

Guideline for Patient Information Management  
Evidence Table

REFERENCE NUMBER	CITATION	CONCLUSION(S)	CONSENSUS SCORE	EVIDENCE TYPE	POPULATION	INTERVENTIONS	COMPARISON	SAMPLE SIZE	OUTCOME MEASURE
1	Chow M, Beene M, O'Brien A, et al. A nursing information model process for interoperability. J Am Med Inform Assoc. 2015;22(3):608-614.	Development of a common information model can be applied to nurse sensitive measures to enable data standardization supporting patient transitions between care setting, quality reporting and research.	VB	Case report		Harmonization of data elements for hospital-acquired pressure ulcer	N/A	N/A	N/A
2	Gugerty B, Maranda MJ, Beachley M, et al. Challenges and Opportunities in Documentation of the Nursing Care of Patients. Baltimore, MD: Maryland Nursing Workforce Commission, Documentation Work Group; 2007.	Of significant concern to this sample of nurses were: <ul style="list-style-type: none"> <li>• Redundant documentation,</li> <li>• Excessive time spent documenting, time that takes away from needed direct patient care,</li> <li>• More than 1/3 of the nurses routinely stayed beyond their scheduled work hours to complete documentation and almost 2/3 of these were paid for the "stay over period,"</li> <li>• Routinely documenting for reasons other than recording and communicating pertinent clinical information.</li> </ul>	IIIB	Survey	Members of the Maryland Nurses Association	N/A	N/A	933	N/A
3	Standards of perioperative nursing. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc, 2015:693-708.	Perioperative nursing practice standards	IVA	Professional Practice Standards					
4	ANA Principles for Documentation. Silver Spring, MD: American Nurses Association; 2010.	National nursing documentation guidelines.	IVA	Professional Guideline	N/A	N/A	N/A	N/A	N/A
5	Nursing: Scope and Standards of Practice. Silver Spring, MD: American Nurses Association; 2010.	Professional nursing practice standards	IVA	Professional standards	N/A	N/A	N/A	N/A	N/A
6	Peterson AM. Medical record as a legal document part 2: meeting the standards. J Legal Nurse Consult. 2013;24(1):4-10.	Healthcare providers are held responsible and accountable for maintaining medical records as required by federal and state regulations and professional standards. Failure to adhere to documentation standards can place the patient at-risk for harm and the responsible provider at-risk for allegations of negligence.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
7	Nursing's Social Policy Statement: The Essence of the Profession. Silver Spring, MD: American Nurses Association; 2010.	Professional position statement	IVA	Opinion	N/A	N/A	N/A	N/A	N/A
8	Beyea SC. Describing professional nursing through a universal record in perioperative settings. Int J Nurs Terminol Classif. 2003;14(S4):23.	The professional aspects of intraoperative nursing care are embedded in the care delivered and not accurately or fully represented in clinical documentation. The use of standardized vocabularies in a nursing record fully represents and describes professional nursing practice.	IIIB	Retrospective analysis	For-profit, nonprofit, and government facilities in the U.S.	N/A	Perioperative paper and computerized records	> 150	
9	Petersen C, ed. Perioperative Nursing Data Set. 3rd ed. Denver, CO: AORN; 2011.		IVA	Clinical practice guideline	N/A	N/A	N/A	N/A	N/A
10	Kuc JA, Iyer PW, Levin BL, Shea MA. Perioperative records. In: Iyer PW, Levin BL, Shea MA, eds. Medical Legal Aspects of Medical Records. Tucson, AZ: Lawyers & Judges Publishing Company; 2006:657-677.	Medical Legal Aspects of U.S. perioperative documentation requirements	IVA	Synthesis of medical legal standards	N/A	N/A	N/A	N/A	N/A
11	Junttila K, Hupli M, Salanterä S. The use of nursing diagnoses in perioperative documentation. Int J Nurs Terminol Classif. 2010;21(2):57-68.	Findings revealed the importance of safety-related routines in National perioperative care. Nursing diagnoses in the Finnish version of PNDS are sensitive in describing the rationales for National perioperative care.	IIIB	Qualitative	Convenience sample of surgical patients with procedures lasting 45 minutes from one hospital			250	

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12	Guido GW. Legal & Ethical Issues in Nursing. 5th ed. Boston, MA: Pearson; 2010.	Nursing practice ethical and legal considerations supported by legal concepts and claims-based summaries.	VA	Expert opinion; nursing case law	N/A	N/A	N/A	N/A	N/A
13	Exhibit B: Perioperative explications for the ANA Code of Ethics for Nurses. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2015:711-732.		IVB	Practice Guideline	N/A	N/A	N/A	N/A	N/A
14	Staggers N, Clark L, Blaz JW, Kapsandoy S. Why patient summaries in electronic health records do not provide the cognitive support necessary for nurses' handoffs on medical and surgical units: insights from interviews and observations. Health Informatics J. 2011;17(3):209-223.	Computerized patient summary reports and EHR were minimally used during handoff and existing summary reports did not provide adequate cognitive support for nurses.	IIIB	Qualitative, interpretive descriptive study	Purpose sample of nurses working medical and surgical units in an academic medical center or oncology speciality hospital.			37	
15	Urquhart C, Currell R, Grant MJ, Hardiker NR. Nursing record systems: effects on nursing practice and healthcare outcomes. Cochrane Database Syst Rev. 2009;(1):CD002099.	There is limited evidence of effects on practice attributable to changes in record systems. Merely automating existing paper record systems is not the answer and that the means to develop systems that accurately captured nursing practice lay in first acquiring a deep understanding of the complexities of the art and science of nursing itself. nurses and other healthcare professionals believe that there should be a link between nurse record keeping and the quality of care that patients receive.	IA	Cochran systematic review with meta-synthesis					
16	Wang N, Hailey D, Yu P. Quality of nursing documentation and approaches to its evaluation: a mixed- method systematic review. J Adv Nurs. 2011;67(9):1858- 1875.	The accuracy of documentation content in relation to patients' actual conditions and the care given is an important process feature of documentation quality. If there is no assurance of nursing documentation holding valid and reliable data, there would be no value to discuss its quality. The concordance between documentation content and patient assessment or interviews with nurses and patients can reflect the accuracy of data.	IIA	Systematic literature review					
17	Keenan G, Yakel E, Dunn Lopez K, Tschannen D, Ford YB. Challenges to nurses' efforts of retrieving, documenting, and communicating patient care information. J Am Med Inform Assoc. 2013;20(2):245-251.	The care information flow vulnerabilities area catalyst for multiple types of serious and undetectable clinical errors. Two major recommendations to address the gaps: (1) to standardize the format, content, and words used to document core information, such as the plan of care, and make this easily accessible to all team members; (2) to conduct extensive usability testing to ensure that tools in the electronic health record help the disconnected interdisciplinary team members to maintain a shared understanding of the patient's plan.	IIIA	Ethnographic observing and content analysis	Convenience sampling of nurses working on one of 8 diverse hospital units in a university teaching hospital, two large community hospital systems, or a small community hospital.			20 nurses stratified by years of experience.	
