined.

This limitation of information by healthcare providers is also supported by the Privacy Rule enacted in 1996 that notes certain entities such as personal injury lawyers must submit an authorization for requesting medical records (U.S. Department of Health & Human Services, 2003). This authorization must be in plain language, disclose the reason for the request, have an expiration date, and have the ability to revoke the request (Ouletee & Reider, 2007; U.S. Department of Health & Human Services, 2003). Some individuals have

concerns that the Privacy Rule does not do enough to keep individual health records safe (Rothstein & Talbott, 2007). There are other existing state laws and regulations that govern how, when, what, and to whom protected health information is released (Bock, Demster, Dinh, Gorton, & Lantis, 2008). Most states have a section in the Rules of Civil Procedure covering specifics of the request form, time to respond, and charges for medical information and billing (Taylor, 2009). For example, under Pennsylvania law, the health care provider owns the actual medical record (Pritts, 2006).

As LNCs become proactive in understanding the change brought about by electronic documentation, they will gain a stronger level of comfort in working with information obtained from an EHR. In addition, the LNC will become more literate in the terminology and functionality used in an EHR. This knowledge will help guide the LNC to know what information to request for a medical record legal review. LNCs must realize that computer literacy is different from health literacy and refers to the capacity to obtain, process, and understand basic information and services needed to make appropriate decisions regarding one's health (Joos, Nelson & Smith, 2010). A nurse, physician, or therapist must be able to identify what information is needed, find the information within the computer, and summarize the information to make a judgment decision. Retaining new knowledge by individuals who are very busy in their current role or job may be a challenge, especially when the content is interfaced with changing technology (Harton, 2007).

Before one can truly understand the functionality of an EHR, one must first understand the basics of an Information System (IS) versus a Health Information System (HIS). Information systems use a systematic way of producing information using an input, a process, and an output cycle (Joos, Nelson, Smith, 2010). Frequently one correlates computers with information systems as the tool used to

store, manage, and view information such as temperature, birthdates, allergies, addresses, etc. Based on the environment or organization in which one is employed, these information systems become associated with a profession, thus, HISs are used to integrate or interface data/information from various applications throughout a health organization (Joos, Nelson, Smith, 2010). One needs to remember that one HIS such as an EHR can contain several information system databases (that may or may not be purchased from the same vendor), all of which may be viewed through separate programs, applications, or software. For example, a hospital may have a separate information system for laboratory testing and storing of results, one for radiology imaging and viewing, another for pharmaceutical needs, and one for clinical documentation. Frequently, interfaces are used to interconnect these systems so data elements can be shared, viewed, or exchanged. In summary, the ability of an HIS to be individualized by healthcare organizations and manufacturers of IS technology results in the lack of a “standard format or structure” for EHRs. This can cause more confusion for those trying to interpret the content in printed reports (previously known as patient paper health records).

When clinicians use EHRs to enter or retrieve data (such as physician orders) for viewing and decision-making, there are various types of functionality that can be designed and integrated into each application called clinical decision support (CDS). Osheroff et al. (2007) define CDS as tools that provide clinicians with filtered information to enhance the healthcare one receives. CDS may take the form of alerts (pop-up screens informing the clinician of some issue that needs closer attention) which automatically appear, based on preprogrammed logic or rules. For example, if a physician tries to enter an order for penicillin for a patient who is allergic to the drug, then an alert may appear stating “Your patient has an allergy to penicillin, do you want to proceed?” In order for this to occur, a rule needs to be created/coded that states if medication orders are entered into the system, the order must first be cross-referenced with patient drug and food allergies prior to completing the order entry process. If no conflicts are found, then the order continues through the interface to the pharmacy’s information system and then finally to the patient’s electronic medication administration record (EMAR). Critical to know at this point, is that an electronic trail is made that can be retraced to see if a programmed rule

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Table

EXAMPLES OF CLINICAL DECISION SUPPORT (CDS)	
Situation where CDS may be used	Example
Cosigning specific medications	Two nurses may be required to sign a electronic form prior to administering certain drugs (i.e., heparin or insulin) before the system will allow the form to be saved or exited
Cosigning physician orders	Nurses may be required to validate they viewed physician orders electronically by some predefined process using alerts and rules
Automatic consults to specialty services based on admission assessment	Based on nursing admission assessment, the respiratory department may be automatically consulted if a patient smokes, or social service may be automatically consulted if physical abuse is questioned by the nursing staff
Notification of critical lab value results	Direct notification of attending MD through mobile devices may be created or highlighted with results (in red) on computer screens requiring clinicians to verify their awareness of results
Medication administration – Bar coding devices	Clinicians can be notified through use of alerts if administering the wrong medication, a dosage, or to the wrong patient

Note: Adapted from - Osheroff, J, Teich, J, Middleton, B, Steen, E, Wright, A, & Detmer, D. (2007). A roadmap for national action on clinical decision support. Journal of American Medical Informatics Association, 12 (2), 141-145.

did fire and what action the clinician took when the alert was viewed, all of which is usually date and time stamped. As required by federal privacy law all EMR systems must have a “tracking system” to track who accessed the patient’s record. This tracking information must be kept for six years (U.S. Departments of Health and Human Services, 2003). The LNC will want to review all tracking data.

This type of functionality is very common within electronic order sets. These electronic order sets are collections of individual orders usually preselected by an approval committee or person within the organization that outlines key orders needed based on admission diagnosis, treatment protocol, or hospital policy. For example, if a patient is admitted with a primary diagnosis of congestive heart failure (CHF) and a clinician begins to enter individual orders versus the CHF order set, an information alert may appear indicating that a CHF order set is available for use. The LNC will be able to question when reviewing electronic orders whether an order set was available, and if ignored, why was the alert not observed and who entered the orders?

Other ways CDS functionality can be used is with electronic clinical documentation by various professionals such as an occupational therapist, physical therapist, nurse, physician, nursing assistant, student, and consultant through a series of screens that display various types of data entry

mechanisms. These screens are either predesigned by the vendor of choice or customized by the organization to meet the staff’s current workflow or the organization’s needs and take the place of paper forms traditionally used within the healthcare setting. Various types of functionality may be found within each professional’s electronic documentation screens. Frequently organizations will make a decision on what default or standard they want to use to enter the date and time of documentation for all clinicians regardless of what department or role one may have. For example, the default could be set to automatically enter the date and time the electronic form/screen was opened or the default could be to enter the date and time the documentation was due or scheduled to be completed. Although defaults can be set, clinicians always have the option of changing the date and time or going back once documented to correct an error in documentation. This is important to know in any legal review of medical health records as these changes create an electronic trail and can be tracked for view and/or further investigation as needed.

What is unique about electronic documentation is that it can be designed to follow the nursing process and address issues the healthcare facility is currently experiencing. For example, a nurse during the initial admission assessment may move through several electronic forms/screens to document his/her findings, and if permitted be allowed to free text. The nurse may not be able to sign, save, or exit the form/screen if certain sections are not complete. This type of functionality is called conditional logic. Consequently he/she must go back, find the incomplete item, and complete the document as requested. This functionality is often used when institutions are attempting to meet standards set forth by various accrediting agencies such as the Centers for Medicare and Medicaid (CMS). For example, core measures set forth by CMS seek to determine if patients are screened for pneumonia or influenza vaccines upon admission. Using conditional logic, the nurse will be guided in completing the screening upon admission. Other examples in which CDS can be incorporated into an EHR are listed in the Table. These examples are only a few ways in which CDS can be incorporated into an EHR. Knowing how CDS works and how logic can be utilized to guide documentation and decision-making will assist the LNC in reviewing and interpreting a printed electronic medical record. More importantly this knowledge will aid the LNC to question what is seen or not seen in the printed reports reflecting patient care and request clarification of the record from the medical records department.

Technology has had a large impact on healthcare and will continue to shape the future of how patients are cared for and treated. This dependency on technology forces organizations to be prepared for the moment or time that the technology fails. Organizations must have a well thought out downtime plan for when technology fails (EHR system is not functional). LNCs must be cognizant when reviewing a printed EHR that the possibility of a downtime may have occurred. Knowing or questioning what an organization’s

downtime policy is will determine if additional documentation is available or whether an event has occurred as a result of information not being accessible.

As health care providers transition from paper charts to EHRs, requests from the LNC for medical records need to be clear and include language that specifically identifies what information is to be copied. Many healthcare providers have their own medical authorization forms that the requester must complete in order to receive a patient's health information/record. Unfortunately, most of these authorization forms have not been revised to include verbiage that adjusts for the hybrid state of paper and/or electronic formats of most facilities. In addition, these forms cannot be modified and often do not include language that describes various parts of the patient's EHR that are currently titled differently from the old paper record. For example, a patient's individual paper care plan is typically a collection of interdisciplinary documentation from social workers, nurses, physical therapist, etc. If the correct electronic name is not used, one may only receive partial care plans that are unique to one discipline. In summary, the existing authorization forms for release of health information have varying language and may not cover all categories of information the requestor needs from an EHR to ensure proper analysis of a legal case.