18	Micek WT, Berry L, Gilski D, Kallenbach A, Link D, Scharer K. Patient outcomes: the link between nursing diagnoses and interventions. J Nurs Adm. 1996;26(11):29-35.	The use of standardized language to describe nursing diagnosis, outcomes, and nursing interventions is an important to advancing the nursing profession. Nursing has an obligation to contribute to nursing health care knowledge for the benefit of population health.	VA	Organizational experience					

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19	Monarch K. Documentation, part 1: principles for self-protection. Preserve the medical record—and defend yourself. Am J Nurs. 2007;107(7):58-60.	Article discusses principles that inform all good methods of charting and examines an actual court case to illustrate how adequate documentation can protect nurses against allegations of negligence and malpractice. Also discussed are the importance of preserving the medical record and mistakes commonly made in charting that leave nurses vulnerable to lawsuits.	VB	legal summary	N/A	N/A	N/A	N/A	N/A
20	42 CFR §416.47. Condition of participation: medical records. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-47">https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-47</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
21	42 CFR §482. Conditions of participation for hospitals. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-part482/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-part482/content-detail.html</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
22	42 USC § 18001. Patient Protection and Affordable Care Act. January 7, 2011. <a href="https://www.gpo.gov/fdsys/granule/USCODE-2010-title42/USCODE-2010-title42-chap157-subchapl-sec18001">https://www.gpo.gov/fdsys/granule/USCODE-2010-title42/USCODE-2010-title42-chap157-subchapl-sec18001</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
23	Guideline for medication safety. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:289-332.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
24	Barney L, Jackson JJ, Ollapally VM, Savarise MT, Senkowski CK. Documentation of services provided in the postoperative global period. Bull Am Coll Surg. 2013;98(5):48-51.	Accurate coding of clinical data capture is the responsibility of the provider and necessary for accurate billing and valuation of care.	IVB	Position statement	N/A	N/A	N/A	N/A	N/A
25	Ammenwerth E, Rauegger F, Ehlers F, Hirsch B, Schaubmayr C. Effect of a nursing information system on the quality of information processing in nursing: an evaluation study using the HIS-monitor instrument. Int J Med Inf. 2011;80(1):25-38.	The quality of the information processing in nursing strongly increased after the introduction of a nursing information system.	IIA	41 item pre-post information system introduction survey.	Nurses using computer-based nursing information system	Implementation of nursing information system	Before and after introduction of system	94	Survey results
26	Whittenburg L. Workfl viewpoints: analysis of nursing workflow documentation in the electronic health record. J Healthc Inf Manag. 2010;24(3):71-75.	The understanding of the workflow models within health information disciplines may improve the model of nursing workflow underlying the implementation of electronic health record systems.	VB	Expert opinion					
27	Lee S, McElmurry B. Capturing nursing care work- flow disruptions: comparison between nursing and physi- cian workflows. Comput Inform Nurs. 2010;28(3):151-599.	Unless the use of clinical information systems provides effective workflow of nursing care, it will result in confusion in nursing practice as well as poor quality of patient care. It is essential to capture disruptions and/or effectiveness in nursing care workflow from the perspective of nurses.	IIIB	systematic literature review; meta-synthesis					
28	Better EHR: Usability, Workflow and Cognitive Support in Electronic Health Records. Houston, TX: National Center for Cognitive Informatics & Decision Making; 2014.	Usability, workflow, and cognitive support problems are barriers to EHR meaningful use. Although many of these problems have been addressed by the EHR community, many others remain and prevent optimal use of EHRs by physicians.	IVA	Expert consensus clinical practice guidelines (adopted by US government)	N/A	N/A	N/A	N/A	N/A

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29	Colligan L, Potts HW, Finn CT, Sinkin RA. Cognitive workload changes for nurses transitioning from a legacy system with paper documentation to a commercial electronic health record. <i>Int J Med Inf.</i> 2015;84(7):469-476.	Substantial increase in cognitive workload for nurses during the early phases (1-5 shifts) of EHR transitions. "One-size-fits-all" training may not be suitable and longer periods of technical support may be necessary.	IIA	Quasi-experimental (time series, one group)	Pediatric nurses in two ward settings.	NASA-TLX tool	Serial cognitive workload assessments; before and at multiple intervals of new system implementation.	74	Cognitive workload change
30	Institute of Medicine; Page A, eds. <i>Keeping Patients Safe: Transforming the Work Environment of Nurses.</i> Washington, DC: National Academies Press; 2004.	Changing the environment of healthcare and nursing workforce care delivery to improve patient safety and care.	IVA	Expert panel guidelines with synthesis of literature	N/A	N/A	N/A	N/A	N/A
31	Hayrinen K, Lammintakanen J, Saranto K. Evaluation of electronic nursing documentation—nursing process model and standardized terminologies as keys to visible and transparent nursing. <i>Int J Med Inform.</i> 2010;79(8):554-564.	The national model for electronic nursing documentation is suitable for the documentation of patient care in nursing care plans. However, health care professionals need further training in documenting patient care according to the nursing process, and in using the terminology in order to increase patient safety and improve documentation.	IIIB	Retrospective, descriptive study	EHR data extracted from a nursing process module of neurosurgical and nursing wards in one Finish hospital			41 neurological care plans; 177 surgical ward care plans	
32	Keohane CA, Bane AD, Featherstone E, et al. Quantifying nursing workflow in medication administration. <i>J Nurs Adm.</i> 2008;38(1):19-26.		IIIB	Qualitative; time-motion observation instrument	Nurses from 23 medical surgical units, one hospital			108	
33	Capuano T, Bokovoy J, Halkins D, Hitchings K. Work flow analysis: eliminating non-value-added work. <i>J Nurs Adm.</i> 2004;34(5):246-256.	Significant changes noted in over-all distribution of observed activities reflect the important adjustments made in both job descriptions and the environment to eliminate key drivers of unnecessary work in the delivery of patient care.	IIIA	Work flow analysis using quantitative and qualitative methods	Nurses and support staff working at a 30 bed hospital. Observations of 10 APN (12 days, all shifts)		Baseline (1999) and follow-up (2002) work flow studies	7,488	Change in overall distribution observed activities for nurses and support staff
34	Roberson D, Connell M, Dillis S, et al. Cognitive complexity of the medical record is a risk factor for major adverse events. <i>Permanente J.</i> 2014;18(1):4-8.	Cognitive complexity of the medical records (CCMR) correlates with physician assessment of complexity and risk of adverse events and an increase in CCMR increases physician cognitive overload.	IB	Cognitive Complexity assessment tool - case controlled retrospective chart review.	Patients with major adverse events between 2005-2006; one large academic pediatric hospital.		24 hr and lifetime CCRM vs major adverse events	39	Score analysis - Wilcoxin rank sum test, Fisher exact test, c statistic

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35	Ahmed A, Chandra S, Herasevich V, Gajic O, Pickering BW. The effect of two different electronic health record user interfaces on intensive care provider task load, errors of cognition, and performance. Crit Care Med. 2011;39(7):1626-1634.	Results suggest the configuration of the ICU user [EHR] interface contributes significantly to the task load, time to task completion, and number of errors of cognition associated with the identification and subsequent use of realted patient data.	IB	Unblinded crossover study	Attending, resident and fellow critical care physicians working in an academic tertiary referral center.			160 patient-provider encounters.	NASA-task load index and time-to-task completion errors of cognition measured by standardized questionnaire.
36	Potter P, Boxerman S, Dunagan C, et al. An analysis of nurses' cognitive work: a new perspective for understanding medical errors. Adv Patient Saf. 2005;1:39-51.	Findings reinforce previous research in regard to the high frequency of interruptions in the acute care environment. Omissions in care were relatively few. Omissions occurred at various times with respect to a nurse's cognitive stacking measure.	IIA	Cognitive pathway analysis using human factors techniques and qualitative observation.	Data previously collected on nurses participating in a larger study, working on a general acute medicine unit and neuromedicine unit; one hospital.			3 RNs	
37	Karsh BT, Holden RJ, Alper SJ, Or CK. A human factors engineering paradigm for patient safety: designing to support the performance of the healthcare professional. Qual Saf Health Care. 2006;15(Suppl 1):i59-i65	The human factors engineering paradigm for patient safety is an alternative but complementary paradigm to the error reduction, injury reduction, and evidence based medicine focused paradigms. The paradigm focuses on designing for Health Care Providers performance and hazard reduction so outcomes such as error and injury reduction or quality improvement can be achieved.	VB	Opinion paper: Human factors engineering HCP safety redesign					
38	Benner P, Sheets V, Uris P, Malloch K, Schwed K, Jamison D. Individual, practice, and system causes of errors in nursing: a taxonomy. J Nurs Adm. 2002;32(10):509-523.	A nursing taxonomy of errors was developed based on the identification of categories central to the nurse's role and function in healthcare delivery errors. 21 case studies of nursing errors from 9 State Boards of Nursing files were analyzed to develop the taxonomy.	IIIB	Retrospective case review.					