The authors have designed a guide called the Wolf-Nellis RFMI (Request for Medical Information) to assist the LNC and healthcare organizations in improving the level of communication needed to obtain the full medical record for legal review the first time the request is made (Figure).

There are 5 key areas of information and 20 elements of data that are included in the RFMI. The key areas include:

- Demographic information (Element 1)
- Clinical documentation notes (Elements 2-13)
- Flow charts or graphics (Element 14)
- Ordered laboratory, testing procedures, medication records (Elements 15-16)
- Overall plans and cost of care (Elements 17-20)

First, demographic information validates the correct chart is being requested/sent such as, the patient's medical registration number (MRN), address, age, birth date, social security number, or one's insurance information. Second, all records or documentation completed by clinicians such as, physicians, physician assistants, nurse practitioners, staff nurses, medical assistants, or therapists who cared for the patient during the visit should be requested. Third, any type of flow charts or graphic sheets that reflect patient outcomes over a period of time should be requested such as, vital sign flow sheets, height/weight charts, or diabetic glucose checks. Fourth, all ordered laboratory and tests need to be included, as well as all patient care orders, prescriptions, and diagnoses. Finally, any information that outlines the patient problem list, interdisciplinary plan of care, or follow up notes must be included. The intent of this guideline is to assist LNCs in organizing their thoughts in properly requesting copies of the patient's entire medical record (paper and electronic) and

Wolf-Nellis RFMI ***REQUEST FOR MEDICAL INFORMATION***

General questions to consider when preparing to request a medical record:

1. In what state of transition is the organization's formal patient record? (paper, electronic, or hybrid)?
2. Is any part of the paper chart currently being scanned?
3. What date did the organization begin to use electronic documentation?
4. Has the organization experienced any downtimes, where staff needed to convert to paper charts? If so, how is back-entering of documentation achieved once the system is functioning?
5. Is the physician involved in documenting or placing patient orders electronically?
6. What is the competency level of the staff documenting or using a system?

ELEMENTS	ENCOUNTER DATES			
1. Demographic information				
2. Clinical documentation and progress notes				
3. Emergency department documentation				
4. History and physical				
5. Consults				
6. Operative and anesthesia reports				
7. Paper chart documents				
8. Downtime paper documents and reports				
9. Electronic chart printed documents and reports				
10. Scanned documents				
11. List of staff names as indexed in electronic and paper chart				
12. Transmissions and faxes				
13. Patient care orders				
14. Flow sheets or graphs				
15. Medication record (paper and electronic)				
16. Lab and diagnostic results				
17. Problem lists				
18. Interdisciplinary plan of care				
19. Discharge summary				
20. Billing information				

Figure. Wolf-Nellis RFM

to help them assess if the copied chart received is complete. A benefit of copying the complete record on first request includes a timely review of records and avoids a second or third request for more information.

As the LNC considers and asks critical questions when requesting and reviewing patient medical records, he/she will become more confident in knowing whether the full medical record has been received. By questioning the completeness of the medical record, the LNC will be able to speak the language of informatics to delineate what additional records are needed for review. The Wolf-Nellis RFMI may be used as a guide but may not be all inclusive based on the LNCs needs or the case in review. As LNCs further their understanding of EHR functionality, skill levels will increase in both assessing information needed and critiquing medical records.

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Preparing a Nursing Negligence Expert Report in Six Paragraphs

By Wesley T. D. Myers and Bernadette P. Boutier, RN BSN

KEY WORDS

Expert, Report, Standard of Care, Nursing, Negligence

As conveyed by the title, this article provides a simple six paragraph framework to employ when preparing a nursing expert report in a medical malpractice case which can be utilized by nursing experts retained by either the party prosecuting or defending the lawsuit.

Nursing knowledge is specialized and generally considered to be outside the common understanding of a jury.¹ Consequently, in virtually every state and federal court in the United States, experts are required to be designated by the respective parties to prosecute or defend nursing negligence cases.² Additionally, in almost every state, there are requirements that the nursing expert prepare a formal written report conveying opinions about the care and treatment rendered to the patient in question.³

For those health care professionals who have been retained as experts, but have never previously prepared an expert report, the task can be daunting, as there are not ample or well-established textbook examples to follow as models. In many circumstances and jurisdictions, the failure to prepare an expert report correctly can have dire repercussions, including the potential dismissal of the lawsuit, an award of attorney's fees, or the expert being "struck" (precluded by the court from serving as an expert in the case).⁴

The purpose of this article is to briefly provide some basic guidance for framing an expert report to satisfy the minimal requirements of a report. This is not designed to substitute for the specific instructions provided by the retaining attorney, and it is strongly recommended that experts discuss with the attorney any specific elements or formatting requirements that he or she would like the expert to include in the report prior to a draft being prepared. However, whether a report is couched in the form of a letter to the attorney or an affidavit (when the opinions are sworn to before a notary public), the following six paragraphs comprise the essence of any expert report in a nursing negligence case.

Paragraph 1: Who is the Expert and How is He/She Qualified to Render an Opinion?

The first thing that an expert report needs to convey is that the expert maintains the necessary qualifications to be an expert in the lawsuit. Typically, a resume or *curriculum vitae* is required by law to be proffered in conjunction with the expert report so the expert's qualifications can be scrutinized.⁵ Therefore, the report itself does not have to go into great detail to outline all of the author's credentials. In fact, many expert reports simply reference the expert's *curriculum vitae* through a specific notation saying something to the effect of, "For more information on my background and experience, see my *curriculum vitae*, which is attached hereto." Notwithstanding, a simple reference to one's resume is insufficient in itself to convey to the reader that the expert maintains the necessary training and experience to address the particular standard of care at issue in the lawsuit.

A better practice is to begin the report with an introductory sentence identifying what type of professional the expert is, where he or she is employed, and how long the expert has been in the profession. This is followed by reference to the fact that the expert has encountered patients similar to the patient in question and that, based upon his/her education, training, and experience, the expert is intimately familiar with the standard of care applicable to the healthcare professional whose conduct is the subject matter of the lawsuit.

By including the aforementioned information in the initial paragraph of the report, the expert has conveyed to the reader that he/she possesses the qualifications and experience necessary to provide expert opinions in the case, and should

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1. A plaintiff must present expert testimony when the asserted negligence does not lie within the jury's comprehension as a matter of common knowledge, when the applicable standard of care is not a matter of common knowledge, and when the jury must have the assistance of experts to decide the issue of negligence. See *Robson v. Tinnin*, 911 S.W.2d 246, 249 (Ark. 1995); see also, *Ramage v. Cent. Ohio Emergency Servs., Inc.*, 592 N.E.2d 828, 830 (Ohio 1992) (holding that, in a negligence action involving the professional skill and judgment of a nurse, expert testimony must be presented to establish the prevailing standard of care, a breach of that standard, and that the nurse's negligence, if any, was the cause of the patient's injury).
 2. See, e.g., *George v. Sonoma County Sheriff's Dept.*, 732 F.Supp.2d 922, 949 (N.D. Cal. 2010) (requiring nursing experts in California); *Sturgill v. Ashe Mem. Hosp., Inc.*, 652 S.E.2d 302 (2007) (requiring certification by nursing expert in North Carolina, as the case presented a medical malpractice case as opposed to a general negligence case).
 3. See, e.g., ARK. CODE ANN. § 16-114-206 (Michie 2010) (law in Arkansas); CONN. GEN. STAT. ANN. § 52-190a (West 2010) (law in Connecticut); FLA. STAT. ANN. § 766.203 (West 2004) (law in Florida); TEX. CIV. PRAC. & REM. CODE § 74.351 (Vernon 2010) (law in Texas).
 4. See, e.g., TEX. CIV. PRAC. & REM. CODE § 74.351(b) (Vernon 2010), which permits not only dismissal of the case but also an award of the defendant's attorney's fees for an inadequate report.
 5. See, e.g., TEX. CIV. PRAC. & REM. CODE § 74.351(a) (Vernon 2010), requiring the submission of an expert's resume with their expert report.

not be “struck” on the basis of his/her qualifications being inadequate.

Paragraph 2: What the Expert has Reviewed in Formulating His/Her Opinions

The reader will be interested in what materials the expert has utilized to formulate his or her expert opinion, as expert opinions have to have a sound basis in order to make them admissible in court.⁶ As the attorney/client privilege does not extend to a testifying expert, there are no secrets. Therefore, this paragraph simply is a list of the materials the expert has been provided and/or reviewed in preparing the report. It can be as easy as, “In formulating my opinions, I have reviewed the following documents,” followed by a numerical list of the information. Frequently, the retaining attorney sends materials to the expert to review with a coversheet delineating what is enclosed. The list on the coversheet can simply be copied into the report so long as the materials are indeed reviewed by the expert in forming his or her opinions.

By including this list of information, the expert has established that he or she has familiarized himself/herself with the materials pertinent to the case, and that such materials provided a foundation upon which to support the expert’s opinions.