39	Hendrich A, Chow M, Skierczynski BA, Lu Z. A 36-hospital time and motion study: how do medical-surgical nurses spend their time? Permanente J. 2008;12(3):25-34.	Three main targets for improving the efficiency of nursing care are needed: documentation, medication administration, and care coordination. Changes in technology, work processes, and unit organization and design may allow for substantial improvements in the use of nurses' time and the safe delivery of care.	IIIA	Time motion study, observational	Direct care medical-surgical unit nurses; 274 hospitals in 15 states			1420 nurses	
40	Ash JS, Berg M, Coiera E. Some unintended consequences of information technology in health care: the nature of patient care information system-related errors. J Am Med Inform Assoc. 2004;11(2):104-112	Patient care information system (PCIS) errors fall into two main categories: those in the process of entering and retrieving information, and those in the communication and coordination process that the PCIS is supposed to support.	IIIA	Meta-Synthesis of evidence					
41	Bloomrosen M, Starren J, Lorenzi NM, Ash JS, Patel VL, Shortliffe EH. Anticipating and addressing the unintended consequences of health IT and policy: a report from the AMIA 2009 Health Policy Meeting. J Am Med Inform Assoc. 2011;18(1):82-90.	AMIA 2009 Health IT and Policy conference's recommendations: (1) an enhanced research agenda to guide study into the causes, manifestations, and mitigation of unintended consequences resulting from HIT implementations; (2) creation of a framework to promote sharing of HIT implementation experiences and the development of best practices that minimize unintended consequences; and (3) recognition of the key role of the Federal Government in providing leadership and oversight in analyzing the effects of HIT-related implementations and policies.	IVB	Expert opinion, synthesis of evidence	N/A	N/A	N/A	N/A	N/A

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42	Harrison MI, Koppel R, Bar-Lev S. Unintended consequences of information technologies in health care—an interactive sociotechnical analysis. J Am Med Inform Assoc. 2007;14(5):542-549.	Based on Interactive Sociotechnical Analysis, five types of sociotechnical interactions affect Health Information Technology (HIT) resulting in errors supported by published research: changes in existing social system (e.g., workflow), technical & physical infrastructures mediate HIT misuse, social system mediates HIT misuse (e.g., cognitive overload, misplacement entry of data), change in social system (i.e. power structure).	VA	Expert opinion; sociotechnical analysis of evidence	N/A	N/A	N/A	N/A	N/A
43	Cornell P, Herrin-Griffith D, Keim C, et al. Transforming nursing workflow, part 1: the chaotic nature of nurse activities. J Nurs Adm. 2010;40(9):366-373.	There is little "flow" in nurse workflow. The chaotic pace implies that nurses rarely complete an activity before switching to another. The opportunity to use critical thinking and engage in planning care is severely limited under these circumstances.	IIIB	Quantitative, observational					
44	Cornell P, Riordan M, Herrin-Griffith D. Transforming nursing workflow, part 2: the impact of technology on nurse activities. J Nurs Adm. 2010;40(10):432-439.	Higher demand activities require concentration, focus, and control over interruptions. Data indicated this is unlikely to happen currently in hospital medical-surgical units. Through a combination of lean design, new technology, and role redefinition, activities can be altered or reallocated and nurses could obtain the time and control necessary to perform in a new role.	IIB	Time-motion pre-post study; ANOVA; (no control identified)	Nurses on 3 medical-surgical units; 2 acute care hospitals.	Electronic medication documentation software	Pre vs. post implementation of software.	Hosp A: 22 nurses preimplementation, 54 post; Hosp B: 27 nurses pre-, 22 post	71 item instrument
45	Irwin RS, Richardson ND. Patient-focused care: using the right tools. Chest. 2006;130(1 Suppl):73S-82S.	Patient-focused care: communication, continuity of care, and concordance (finding common ground) are highly relevant to the effective treatment of pulmonary disease and should be a key component of asthma management.	VA	Literature review	N/A	N/A	N/A	N/A	N/A
46	Allan J, Englebright J. Patient-centered documentation: an effective and efficient use of clinical information systems. J Nurs Adm. 2000;30(2):90-95.	A redesigned clinical documentation system providing data for monitoring care processes, patient outcomes, and staff performance improved clinical data collection and reporting to measure patient care needs, staff compliance with care standards, and patient outcomes.	VB	Organizational experience; quality improvement project					
47	Nailon RE. The assessment and documentation of language and communication needs in healthcare systems: current practices and future directions for coordinating safe, patient-centered care. Nurs Outlook. 2007;55(6):311-317.	Processes related to assessing language and communication needs, and integrating this information into the coordination and provision of care, lack standardization within and across healthcare settings and expose limitations in the ability of healthcare systems to adequately provide safe, linguistically appropriate, patient-centered care.	VA	Literature review, nonsystematic	N/A	N/A	N/A	N/A	N/A
48	Institute of Medicine. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: National Academies Press; 2001.	The report addresses quality-related issues more broadly, providing a strategic direction for redesigning the health care delivery system of the 21st century. Fundamental reform of health care is needed to ensure that all Americans receive care that is safe, effective, patient centered, timely, efficient, and equitable.	IVA	Systematic literature review; meta-analysis					
49	Spooner SA; Council on Clinical Information Technology American Academy of Pediatrics. Special requirements of electronic health record systems in pediatrics. Pediatrics. 2007;119(3):631-637.	EHR need to incorporate the appropriate functionality to accommodate patients of all ages recognizing the unique needs to the population served.	IVB	Practice Guidelines Consensus	N/A	N/A	N/A	N/A	N/A
50	Park EJ, McDaniel A, Jung MS. Computerized tailoring of health information. Comput Inform Nurs. 2009;27(1):34-43.	Computer technology has expanded the capacity to tailor health information to effectively meet individual healthcare needs. Healthcare professionals need to understand how available computer technologies can assist their practice.	VA	Literature review	N/A	N/A	N/A	N/A	N/A

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51	Payne TH, tenBroek AE, Fletcher GS, Labuguen MC. Transition from paper to electronic inpatient physician notes. J Am Med Inform Assoc. 2010;17(1):108-111.	Despite numerous advantages, there are barriers that delay transition from paper to electronic notes. Chief among these is the time required to enter notes. Disadvantages to electronic notes are concerns they are more difficult to read and understand than handwritten notes and inappropriate copying and pasting.	VC	Case report; Facility experience, QI	N/A	N/A	N/A	N/A	N/A
52	Korst LM, Eusebio-Angeja AC, Chamorro T, Aydin CE, Gregory KD. Nursing documentation time during implementation of an electronic medical record. J Nurs Adm. 2003;33(1):24-30.	Despite charting concurrently on both paper and computer, the amount of time spent on documentation was not excessive, and was consistent with previous studies in which neither electronic or "double charting" occurred.	IIIB	Non-experimental: work-sampling/time-motion study	Obstetrical nurses		Paper vs electronic documentation	9 day shift nurse; 8 night shift nurses (n=15)	% time spent documenting
53	Flemming D, Hübner U. How to improve change of shift handovers and collaborative grounding and what role does the electronic patient record system play? Results of a systematic literature review. Int J Med Inf. 2013;82(7):580-592.	Electronic patient record systems are powerful providers of information but their actual use might threaten achieving common understanding of the patient if they force clinicians to work asynchronously. Deficiencies identified in the study addressed communication errors, omission of detailed information including anticipatory guidance during handovers.	IIIA	Systematic Literature Review with Meta-synthesis					
54	Andreia Neves da Mota L, Soares Pereira FM, Ferreira de Sousa PA. Nursing information systems: exploration of information shared with physicians. Refencia. 2014;4(1):83-89.	Data collection strategies produced valid data to identify the most relevant information categories for physicians.	IIIB	Qualitative; observation/ interviews	Physicians on surgical ward				
55	Jefferies D, Johnson M, Nicholls D. Comparing written and oral approaches to clinical reporting in nursing. Contemp Nurse. 2012;42(1):129-138.	Clinical handover produced a comprehensive picture of the patient's condition and care whereas nursing documentation tended to present a series of descriptions of tasks performed by nurses. There is a need to investigate new systems of communication promoting congruence between clinical handover and nursing documentation to ensure that all patient information can be accessed by all interested parties.	IIIA	Qualitative. Observation and secondary data analysis; content and textual analysis.	Nursing documentation from a 24 hr period		Oral vs documented nursing care	20 randomly selected examples of documentation.	Type and quality of content
56	Ammenwerth E, Eichstadter R, Haux R, Pohl U, Rebel S, Ziegler S. A randomized evaluation of a computer-based nursing documentation system. Methods Inf Med. 2001;40(2):61-68	Time required for nursing documentation varies by the quality of the documentation system. New application systems should be thoroughly assessed to evaluate their effects on structure, process and outcome of the quality of care.	IA	Randomized controlled trial of electronic documentation systems (mixed methods)	Ward nurses documenting patient care	Electronic documentation system	Paper vs. electronic documentation systems	Nurses working with 60 patients	Time to document, quality, and quantity of documentation.
57	Harrington L. Electronic health record workflow why more work than IACN Adv Crit Care. 2015;26(1):5-9.	Identifying EHR issues and streamlining workflows are essential to realizing the desired benefits of EHRs.	VC	Expert opinion	N/A	N/A	N/A	N/A	N/A
58	Asaro PV, Boxerman SB. Effects of computerized provider order entry and nursing documentation on workflow. Acad Emerg Med. 2008;15(10):908-915.	The net effects of an implementation on provider workflow depend not only on changes in tasks directly related to the provider-computer interface, but also on changes in underlying patient care processes and information flows.	IIB	Pre-post time motion observational study.	ED physician/nurse teams	CPOE implementation	Order writing - paper vs. CPOE	21 MD observations	
59	Ay F, Polat . The belief and opinions of nurses on the electronic patient record system. Int J Caring Sci. 2014;7(1):258-268.	Nurses have mixed responses on the usefulness and appropriateness of recording professional interventions in the EHR and recommend changes for improvement.	IIIB	Qualitative; survey	Nurses working in the Istanbul School of Medicine			1100	

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60	Mahler C, Ammenwerth E, Wagner A, et al. Effects of a computer-based nursing documentation system on the quality of nursing documentation. J Med Syst. 2007;31(4):274-282.	Results show a significant improvement of documentation and quality following implementation of electronic nursing documentation software. Positive aspects include completeness of documentation on the nursing process, formal aspects and subjective quality improvement by the nurses. Negative aspects were mainly associated with the contents of the care plans.	IIA	Prospective intervention study (3 time measurements)	Documentation from 4 hospital wards (psych x2, peds, dermatology) of University Med Center.	PIK software implementation.	Documentation quality	240 documents	Scored quality of data capture
61	Stead WW, Lin HS, eds. Computational Technology for Effective Health Care: Immediate Steps and Strategic Directions. Washington, DC: National Academies Press; 2009.	Healthcare organization recommendations: Organize incentives, roles, workflow, processes, and supporting infrastructure to encourage, support, and respond to opportunities for clinical performance gains. Develop the necessary data infrastructure for health care improvement by aggregating data regarding people, processes, and outcomes from all sources.	IVA	IOM report of 2-phase study on HIT problems faced by health care systems in realizing the emerging vision of patient-centered, evidence-based, efficient health care using electronic health records and other IT.	N/A	N/A	N/A	N/A	N/A