Paragraph 3: “Snapshot” of the Facts

This paragraph is designed simply to provide the reader with some certainty that the expert is familiar with the basic factual scenario upon which the lawsuit is based. Frequently, attorneys representing the party prosecuting the lawsuit ask their experts to be more detailed in their rendition of the facts in order to “scare” the defense with the sheer number of deficiencies and inadequacies that can be identified. Contrarily, the attorneys representing the party being sued frequently ask their experts to be judicious in the factual recitation, including only that conduct which is absolutely necessary to convey an understanding of the facts underlying the case. The best practice is really a question of personal preference; however, the expert should keep in mind that the report is only designed as a summary. More specific details can be elucidated during subsequent deposition or trial testimony. Consequently, a hyper-detailed factual recitation is unnecessary and frequently undesirable.

Through the rendition of the facts, the expert conveys to the reader that the expert has a familiarity with the basic facts of the case derived through records, testimony, and other materials provided. The expert can also focus attention

on specific facts to highlight particular things in support of his or her position on whether or not the care provided was appropriate.

Paragraph 4: The Standard of Care Applicable to the Healthcare Provider

In most nursing negligence cases across the country, the plaintiff is required to prove four basic elements in order to prevail on his/her claim: 1) that the defendant owed a duty of care to the patient; 2) that the duty was breached; 3) that the breach caused damage to the patient; and 4) that the patient sustained an identifiable injury.⁷ The duty owed to the patient by the nurse is based on the applicable “standard of care.”

However, the “standard of care” is frequently either not formally defined by state law or its definition is nebulously penchant upon the opinion of health care providers who are similarly qualified as the defendant.⁸ Thus, whether supporting the prosecution or the defense of a case, the expert must be prepared to identify what the healthcare provider at issue in the lawsuit should or should not have done under the circumstances presented in the case. Put another way, in this paragraph of the report, the expert identifies what care should have been provided in an ideal situation when dealing with the patient in question. This essentially sets the benchmark for the opinion paragraph to follow. Either the care was equal to or above the minimum expected treatment to be provided (i.e., the “standard of care”), or it was below the minimum allowable care. The standard set forth in this paragraph is the measure that will be used to gauge the conduct of the defendant.

This paragraph serves two functions. Not only does it illustrate that the expert is familiar with of the applicable standard of care, but it provides the reader with an understanding of how the patient should have been treated given his or her presenting signs and symptoms.

Paragraph 5: The Expert’s Opinion

By far, this is the most important paragraph of the report, as it addresses the ultimate issue, which is: did the healthcare provider satisfy the standard of care under the circumstances presented in the case? The answer to this question should be addressed unequivocally in the expert’s report. In fact, it should be as overt as the following: “Based upon my education, training, experience, and the materials that I have reviewed in this case, it is my opinion that [healthcare provider] satisfied/failed to satisfy the applicable standard of care in the treatment of [patient].”

6. See FED. R. EVID. 703.

7. See, e.g., *Brown v. Philadelphia College of Osteopathic Med.*, 760 A.2d 863, 868 (Pa. Super. 2000); *Mellies v. Nat’l Heritage, Inc.*, 636 P.2d 215, 218 (Kan. Ct. App. 1981).

8. As examples, in Connecticut, the standard of care is statutorily defined as follows: “The prevailing professional standard of care for a given health care provider shall be that level of care, skill and treatment which, in light of all relevant surrounding circumstances, is recognized as accepted and appropriate by reasonably prudent similar health care providers.” CONN. GEN. STAT. ANN. § 52-184c (West 2010). In Alabama, the standard of care is statutorily defined as follows: “The standard of care is that level of such reasonable care, skill, and diligence as other similarly situated health care providers in the same general line of practice, ordinarily have and exercise in like cases.” ALA. CODE § 6-5-542(2) (1975). The standard of care for nurses in California is defined through case law as the degree of skill, knowledge and care of other nurses in similar circumstances. *Alef v. Alta Bates Hosp.*, 6 Cal. Rptr. 2d 900 (1992).

This paragraph works in tandem with the preceding paragraph, and the expert is strongly encouraged to cite basic examples of how the standard set forth in the preceding paragraph was either met or violated by the healthcare provider in question. Often in expert reports, numerical lists of what the healthcare provider did correctly or incorrectly immediately precede or follow the expert's ultimate opinion concerning the standard of care. The expert should be careful about how these examples are worded and be prepared to defend his or her position on each of the examples provided, as they will be the point of attack during subsequent cross-examination of the expert during deposition and/or trial.

Depending on the type and qualifications of the expert, this paragraph would also be where the expert would address his or her opinions on causation. Such opinions should be offered within a "reasonable probability" (meaning greater than 51% certainty), and that phrase should actually appear in the report. However, the expert is encouraged to discuss with the retaining attorney whether causation opinions are to be addressed, as the laws of many jurisdictions limit the capability to offer causation testimony to only medical, as opposed to allied health, professionals.⁹ Offering opinions beyond the expert's legal qualifications is a sure way to draw a motion to strike the expert.

The opinion paragraph provides the reader with the expert's ultimate conclusion in the case, and as highlighted above, will be the focal point of the opposing counsel during subsequent cross-examination during depositions and/or trial. While there is a natural inclination to attempt to fully defend one's opinions in the expert report, a better practice is to hit only the highlights necessary to convey and defend the position. As noted, the report is simply designed to provide the opposing side with a basic understanding of the expert's opinion. A detailed defense of the expert's opinions is best left for deposition or trial testimony. Further, the more detailed the report, the more cross-examination fodder the expert provides to the opposing side to use against him/her.

Simple and to the point provides far less of a preview of what the expert subsequently intends to use to support his/her position at trial.

Paragraph 6: The Conclusion

The final paragraph of the report needs to be no longer than one sentence. It is simply used to provide confirmation that the expert reserves the right to alter or amend his/her opinions if additional information were to become available. While this paragraph is truly more formative than substantive, as the expert typically can modify opinions at any time, it simply documents that the expert is aware that opinions are fluid and not restricted to only what is contained in the report.

Every legal jurisdiction has its own idiosyncrasies, and it is strongly encouraged of the expert to discuss any particularities of the expert report with the retaining attorney prior to drafting the report, as such a conversation would potentially prevent errors that could prove costly or even fatal to the case. However, the six paragraph approach outlined above should satisfy the basic requirements of an expert report in a nursing negligence case and make the novice expert, in particular, a bit more comfortable in the preparation of an expert report.

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9. See, e.g., TEX. CIV. PRAC. & REM. CODE § 74.403(Vernon 2010), which essentially limits causation testimony to be given by only physicians in Texas; see also *Long v. Methodist Hosp. of Indiana, Inc.*, 699 N.E.2d. 1164, 1169 (Ind. Ct. App. 1998) (holding only physicians are qualified to give causation opinions in Indiana). However, in other venues causation opinions by nurses have been upheld. See, e.g., *Homes Reg'l Med. Ctr., Inc. v. Wirth*, 49 So.3d 802 (Fla. Dist. Ct. App. 2010) (applying Florida law); *Freed v. Geisinger Med. Ctr.*, 5 A.3d 12 (Pa.2010) (applying Pennsylvania law).

Osteoporosis and Hip Fractures

By Ann M. Peterson, EdD MSN RN FNP-BC LNCC

KEY WORDS

Bone Mass Density, Osteoporosis, Osteoporotic Fracture, Remodeling Process

Determining the role of osteoporosis can be a challenge to the legal nurse consultant (LNC) reviewing a hip fracture case. Epidemiology, pathogenesis, diagnostics and treatments are reviewed. All factors must be weighed and considered along with the patient's needs and rights when reviewing liability issues of a case.

Epidemiology

Osteoporosis is a major public health concern with an estimated 10 million Americans having osteoporosis and 34 millions more at risk (Illinois Department of Public Health, n.d.). These numbers are expected to rise to 14 million and 47 million, respectively, over the next 10 years and the number of hip fractures to double or triple by 2040 [International Osteoporosis Foundation (IOF), 2010]. Notable statistics indicate:

- The 65 and over age population is expected to increase 77.5% between 2010 and 2030 (U.S. Census Bureau, 2005)
- Women make up 80% of those with or at risk for osteoporosis (National Institute for Health, 2006)
- 1 in 3 women over age 50 will sustain an osteoporotic fracture (IOF, 2010)
- 1 in 5 men over age 50 will sustain an osteoporotic fracture (IOF, 2010)
- Forty percent of the affected women and up to 30% of affected men will suffer one or more fractures (IOF, 2010)
- A history of a fracture increases the risk for another fracture by 86% (IOF, 2010)
- The incidence of hip fractures peak at age 75-79 for both genders (IOF, 2010)
- 30% of hip fractures occur in men (IOF, 2010)
- 33% of patients with hip fracture will continue to require nursing home placement after one year (IOF, 2010)
- Among nursing home residents 85% have osteoporosis at the time of admission (Hansen & Binkley, 2007)
- Three out of four over 65 years old nursing home residents fall each year with the risk of fall being highest in the first months after admission; 1/3 are injured, 11% seriously [Business Innovation Factory, n.d.; Tinetti, 1987; Rapp, Becker, Lamb, Icks & Jochen, 2008; Center for Disease Control (CDC) 2010]
- Up to 10% of patients with a hip fracture will experience a second hip fracture within 3.3. years (IOF, 2010)
- Mortality associated with osteoporotic hip fracture is 20% within the first year (Hansen and Binkley, 2007)

- Men have higher mortality rates related to fractures (Hansen & Binkley, 2007; Tinetti, 1987; Rapp, Becker, Lamb, Icks & Jochen, 2008; CDC, 2010; IOF, 2010)

Hip fractures are the most prevalent fall-related injury among the elderly over age 65 years. They are clinically significant because they impact the quality of life by causing reduced mobility, loss of independence, chronic pain and increase the risk of death. Ray, Chan, Thamer, & Melton (1997) found osteoporotic fractures of the hip accounted for 432,448 hospitalizations and 179,221 nursing home admissions. Half of the older adults hospitalized with hip fracture will never regain their pre-fall function and up to 13% will require long-term care placement (Tinetti & Williams, 1997).