62	Poissant L, Pereira J, Tamblyn R, Kawasumi Y. The impact of electronic health records on time efficiency of physicians and nurses: a systematic review. J Am Med Inform Assoc. 2005;12(5):505-516.	Time efficiency is one of many benefits targeted by EHR implementers, but, conversely, time inefficiency is also recognized as a major barrier to successful EHR implementation.	IIA	Systematic review					
63	Amarasingham R, Plantinga L, Diener-West M, Gas-kin DJ, Powe NR. Clinical information technologies and inpatient outcomes: a multiple hospital study. Arch Intern Med. 2009;169(2):108-114.	Hospitals with automated notes and records, order entry, and clinical decision support had fewer complications, lower mortality rates, and lower costs.	IIB	Randomized cross-section study	Patient records from general acute-care hospitals			41 hospitals; 167,233 patients	Clinical Information Technology Assessment Tool (CITAT)
64	Shojania KG, Jennings A, Mayhew A, Ramsay CR, Eccles MP, Grimshaw J. The effects of on-screen, point of care computer reminders on processes and outcomes of care. Cochrane Database Syst Rev. 2009;(3):CD001096.	Point of care computer reminders generally achieve small to modest improvements in provider behaviour. A minority of interventions showed larger effects, but no specific reminder or contextual features were significantly associated with effect magnitude. Further research must identify design features and contextual factors consistently associated with larger improvements in provider behaviour if computer reminders are to succeed on more than a trial and error basis.	IA	Cochrane systematic review					
65	Harrington L, Kennerly D, Johnson C. Safety issues related to the electronic medical record (EMR): synthesis of the literature from the last decade, 2000-2009. J Healthc Manag. 2011;56(1):31-43.	While healthcare information technology (HIT) is intended to relieve some of the burden by reducing errors, several aspects of systems such as the electronic medical record (EMR) may actually increase the incidence of certain types of errors or produce new safety risks that result in harm. Healthcare leaders must appreciate the complexity surrounding EMRs, and understand the safety issues in order to mandate sound EMR design, development, implementation, and use.	IIIB	Systematic review; meta-synthesis					
66	ANA Position Statement: Electronic Health Record. December 11, 2009. <a href="http://nursingworld.org/MainMenu-Categories/Policy-Advocacy/Positions-and-Resolutions/ANAPositionStatements/Position-Statements-Alphabetically/Electronic-Health-Record.html">http://nursingworld.org/MainMenu-Categories/Policy-Advocacy/Positions-and-Resolutions/ANAPositionStatements/Position-Statements-Alphabetically/Electronic-Health-Record.html</a> . Accessed April 20, 2016.2009.	ANA statement on the adoption and use of EHRs for tracking patient care.	IVB	Position statement	N/A	N/A	N/A	N/A	N/A



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67	Kim H, Dykes P, Mar P, Goldsmith D, Choi J, Gold-berg H. Towards a standardized representation to support data reuse: representing the ICNP semantics using the HL7 RIM. <i>Stud Health Technol Inform.</i> 2009;146:308-313.	The HL7 RIM provided complete representation for the high level semantics required to represent nursing assessment with the ICNP. A terminology system needs to provide broad ranges of semantic relations to capture complete semantics of the nursing assessment data documented in an electronic system.	IIIB	Mapping study of ICNP to HL7 RIM					
68	Lundberg C, Warren J, Brokel J, et al. Selecting a standardized terminology for the electronic health record that reveals the impact of nursing on patient care. <i>Online J Nurs Inform.</i> 2008;12(2).	Using standardized terminology within electronic health records is critical for nurses to communicate their impact on patient care to the multidisciplinary team. The universal requirement for quality patient care, internal control, efficiency and cost containment, has made it imperative to express nursing knowledge in a meaningful way that can be shared across disciplines and care settings. The documentation of nursing care, using an electronic health record, demonstrates the impact of nursing care on patient care and validates the significance of nursing practice.	IVA	Expert nursing terminology panel consensus for clinical application.	N/A	N/A	N/A	N/A	N/A
69	Zielstorff RD. Characteristics of a good nursing nomenclature from an informatics perspective. <i>Online J Nurs Inform.</i> 1998;3(2).	Characteristics of a "good" nomenclature for purposes of structured data capture, storage, analysis, and reporting include: domain completeness, granularity, parsimony, synonymy, non-ambiguity, non-redundancy, clinical utility, multiple axes and combinatorial. The terms should have unique and context-free term identifiers, each term should have a definition, terms should be arranged hierarchically with the ability to have multiple parents, and it must be possible to map terms to other standard classifications.	VC	Expert opinion	N/A	N/A	N/A	N/A	N/A
70	Tastan S, Linch GC, Keenan GM, et al. Evidence for the existing American Nurses Association-recognized standardized nursing terminologies: a systematic review. <i>Int J Nurs Stud.</i> 2014;51(8):1160-1170.	Evidence supports the successful integration and use in electronic health records for two standardized nursing terminology sets: (1) the North American Nursing Diagnosis-International, Nursing Interventions Classification, and Nursing Outcome Classification set; and (2) the Omaha System set.	IIIA	Systematic literature review with meta-analysis					
71	Graves JR, Corcoran S. The study of nursing informatics. <i>Image J Nurs Sch.</i> 1989;21(4):227-231.	Seminal article on establishing the discipline of nursing informatics using the Data-Information-Knowledge framework.	IVB	Synthesis of evidence					
72	Beyea SC. Standardized language—making nursing practice count. <i>AORN J.</i> 1999;70(5):831-838.	Use of standardized nursing terminologies facilitate data capture and representation of nursing practice.	IVB	Position statement	N/A	N/A	N/A	N/A	N/A
73	Carrington JM. The usefulness of nursing languages to communicate a clinical event. <i>Comput Inform Nurs.</i> 2012;30(2):82-88.	Standardized nursing language preceived to support planning care but also posed semantic challenges and fostered inaccuracies in patient information. Further research needed on nurse-to-nurse communication, failure-to-rescue events and relationship of standardized nursing languages.	IIIA	Qualitative content analysis	Diads of documenting and receiving nurses from 2 sites.	N/A	Findings of site A compared against site B	20 document ing, 17 receiving nurses	N/A
74	Saba VK, Taylor SL. Moving past theory: use of a standardized, coded nursing terminology to enhance nursing visibility. <i>Comput Inform Nurs.</i> 2007;25(6):324-331.	The care nurses provide does make a difference to patient outcomes, and specific nursing care activities contribute to positive patient outcomes. Standardized, coded nursing terminology identifies the complex elements that make up nursing care and enables generation of quantitative data to prove the relationship between nursing care and patient outcomes.	IVB	Report of research for development of CCC					

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75	Dykes PC, DaDamio RR, Goldsmith D, Kim HE, Ohashi K, Saba VK. Leveraging standards to support patient-centric interdisciplinary plans of care. AMIA Annual Symp Proc. 2011;2011:356-363.	Effective care planning is included in the proposed Stages 2-3 Meaningful Use quality measures. To facilitate interoperability, standardization of plan of care messaging, content, information and terminology models are needed. This degree of standardization requires local and national coordination.	IIIB	EHR transmission standards review for interoperative interdisciplinary patient-centric plans of care.					
76	42 CFR §482.51. Condition of participation: surgical services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2010-title42-vol5/CFR-2010-title42-vol5-sec482-51">https://www.gpo.gov/fdsys/granule/CFR-2010-title42-vol5/CFR-2010-title42-vol5-sec482-51</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
77	Westra BL, Subramanian A, Hart CM, et al. Achieving "meaningful use" of electronic health records through the integration of the Nursing Management Minimum Data Set. J Nurs Adm. 2010;40(7-8):336-343.	New criteria for meaningful use of EHRs will impact financial incentives beginning in October 2010 and disincentives beginning in 2015. Included in these criteria is reuse of EHR data for quality improvement. Nursing management data, in addition to EHR data, are essential to explain variances in the quality of care. Updating of nursing terminologies is necessary for the representation in national financial incentive programs.	IVB	Report of nursing terminology maintenance					
78	Mangalmurti SS, Murtagh L, Mello MM. Medical malpractice liability in the age of electronic health records. N Engl J Med. 2010;363(21):2060-2067.	The scope of medical liability risks and benefits shift with the adoption of EHRs. Liability that arises primarily because of poorly designed EHR systems arguably should rest with those in control of system architecture and implementation, not end users. However, in many cases, suboptimal design may set the stage for user errors, complicating the assignment of fault.	IVA	Expert opinion	N/A	N/A	N/A	N/A	N/A
79	Centers for Medicare & Medicaid Services (CMS) HHS. Medicare and Medicaid programs; changes in provider and supplier enrollment, ordering and referring, and documentation requirements; and changes in provider agreements. Final rule. Fed Regist. 2012;77(82):25284- 25318.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
80	42 CFR Part 495 Medicare and Medicaid programs; Electronic Health Record Incentive Program—modifications to meaningful use in 2015 through 2017. Proposed rule. Fed Regist. 2015;80(72):20346-20399.	EHR Incentive Program Final Rule, Stage 2 requirements	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
81	Hayrinen K, Saranto K, Nykanen P. Definition, structure, content, use and impacts of electronic health records: a review of the research literature. Int J Med Inform. 2008;77(5):291-304.	Several data components were documented in EHRs: daily charting, medication administration, physical assessment, admission nursing note, nursing care plan, referral, present complaint (e.g. symptoms), past medical history, life style, physical examination, diagnoses, tests, procedures, treatment, medication, discharge, history, diaries, problems, findings and immunization. In the future it will be necessary to incorporate different kinds of standardized instruments, electronic interviews and nursing documentation systems in EHR systems.	IIIA	Systematic literature review: meta-analysis					
82	Hyun S, Bakken S. Toward the creation of an ontology for nursing document sections: mapping section names to the LOINC semantic model. AMIA Annu Symp Proc. 2006;2006:364-368.	A formal consistent way of stating the components of nursing documents in EHRs. LOINC supports standardized document section names. In order to be more useful for representing nursing document components, currently missing nursing section headings need to be added and extension of the attributes in LOINC semantic model is desired.	IIIB	Investigational; Mapping EHR content to HL7 standards.					
83	National Quality Forum. Executive summary. In: Health Information Technology Automation of Quality Measure: Quality Data Set and Data Flow. Washington, DC: NQF;2009:iii-vi.		IA		N/A	N/A	N/A	N/A	N/A

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84	Goossen WT, Ozbolt JG, Coenen A, et al. Development of a provisional domain model for the nursing process for use within the Health Level 7 reference information model. J Am Med Inform Assoc. 2004;11(3):186-194.	The integration of nursing information, terminology, and processes in information models into the HL7 RIM is a first step toward rendering nursing information machine-readable in electronic patient records and messages. An eventual practical result, after much more development, would be to create computable, structured information for nursing documentation.	IIIB	Expert panel investigation; Mapping validation of nursing terminology into HL7 RIM (standards).					