Substantial direct and indirect costs are associated with the high morbidity and mortality of osteoporosis. Ray, Chan, Thamer, and Melton, (1997) estimated health care expenditures attributed to osteoporotic fractures to be \$13.76 million, with hip fractures accounting for \$8.7 million of the total direct medical costs; 44% of the direct medical care cost going for hospitalization (CDC, 2010). In 1992, the non-medical costs and indirect morbidity and mortality costs associated with hip fractures were estimated at \$262.6 million with the cost projected at \$54.9 billion for 2010 (CDC, 2010).

Physiology

Normal Bone

Bone contains specialized cells – osteoblasts, osteoclasts, and osteocytes – necessary for structure and strength. Osteoblasts and osteoclasts are modulated by monocytes, macrophages and fibroblasts, osteocytes, type I collagen, and non-collagenous proteins (osteocalcin in the presence of vitamin K which enables calcium to be taken from the blood and laid down in the bone, osteonectin, thrombospondin, and other sialyted and phosphorylated proteins) make up the organic matrix of bone. The osteoblasts stimulated by serum hormone levels [e.g., parathyroid hormone (PTH)] and vitamin D form new bone and maintain the strength of existing bone. Osteocytes are mature osteoblasts embedded in the hard

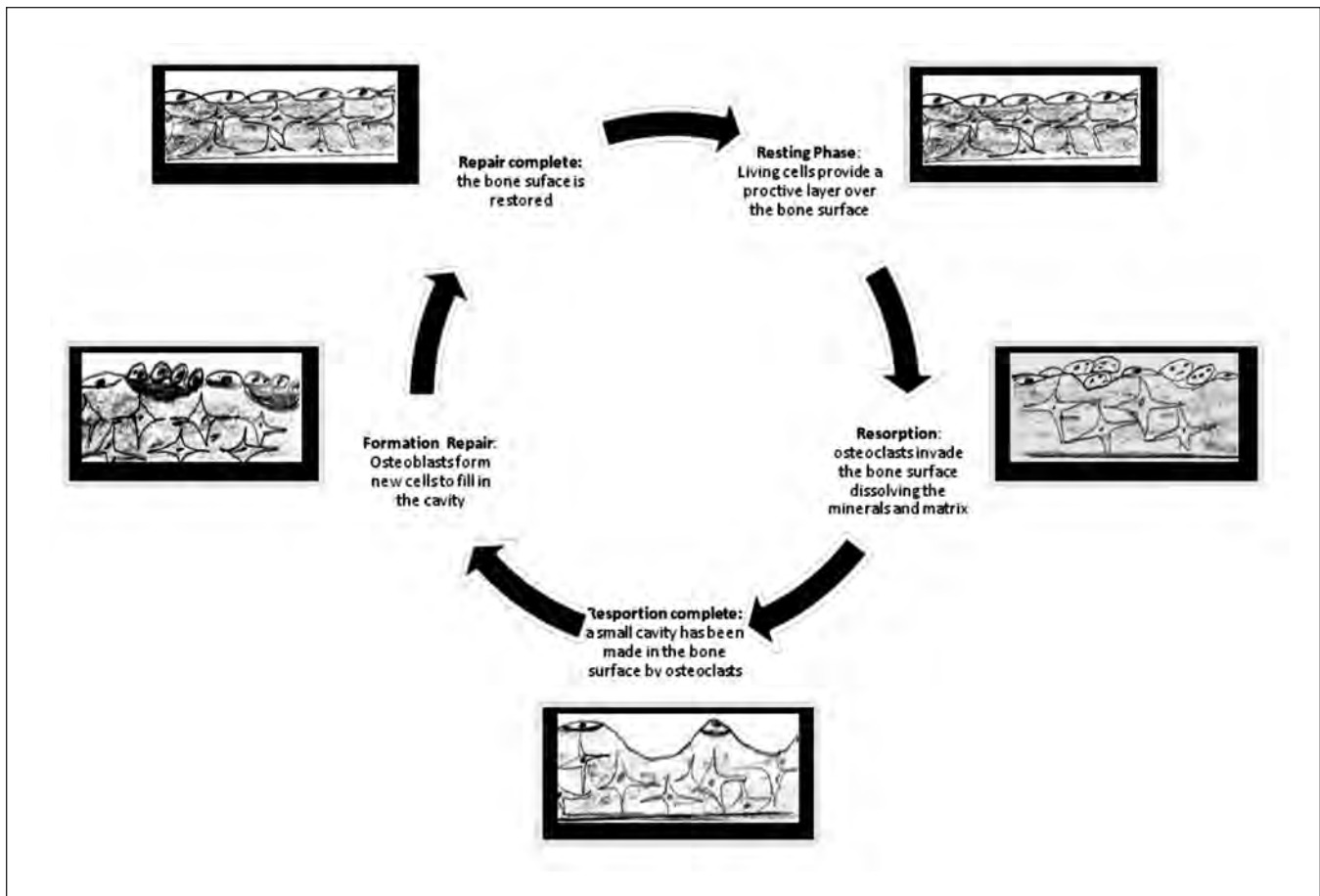


Figure 1: Bone Remodeling Cycle

(outer) bone and signal osteoblasts when new bone is needed. Osteoclasts and macrophages build bone through resorption or removal (dissolving) of bone from one surface to a nearby surface. Calcitonin influences osteoclastic bone resorption by inhibiting synthesis (Becker, 2008).

Upon reaching a genetically predetermined bone mass, usually in the third decade of life, a plateau period with a constant rate of bone formation and resorption begins with each cycling unit lasting up to four months in adults (Lane, 2008) (Figure 1). This continuous, lifelong remodeling process occurs on all bone surfaces and is stimulated by muscle tension on bone during physical activity and direct impact such as that occurring from walking or running. Bone formation surpasses bone resorption in childhood and adolescence but once the plateau period is reached, a period of annual bone loss of 0.3% to 0.5% begins (Becker, 2008). With the onset of menopause, women will have a 10-fold increase in bone loss lasting up to 7 years (Simon, 2007). Declining hormones (estrogen in women and testosterone in men), age-related increase in PTH, vitamin D deficiency, and declining IGF-1 (insulin-like growth factor 1, also known as somatomedin C) levels in men are attributed to an annual rate loss of 1% (Khosla, Amin & Orwoll, 2008).

Changes Associated with Aging

All cells change with aging leading to a progressive loss of function but the rate, influenced by genetics, hormones, environment, lifestyle activities, and past illnesses, varies among people. Bone loss occurs when the balance between bone formation and resorption is upset such as occurs with the decrease in estrogen production associated with menopause. Bone strength is diminished when calcium and phosphate levels are disrupted due to a decrease in PTH production and bone mass becomes less dense as calcium and other minerals are lost (Khosla et al., 2008).

As bone mass density (BMD) decreases, vertebrae become thinner and more compact causing spinal column curves to become more pronounced (kyphosis/dowager's lump) and the arm and leg bones to become more brittle (Figure 2). Joints become stiffer and less flexible with hip and knee joints losing cartilage. Muscle tissue atrophies and is replaced with tough fibrous tissue becoming more rigid with less tone and ability to contract (Medline Plus, 2010).

Other organic transformations of note include slowing of nerve cell transmissions; loss of lung elasticity and decrease in lung capillaries; decreased ability of kidneys to filter blood

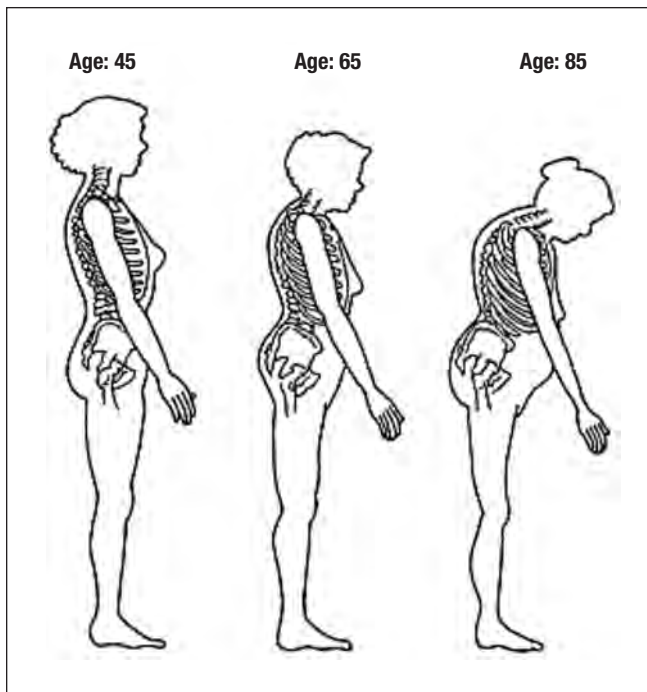


Figure 2: Osteoporosis of the vertebrae. As the skeleton grows increasingly fragile, bone fractures, “dowager’s hump,” and loss of height may occur. Permission granted by Cancer Supportive Care.

due to reduction in nephrones; heart valves stiffen, the SA node slows and the heart size enlarges; baroreceptors monitoring blood pressure become less sensitive, capillaries thicken and the arteries become stiffer; blood volume and red blood cell production decreases; the immune system weakens as T-cell function decreases; and the skin becomes less elastic and thinner as connective tissue is reduced resulting in a reduction in its insulating and padding functions. Co-morbid conditions arising from these changes are coupled with risk factors for osteoporosis and falls (Medline Plus, 2010).

The more obvious result of aging is a decrease in strength and endurance, posture becomes more stooped, knees and hips are more flexed, the neck may tilt and shoulders become narrower as the pelvis widens, and movement becomes slower and unsteady (Medline Plus, 2010). Also senses, memory, and thinking may slow down; lung function decreases reducing the amount of oxygen diffusing from the blood and the maximum force of inspiration and expiration, thereby increasing the risk of lung problems such as pneumonia; and orthostatic hypotension, fatigue, and decreased resistance to infection may develop. Many of these changes, along with polypharmacy and psychotropic medications prescribed to the elderly may increase the risk of falls.

Pathogenesis of Osteoporosis

The epidemiology is defined and effects of aging recognized in the literature but the actual mechanism of osteoporosis remains unclear (Raisz & Seeman, 2001). It is hypothesized

that structural deterioration of bone associated with aging occurs when resorption outpaces bone formation making the bone less dense and more porous and leading to bone fragility and fractures. The cortex or exterior bone becomes weak as calcium is leached from the bones and the trabecular (spongy inner part of bone) bone develops large empty spaces. Minute breaks in the bone occur and eventually a major fracture results. This process is influenced by genetics, gender, age, race, stature, and site (Khosla et al., 2008).

Bone loss due to aging occurs in both sexes but in a different pattern (Aaron, Makins & Sagreya, 1987). Although bone loss in menopausal women is associated with estrogen reduction, inadequate intake of calcium and vitamin D and lack of weight-bearing exercise may be just as important (Dawson-Hughes, 1997). Men with hypogonadism or undergoing prostate cancer treatment experience accelerated bone loss when testosterone production is disrupted (Bellantoni, n.d.). While the number of men with osteoporotic fractures is rising with fractures occurring at an earlier age than women (Khosla et al., 2008), the sequelae are comparable to that of females (Francis, 2000; Cauley et al., 2010).

Diminished appetite resulting in lower calorie, protein, and mineral consumption and decreased stomach acid production causing reduced intestinal absorption can cause nutritional osteoporosis (Orwoll, Weigel, Oviatt, Meier & McClung, 1987). High caffeine intake accelerates bone loss, particularly in the spine of postmenopausal women (Rapuri, Gallaher, Kinyamu & Ryschon, 2001). Insufficient folate, and B12 and B6 cofactors in homocysteine metabolism may be associated with bone loss and risk of osteoporotic fractures (McLean, et al, 2008). Vitamin K2 and vitamin D3 enhance osteoblasts and inhibit osteoclasts; high phosphorus levels increase PTH secretion and lower calcium absorption. Vitamin C may help reduce bone loss in elderly men (Sahni et al., 2008).

Medications can also impact the remodeling process. For example, corticosteroids impair bone formation (Lane, 2008) and anti seizure medication such as phenytoin impair vitamin D metabolism. Depo-Provera contraception injection may also place the user at risk for osteoporotic fractures as BMD is lowered in response to reduced serum estrogen levels (Urbanski, 2004) (Table 1).

Risk Factors

The risk factor for falls and the risk factor for osteoporosis are similar (Table 1). Nursing home residents with mobility are at risk for falls and those independent with transfers are at a significant risk of osteoporotic fractures which are typically sudden in onset and can occur with sudden movement, lifting, or even coughing (Chandler et al., 2000, Simon, 2007). The cause of falls is often difficult to explain given one-third of the victims are unable to recall the circumstances of the event (Cummings, Nevitt & Kidd, 1988); even so, many of these injuries will result in a law suit.

Table 1: Risk Factors

FALL RISK FACTOR	OSTEOPOROSIS RISK FACTORS
Female	Female
Advanced age	Advanced age
Caucasian	Caucasian or Asian (Mayo Clinic staff, 2010)
Impaired mobility	A sedentary lifestyle (Toss, 2002)
Prior fall	Prior fracture
Medical conditions: Arthritis, degenerative joint disease of hips/knees, foot disorders, loss of limb(s), osteoporosis, fractures, hypertension, vertigo, CVA, Parkinson's Disease, seizures	Medical conditions and procedures: Hyperthyroidism, hyperparathyroidism, diabetes mellitus, lupus and rheumatic hypogonadism, growth hormone deficiency, idiopathic hypercalciuria, arthritis, asthma, depression, celiac disease, multiple sclerosis, malabsorption syndromes, gastrectomy, cirrhosis, transplantation (Shaw, 2009; Mayo Clinic staff, 2010; Hansen & Binkley, 2007; Plotnikoff, 2007)
Impaired neuromuscular function	Impaired neuromuscular function
Reduced muscle strength and balance, impaired gait	Reduced muscle strength and balance, impaired gait
Medications: anesthetics, antihistamines, cathartics, diuretics, antihypertensives, anti-seizure, benzodiazepines, hypoglycemics, psychotropics, sedative/hypnotics	Medications: Corticosteroids, Proton pump inhibiting drugs, anti-seizure medications, lithium, warfarin, heparin, methotrexate, medroxyprogesterone, chemotherapy, cyclosporine (Hansen & Binkley, 2007, Plotnikoff, 2007)
Frailty; undernutrition	Low body weight/weight loss; malnutrition (Grinspoon, et al., 2000; Mayo Clinic staff, 2010)
Cognitive impairment	Small frame/stature (National Institute of Arthritis and Musculoskeletal and Skin Diseases, 2010)
Orthostatic changes	A family history of osteoporosis
Acute illness	Estrogen deficiency; testosterone deficiency
Hazardous environment: poor lighting, slippery floors, cluttered pathways, and bathrooms without hand rail support	Low bone density; osteopenia (UMHS Clinical Care Guidelines Committee, 2009)
Use of assistive device	High lipid levels (Gharavi, 2002)
Incontinence	Smoking (Law & Hackshaw, 1997; Mayo Clinic staff, 2010)
Impaired vision	Excessive alcohol consumption (Mukherjee & Sorrell, 2000).
Decreased hearing	

Assessment

Osteoporosis may be asymptomatic until a fracture, often with minor trauma, occurs. The majority of individuals who have had an osteoporotic fracture are not diagnosed and treated for osteoporosis (IOF, 2010). Osteoporosis can be primary or "involutional", a disease occurring in those 60 years of age and over or secondary that is, resulting from an endocrine disorder or therapeutic intervention (Simon, 2007) (Table 1) There is no universally accepted policy for screening patients at risk for fractures and, although risk factors do not reliably predict BMD, accurate assessment of risk factors effecting BMD is a starting point (Table 1).

Although findings on physical examination may show declining height indicating unappreciated vertebral fracture, there is no clinical means of assessing bone fragility. Sites most often affected by osteoporotic fractures include the spine, hip, distal forearm (Colles fracture), and proximal humerus. Vertebral fractures, thought to be underreported at 700,000 annually, often occur in the mid-thoracic and thoracolumbar regions causing substantial pain and loss of quality of life

(IOF, 2010; Riggs & Melton, 1995) and are associated with a two-fold increase in hip fractures (Bellantoni, n.d.).

Dual-energy x-ray absorptiometry (DEXA) is the gold standard for measuring BMD but is limited by residual errors (soft tissue calcifications, osteomalacia and osteoarthritis, severe scoliosis, contrast media, inadequate or varying reference ranges among equipment manufacturers, etc.). These factors influenced the World Health Organization (WHO) to develop an algorithm that estimates a 10 year probability of osteoporotic fracture (Hansen & Binkley, 2007). This fracture risk assessment tool, called FRAX®, available since 2008 at <http://www.shef.ac.uk/FRAX/charts.jsp#USc> is promoted by the National Osteoporosis Foundation (NOF) and International Society for Clinical Densitometry; however, conclusive studies about FRAX validity and reliability are unavailable. FRAX looks at sex, weight, height, smoking status, alcohol consumption, steroid use, family history of hip fracture, history of prior fracture, and rheumatoid arthritis diagnosis to predict a patient's risk of fracture.

Ultrasound measurements may be used to support the risk assessment but is not diagnostic for osteoporosis (Kanis, 2002). Elevated plasma homocysteine concentration is an unclear but strong risk factor for hip fracture (McLean, et al., 2008). Bone alkaline phosphatase, serum osteocalcin and urine deoxypyridinoline and pyridinoline measures may also indicate bone turnover but their usefulness is questionable (Bonnick & Shulman, 2006; Simon, 2007; El Maghraoui & Roux, 2008). Bone biopsy is not recommended (Malluche, Mawad & Monier-Faugere, 2007).

WHO advocates measurement of BMD to determine skeletal strength and defines osteoporosis as bone density 2.5 standard deviations (SD's) below peak spinal or hip bone mass mean for young white adult women. BMD measurement is used as a yardstick but has a low sensitivity; a normal BMD only means the risk of fracture is reduced and not that it will not occur (Kolb & Rosenbaum, 2007; Malkin, Karasik, Livshits & Kobylansky, 2002; Kanis, 2002). Even so, DEXA is considered the most accurate test available for bone density.

DEXA results are reported as T-scores and as Z-scores. Due to disparity between skeletal sites, the lowest BMD measurement is used (Hansen & Binkley, 2007). The T-score, applicable only to BMD of the lumbar spine, femur neck, total proximal femur, and mid radius, is reported as number of standard deviations (SD) below the average and compares bone density to the optimal peak bone density for a healthy person of the same gender. A T-score of less than minus-1 is considered normal. A T-score of minus-1 to minus-2.5 suggests osteopenia and a risk for developing osteoporosis. A T-score of less than minus-2.5 is diagnostic of osteoporosis. The risk of fracture doubles for each SD reduction (Marshall, Johnell, & Wedel, H. 1996).

The Z-score, not recommended in evaluation of the elderly, compares the result to others of the same age, weight, ethnicity, and gender. A Z-score of less than minus-1.5 suggests secondary factors, such as malnutrition, medication, thyroid abnormalities etc., as contributing to osteoporosis.

Treatment

Improved diet with calcium and vitamin D supplements and moderate exercise, quitting smoking, and curtailing alcohol consumption will help slow bone loss. Drugs will not restore bone mass but may decrease resorption. Commonly used drugs are listed in Table 2.

The Cochrane study (Gillespie, et al., 2003) provides general guidelines to be considered when developing fall prevention programs. Measures taken by institutions depend upon an individual resident's need. Possible measures include: adequate supervision, stationing a resident near the nurse's desk, keeping floors clean and cleared, supervised mobility and exercise, assistive devices, chair and bed alarms, wheel locks for beds, adjusted bed height, pressure mats, appropriate lighting, anti-slip stockings, hip protectors,

raised toilet seats, wall bars for the patient to grasp when raising or lowering self to toilet, medication review and avoidance of psychotropic medications when possible, and recognition and communication of changes in health status that predispose to falls.

Pharmacologic Therapy

The NOF recommends pharmacologic therapy for postmenopausal women but data on effectiveness in the elderly are inconclusive and bisphosphonates are not ordered due to poor absorption and difficulties in proper administration given staff limitations (Hansen & Binkley, 2007).

Key Studies

Study of Osteoporotic Fractures (SOF) (2010), looked at 16 years of data collected from over 9700 Caucasian and over 660 African-American women and identified risk factors for hip fractures. The study concluded that a lower BMD strongly correlated with undisplaced femoral neck fractures and stable intertrochanteric fractures (Cauley et al, 2009). (A study overview can be found at <http://sof.ucsf.edu/interface/Overview.asp>.) Simultaneously the Osteoporotic Fractures in Men (Mr. OS) study with over 6500 male participants from 6 major cities in the United States was conducted between 2000 and 2005. This study provided data about men with osteoporosis, most notably that select serotonin re-uptake inhibitors (SSRIs) were associated with a decrease in BMD (Cauley et al, 2010).

Vasikaran et al., (2010) reviewed 22 prospective studies between 2000 and 2010 to assess fracture risks, and treatment monitoring methods of bone turnover markers (BTM) to predict those most like to suffer osteoporotic fractures. While recognizing that there was no gold standard for bone turnover they support the role of BTMs in patient management and call for further analysis of trial data to develop an international standard of measurement to be adopted by laboratories. To better understand patient awareness, management practices, and the impact of the disease on an international level, GLOW (Global Longitudinal Study of Osteoporosis in Women), a 5 year practice-based observational study initiated in 2006 in 10 countries with over 69,000 female subjects older than 55 years, is being conducted to analyze risk factors, patient-physician interactions, diagnosis and treatment protocols, and health insurance coverage. Upon completion, the study will provide evidence-based information on cost effective management of fracture risks (Hooven et al., 2009.)

Medical-Legal Implications

The LNC reviewing a case must extrapolate applicable data from the medical record and literature to support conclusions related to case findings. Co-morbidity, medical history and drug use, history of falls and or fracture, nutrition, activity level, as well as patient's rights must all be considered.

Table 2: Osteoporosis Drug Therapies

DRUG CLASSIFICATION	DRUG NAME	SIDE EFFECTS
Nutritional supplements	Calcium Vitamin D Calcitriol Sodium fluoride	Hypercalcemia, hypercalciuria
Antiresorptive (Slows bone resorption)	Biphosphonate <ul style="list-style-type: none"> • Alendronate (Fosamax) • Etidronate (Didronel) • Ibandronate (Boniva) • Risedronate (Actonel) • Zoledronate (Reclast) 	Short term: Esophagitis, musculoskeletal pain, ocular inflammation, hypocalcemia Long-term: esophageal cancer, osteonecrosis of the jaw, femoral fracture, atrial afibrillation (Kennel & Drake, 2009)
	Hormone replacement therapy <ul style="list-style-type: none"> • Estrogen (Premarin, Estrace Estraderm etc.) • Tibolone (Livial) 	Short term use only due to increased risk of acute myocardial infarction and stroke Not recommended for elderly due to risk of stroke
	Pamidronate (Aredia) Select estrogen receptor modulators <ul style="list-style-type: none"> • Raloxifene (Evista) • Calcitonin (Calcimar, Miacalcin) RANKL inhibitor <ul style="list-style-type: none"> • Denosumab (Xgeva) 	Renal dysfunction, osteonecrosis of the jaw Hypocalcemia, osteonecrosis of the jaw (Amgen's Xgeva package insert, 2010)
	Strontium ranelate (Protelos)	Leg cramps, blood clots, seizure, memory loss
Anabolic – Stimulated new bone formation	Recumbinant human parathyroid hormone Teriparatide (Forteo)	Increased risk of osteosarcoma

Earlier osteoporosis research studies focused on the prevalence, cost, and pathophysiology while more recent studies are directed at risk factors and treatments to prevent fractures. There is an abundance of literature addressing hip fracture prevention, causes, and treatments. Literature also addresses ethical issues, such as medically-assisted nutrition and hydration in the seriously ill, due to a shift from “doctor knows best” to patient rights and patient self-determination. Medical and legal aspects of hip fractures related to bed rail and restraint use, drug therapies, and surgical procedures are published but research available on medical-legal aspects of hip fracture and or the role played by osteoporosis in causing the ambulatory patient’s fall is lacking.

The United States Constitution and the courts (Belchertown v. Saikewicz, 1977) have long recognized a patient’s right to refuse treatment but this right must be balanced with the potential harmful effects of their decision (Lane v. Candura, 1978). Dementia, psychotic thought disorder, anxiety, panic etc. can disrupt the ability to assess the risk and benefits of a treatment but are not definitive for incompetence. The President’s Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research determined that decision-making requires possession of values and goals and the ability to understand and to communicate information related to the

proposed action as well as to reason and deliberate about available choices (Kleinman, 1991). For more information on medical decision-making, the reader is referred to Legal Nurse Consulting Principles & Practices (volume 1) (3rd edition).

Fractures are related to skeletal load and bone strength and can occur with even the most aggressive intervention. Studies of fall prevention strategies implemented for high-risk nursing-home residents have been evaluated but evidence of effectiveness is inconclusive (Oliver, Killick, Even, & Willmott, 2007; Institute for Healthcare Improvement, n.d.). Kerse, Butler, Robinson, & Todd (2004) found that interventions to prevent falls can actually increase the risk of falls.

Osteoporotic hip fractures are significant given the attendant morbidity and mortality, for example, pneumonia, deep vein thrombosis, and pulmonary embolism resulting from prolonged bed rest following hip injury, but determining whether a fracture is due to trauma or fragile bone associated with osteoporosis can be difficult (Ray et al., 1997; Rosen, 2007).

The LNC should question the accuracy of a death certificate when reviewing a case of death following hip fracture. Many physicians receive no training in completing death certificates and major errors have been shown during audits (Myers & Farquar, (1998). A 1987 study

found 47% of diagnoses on death certificates differed from conclusions drawn upon autopsy (Modelmog, Rahlenbeck & Trichopoulos, 1992). Calder, Anderson, & Gregg (1996) examined death certificates and found hip fracture, due to secondary implications, that is, immobility, was listed as contributing significantly to the cause even through the primary cause was due to another medical problem. A comparison of discharge summaries to the cause of death was mismatched in 54% of the records reviewed (Hoff & Ratard, 2010).

Case Study: MJ, a 5'1" 100 pound, 85 year old Caucasian female with a history of dementia, stage III chronic obstructive pulmonary disease, diabetes, peripheral vascular disease, neuropathy, degenerative joint disease, congestive heart failure, osteoporosis, severe kyphosis, chronic back pain, falls and status-post left radial fracture two years prior was admitted to the Ponce deLeon Nursing Home Alzheimer's unit. Upon admission she was noted to be alert and oriented to person only, confused, forgetful, anxious, and agitated. Her medications included Albuterol via nebulizer, methylprednisolone, lorazepam, olanzapine, and APAP/codeine #3. Fall prevention strategies included Wandeguard, chair alarm, and supervision while walking. She was totally dependent for ADLs. Despite decreased strength and balance, she was able to walk with a slow steady gait using an assistive device.

On the fifth day following admission, MJ suffered an unwitnessed fall and could not recall how she fell. She complained of left hip pain and was sent to the local hospital for evaluation and admission. Radiology found she had a non-displaced fracture of the left femoral head and an orthopedic consult recommended conservative treatment. She was transferred back to the nursing home where she was confined to bed rest. One week later she was diagnosed with pneumonia and she died 21 days post injury. The death certificate indicated the cause of death was pneumonia with the fractured hip being a significant contributing factor. The family filed suit against the nursing home claiming negligence.

"Given the needs of the resident, were appropriate interventions enacted to prevent falls? What facts support/undermine your conclusion? What more information, if any, is needed?"

"Did the hip fracture result from a fall or did the fall occur as a result of osteoporosis? What information supports/undermines your conclusion? Does the preponderance of evidence weigh in your client's favor or against it? How will you support your opinion?"

Conclusion

With advancing age comes an increased likelihood of osteoporosis and falls, with falls being the leading cause of injury and death among the elderly. This silent disease that can lead to pain, incapacity, deformity, depression, fear,

and anxiety is often not diagnosed until a patient has fallen and suffered an injury. A number of questions need to be addressed by the LNC attempting to identify liability issues in a hip fracture case.

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The topic matter offered in "The Clinical Maxim" is not meant to provide medical or legal advice, only to acquaint the reader with an overview of clinical conditions and/or diseases as well as their clinical/legal implications. As with any medical-legal matter, the reader is admonished to consult the services of a medical and/or legal professional, respectively. The reader is also reminded to critically analyze and evaluate the sources offered here and confirm their reliability independently.

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Online References and Resources

Osteoporosis

By Kara DiCecco, MSN RN LNCC

To supplement the feature article on Osteoporosis, the following sites provide online resources for research, education, and support for osteoporosis. This list is not meant to be all inclusive of the potential resources available. This list is provided as a general reference source for the LNC and is not an endorsement of any listed sites or services. As with any online resource, the reader must confirm its authority, currency, and credibility independently.

GLOSSARY	DIAGNOSIS/TREATMENT RESOURCES (CONTINUED)
Spine Universe This glossary is from Harvinder Sandhu, MD, Associate Professor at Weil Medical College, New York. http://www.spineuniverse.com/conditions/osteoporosis/osteoporosis-glossary-terms	National Institute of Health, Osteoporosis, and Related Bone Diseases National Resource Center This site provides more than just osteoporosis information but there is a section specifically for that (see link below). Excellent publications, glossary, and FAQs section. http://www.niams.nih.gov/Health_Info/Bone/ http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/
Medicine.net This resource has slideshows and extensive glossary with internal links for further explanation. A similar resource is available through eMedicine. http://www.medicinenet.com/osteoporosis/glossary.htm	National Institute on Aging Another resource from the National Institutes of Health specific for aging related issues. http://www.nia.nih.gov/
Genetics Home Reference Interesting site with built in medical thesaurus and MESH search. http://ghr.nlm.nih.gov/glossary=osteoporosis	National Library of Medicine, National Institutes of Health Never disappointing, MedlinePlus has a newer look and lots of dynamic, reliable information. http://www.nlm.nih.gov/medlineplus/osteoporosis.html
IMAGING	PROFESSIONAL ASSOCIATIONS
The International Society for Clinical Densitometry This site provides articles and slideshows related to bone disease. http://www.iscd.org/Visitors/positions/OP-Index.cfm	National Osteoporosis Foundation Established in 1984, its sole focus is osteoporosis education, advocacy, and research. Limited information about its overall operation but well-established resource. http://www.nof.org/
Aunt Minnie Again an excellent site for all things X-ray. http://www.auntminnie.com/index.aspx?sec=def	American College of Rheumatology One of two frontrunner medical specialties that tie into the issue of osteoporosis and alternate causation. Endocrinology is the other. http://www.rheumatology.org/
DIAGNOSIS/TREATMENT RESOURCES	American Association of Clinical Endocrinologists This site has limited availability based on membership, but still able to search for topic specific information. http://www.aace.com
From Everyday Health A good layman's explanation of the pathophysiology of osteoporosis. http://www.everydayhealth.com/womens-health/osteoporosis/diagnosis-detecting-osteoporosis.aspx	GUIDELINES
Spine-Health Another good simple explanation (elaborates on T-scores) of osteoporosis. http://www.spine-health.com/conditions/osteoporosis/osteoporosis-diagnosis	American Association of Clinical Endocrinologists AACE Medical guidelines for the clinical practice for the prevention and treatment of postmenopausal osteoporosis (2003). http://www.aace.com/pub/pdf/guidelines/osteoporosis2001Revised.pdf
Mayo Clinic Reliable resource for medical information. Also provides an "Ask the Expert" section. http://www.mayoclinic.com/health/osteoporosis/DS00128	The International Society of Clinical Densitometry An extensive listing of the position statements and guidelines. http://www.iscd.org/Visitors/positions/OfficialPositionsText.cfm
Cleveland Clinic Excellent site with page worth exploring. Phenomenal resources and coverage. Click on related links for impressive list of informational resources. http://my.clevelandclinic.org/rheumatology_immunology/osteoporosis_center/default.aspx	SUPPORT GROUPS
This resource is impressive in the breadth of information provided. Good women's health resource. http://my.clevelandclinic.org/disorders/menopause/hic_menopause_and_osteoporosis.aspx	Arthritis Foundation From this homepage you can type in "osteoporosis" and get a wealth of easy to read information. http://www.arthritis.org/
This link is specific to the overview of osteoporosis. http://my.clevelandclinic.org/disorders/Osteoporosis/hic_Osteoporosis.aspx	

SUPPORT GROUPS (CONTINUED)

National Osteoporosis Foundation Support Community

Inspire is the name of the online support group.

<http://www.inspire.com/groups/national-osteoporosis-foundation/discussion/prevention-of-osteoporosis-an-affirmation-from-webmd/>

Men's Osteoporosis Support Group

Page maintained by Jerry Donnelly who focuses on providing newsletters, links, and updates to information about male osteoporosis.

<http://www.maleosteoporosis.org/base.asp?HID=464>

MDJunction

Online support group for a variety of diseases and conditions. Does subscribe to the HON Code (Health on the Net). Link provided is for videos and information related to osteoporosis.

<http://www.mdjunction.com/osteoporosis/videos>

International Osteoporosis Foundation

This website has link for medical professionals that provides extensive resources, such as policies and guidelines, articles, videos, publications and more. Does provide an international perspective.

<http://www.iofbonehealth.org/>

JOURNALS/NEWS

International Bone and Mineral Society (IBMS)

BoneKEy® - Site promotes "Published by the International Bone & Mineral Society, BoneKEy® is the only open access online knowledge environment in the bone field. As a dynamic repository of knowledge, it is also a source of original content, including News, Perspectives, Commentaries, Meeting Reports, and Not to Be Missed annotations, written by the top experts in the field. The site is a global network of 12,000 registered users who learn of each month's new content through regular monthly emails."

www.bonekey-ibms.org

Johns Hopkins News Alerts

Free registration for ongoing alerts for health-related topics. You have the ability to specify topics desired, such as osteoporosis.

http://www.johnshopkinshealthalerts.com/alerts_index/back_pain_osteoporosis/377-1.html

JOURNALS/NEWS (CONTINUED)

DocGuide (Article/News Resource)

Requires free registration that provides up-to-date articles on news related to various topics, including but not limited to osteoporosis.

<http://www.docguide.com/general-practice/popular/popularnew>

The International Society of Clinical Densitometry

Extension lists of free articles related to osteoporosis (adult and pediatric).

<http://www.iscd.org/Visitors/positions/OPReferences.cfm>

Includes 2005 White Paper on Precision Assessment and Radiation Safety for Dual-energy X-ray Absorptiometry (DXA).

<http://www.iscd.org/Visitors/pdfs/>

[RadiationSafetyWhitePaperrevisedWebPosting2005-06.pdf](http://www.iscd.org/Visitors/pdfs/RadiationSafetyWhitePaperrevisedWebPosting2005-06.pdf)

NON-ACADEMIC RESOURCES

Hologic, Inc.

Hologic (commercial site) is a leading developer, manufacturer, and supplier of premium diagnostic products, medical imaging systems, and surgical products dedicated to serving the healthcare needs of women throughout the world. Provides information specific to the topic of osteoporosis and women's health issues.

<http://www.hologic.com/en/osteoporosis-resources/>

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Practice of Registered Nursing: Are You Competent

By Eileen Watson, EdD MSN RN ANP and Holly Hillman, MSN RN

Due to rapidly changing medical and technological advancements in today's health care delivery systems, nurses need to possess higher competency levels of skills, knowledge, and abilities to render safe and quality patient care. To legally meet these needs, nurses need to know how one remains competent (continuing competency).

Licensure and certification are the current forms that measure professional competence. Upon entry into registered nursing practice, minimum competency is met by successful completion of an accredited nursing education program and passing of the national nursing licensure examination (NCLEX). Guided by the state nurse practice act minimum competency is regulated by the state boards of nursing and each state may have additional criteria for initial licensure. The National Council of State Boards of Nursing (NCSBN) Board of Directors evaluates the NCLEX passing standard score every three years. In April 2007, the passing standard was raised. "The NCSBN Board of Directors determined that safe and effective entry-level RN practice requires a greater level of knowledge, skills, and abilities than was required in 2004...The passing standard was increased in response to changes in U.S. health care delivery and nursing practice that have resulted in the greater acuity of clients seen by entry-level RNs" (NCSBN, 2006, Para 2).

Nursing literature has not identified one standard method for achieving and maintaining competency. Ongoing

continuing competency requirements vary by state and examples are shown in the Table.

Kelchner (2011) stated that the overall goal of continuing education is to ensure the registered nurse is current in the latest techniques and nursing care practices. Nursing continuing education requirements by state are available at <http://ce.nurse.com/RStateReqmnt.aspx>

National certification and recertification in one's nursing specialty is becoming a common employment requirement for registered nurse clinical nursing practice (American Association of Critical-care Nurses, 2003) and in most states for advance practice nursing. The American Association of Colleges of Nursing (AACN) identified that "the certification of Advanced Practice Nurses by professional specialty nursing organizations incorporates professional assessment of necessary skills and measurement of a licensed Registered Nurse's competence with regard to established criteria... Advanced Practice Nurses certified by the American Nurses Credentialing Center must have a master's degree and demonstrate successful completion of an 8-hour written examination composed of in-depth questions prepared by and reviewed by practitioners. For certain specialties, Advanced Practice Nurses also must show evidence of specified clinical practice experience. Once granted, certification is effective for 5 years, whereupon the individual must apply for recertification based on either a retest or demonstration

Table: Examples of State Continuing Education (CE) Requirements for RN License Renewal

Arizona —no continuing education required.
California —30 contact hours of continuing education courses through board approved providers—renew every two years.
Florida —24 contact hours of continuing education courses through board approved providers—renew every two years. Must include two hours on prevention of medical errors; one-time, one hour continuing education on HIV/AIDS before the first licensure renewal; and 2 continuing education hours every third license renewal on domestic violence.
North Carolina —Renewal every 2 years. Completion of one of the following: <ul style="list-style-type: none">• National certification or recertification by a national credentialing association• 30 contact hours of continuing education• Completion of a board approved refresher course• Completion of a minimum of 2 semester hours of post-licensure academic education related to nursing practice• 15 contact hours of continued education and completion of a nursing project as principal investigator or as co-investigator• 15 contact hours of continued education and authoring or co-authoring a nursing related article, paper, book or book chapter• 15 contact hours of continued education and developing and conducting a nursing continuing education presentation or presentations totaling a minimum of 5 contact hours• 15 contact hours of continued education and 640 hours of active practice within previous 2 years

(Merion Matters, 2011)

of continuing education credits” (AACN, 1998, para 7). The next step for APRNs is a Doctorate in Nursing Practice (DNP) by 2015. All health care professions require a license for entry into practice but utilize professional certification as a basis for specialization (AACN, 1998, para 8).

The American Nurses Association (ANA) Code of Ethics for Nurses with Interpretive Statements (2001) identified in Provision 5, the need for nurses to remain competent. Hook and White (2009) expanded this competency statement to mean nurses are responsible and accountable for assessing and improving their own competencies. Whittaker, Carson, & Smolenski (2000) identified that in 1998, the Joint Commission of Accreditation of Healthcare Organizations (JCAHO) now called the Joint Commission, mandated that hospitals assess the competency of its new employees and continue competency assessments on a regular bases.

Protection of the public from incompetent practitioners is a goal for professional nursing practice. Each nurse needs to be aware of his or her state regulatory requirements and professional organization requirements for licensure and certification that is, continuing education and recertification requirements, as laws vary from state to state. Continuing competency levels (skills, knowledge and abilities) have been identified in the nursing literature, by state and federal regulatory boards, and professional organizations as necessities for nurses to render safe and quality patient care. The question to ask—will competency assessments be allowed in malpractice litigation?

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Serious Reportable Events (SREs) and Hospital Acquired Conditions (HACs)

By Judith M. Bulau, MSN RN

Q: Are all SREs and HACs preventable?

A: Some SREs and HACs may not be preventable depending on patient contributing factors and/or the type of procedures performed in which complications occur even with best practices of evidence-based care.

Mandatory public reporting of healthcare performance aims to improve patient safety by increasing transparency and accountability in healthcare. To accomplish this, the National Quality Forum (NQF) led efforts to create a mandatory reporting system for healthcare facilities to publicly report their healthcare performance as an incentive to improve patient safety.

The NQF (2006) published a list of SREs in 2002, with revision in 2006, to promote the development of a national state-based public reporting system. There are now 28 events categorized as surgical, product or device, patient protection, care management, environment, and criminal events.

SREs are defined as preventable, serious, and unambiguous adverse events that should never occur. The criteria for classifying SREs require that an event must be preventable, serious, unambiguous, and any of the following:

- Adverse
- Indicative of a problem in a healthcare facility's safety systems
- Important for public credibility or public accountability

In 2008, the Centers for Medicare and Medicaid (2010) also provided an incentive for healthcare facilities to improve patient safety by denying payment for care provided to treat HACs. It published a list of HACs that meets the following criteria:

- High cost or high volume or both
- Result in the assignment of a case to a diagnostic related group (DRG) that has a higher payment when present as a secondary diagnosis (i.e., identified as complications through billing data)
- Could reasonably have been prevented through use of evidence-based guidelines

In response, healthcare facilities protested that certain "never events" (i.e., SREs and HACs) were unavoidable even with best practices of evidenced-based care. They pointed to external factors, such as, a patient's complex medical condition and the risk of certain diagnostic and treatment

procedures that may be beyond a provider's control. Fry and colleagues (2010) analyzed 887,189 surgical cases from 1,368 hospitals to determine whether the Centers for Medicare and Medicaid "never events" occurring after major surgery was affected by patient and disease characteristics and/or the type of surgery performed. They indicated that the use of the term "never event" and denial of payment for all such events implied that these complications result from preventable medical errors. They found that some "never events" may not be entirely preventable because:

- Patient characteristics and type of surgical procedure are important predictors of complications of surgical care evaluated in this study, undermining the rationale for their current classification as "never events"
- Patient and disease characteristics such as age, malnutrition, weight loss, chronic kidney failure, and pre-existing conditions significantly increased the risk of "never event" complications
- Patients had an increased risk of complications if their medical condition was poor before they had surgical procedures done, and
- Rates of complications varied depending on the type of surgical procedure performed

Understanding the difference between SRE and HAC negligence claims may be helpful in thoroughly evaluating such claims. SREs are usually classified as obvious medical errors that may not occur very often but cause preventable harm due to failure in complying with the standard of care and organizational policies and procedures (e.g., surgery performed on the wrong body part and death/disability associated with medication error). Such obvious medical errors may be more difficult to defend because of alleged substandard care and failure to follow patient safety processes.

HACs are categorized as obvious medical errors such as retained foreign objects and burns. However, they also include catheter-associated urinary tract, vascular or surgical site infections in which complications occur that may not be

completely preventable even with best practices of evidence-based care. HACs that do not include obvious medical errors may be easier to defend because it may be possible to show how patient contributing factors and/or the type of procedures performed caused complications that could not be prevented even with best practices of evidenced-based care.

Analyzing SRE and HAC negligence claims to determine whether they occurred as a result of frank error or patient characteristics, and/or because of the type of procedures performed in which complications occur even with best practices of evidence-based care, may help to successfully defend these negligence claims.

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