85	Adler-Milstein J, Jha AK. Sharing clinical data electronically: a critical challenge for the health care system. JAMA. 2012;307(16):1695-1696.	Free flow of clinical data is vital and whether the United States will be able to overcome the substantial barriers to Health Information Exchange (HIE) is unclear. Clinician support is critical to ensuring that HIE becomes commonplace and is used in daily clinical practice. Without clinician support and without broad-based HIE, it will be substantially more difficult to improve the performance of the US health care delivery system.	VA	Expert opinion/viewpoint based on regulations and identified challenges	N/A	N/A	N/A	N/A	N/A
86	Centers for Medicare & Medicaid Services (CMS) HHS. Medicare and Medicaid programs; electronic health record incentive program—stage 2. Final rule. Fed Regist. 2012;77(171):53967-54162.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
87	Jha AK, DesRoches CM, Campbell EG, et al. Use of electronic health records in US hospitals. N Engl J Med. 2009;360(16):1628-1638.	The very low levels of adoption of electronic health records in U.S. hospitals suggest that policymakers face substantial obstacles to the achievement of health care performance goals that depend on health information technology. A policy strategy focused on financial support, interoperability, and training of technical support staff may be necessary to spur adoption of electronic-records systems in U.S. hospitals.	IIIA	survey (mail and phone follow-up)	American Hospital Association acute care membership hospital members excluding federal hospitals and those located outside of the 50 states and District of Columbia.			2952	32 clinical functionalities of EHRs
88	Brown DS, Donaldson N, Burnes Bolton L, Aydin CE. Nursing-sensitive benchmarks for hospitals to gauge high-reliability performance. J Healthc Qual. 2010;32(6):9-	Benchmarking expedites the implementation of best practices and is crucial to hospitals' effective, reliable, and superior performance. Comparative performance data are used by accrediting and regulatory bodies to evaluate performance and by consumers in making decisions on where to seek healthcare. Nursing-sensitive quality measures affirmed by the National Quality Forum are now used in public reporting and pay-for-performance in addition to traditional medical outcome metrics.	IVB	Longitudinal Report on CALNOC benchmarks of nurse sensitive outcomes (falls, PU)	Member hospitals (225)		Annual change	1600 patient units	% of falls or PU
89	US Department of Health and Human Services. Report to Congress: Medicare Ambulatory Surgical Center Value-Based Purchasing Implementation Plan. Washington, DC: Centers for Medicare & Medicaid Services; 2011. <a href="https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ASCPayment/Downloads/C_ASC_RTC-2011.pdf">https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ASCPayment/Downloads/C_ASC_RTC-2011.pdf</a> . Accessed April 20, 2016.		VA	Expert opinion - CMS					
90	Becoming a High Reliability Organization: Operational Advice for Hospital Leaders. Rockville, MD: Agency for Healthcare Research and Quality; 2008.	High reliability organizations provide safer and higher quality patient care and improving sensitivity to operations, reluctance to simplify, preoccupation with failure, deference to expertise, and resilience.	IVB	Position statement					

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91	Thompson D, Johnston P, Spurr C. The impact of electronic medical records on nursing efficiency. J Nurs Adm. 2009;39(10):444-451.	Nursing efficiency improvements require process and practice changes in addition to EMR technology, including such things as charting by exception and multidisciplinary charting (entering data once, using it many times). Achievement of efficiency in nursing care with an EMR requires a comprehensive understanding of the components of the nursing process and the multidisciplinary and complex nature of patient care, and improved coordination with the many other disciplines that work with nursing in the care of the patient.	VB	Lit review and case study					
92	Shekelle PG, Morton SC, Keeler EB. Costs and Benefits of Health Information Technology. Evidence Report/Technology Assessment No. 132. (Prepared by the Southern California Evidence-based Practice Center under Contract No. 290-02-0003). Rockville, MD: Agency for Healthcare Research and Quality; 2006.	HIT has the potential to enable a dramatic transformation in the delivery of health care, making it safer, more effective, and more efficient. Some organizations have already realized major gains through the implementation of multifunctional, interoperable HIT systems built around an EHR. However, widespread implementation of HIT has been limited by a lack of generalizable knowledge about what types of HIT and implementation methods will improve care and manage costs for specific health organizations.	IVA	EBP expert panel report on HIT					
93	Department of Veterans Affairs. Sharing information between the Department of Veterans Affairs and the Department of Defense. Interim final rule. Fed Regist. 2011;76(203):65133-65135.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
94	Office of the National Coordinator for Health Information Technology (ONC) Department of Health and Human Services. 2014 Edition Release 2 Electronic Health Record (EHR) certification criteria and the ONC HIT Certification Program; regulatory flexibilities, improvements, and enhanced health information exchange. Final rule. Fed Regist. 2014;79(176):54429-54480.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
95	A Blueprint for the CMS Measures Management System. Version 11.1 ed. Washington, DC: Centers for Medicare & Medicaid Services; August 2015. <a href="https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/Downloads/Blueprint111.pdf">https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/Downloads/Blueprint111.pdf</a> . Accessed April 20, 2016.	Federal guidelines for national quality measure development	IA	National guidelines	N/A	N/A	N/A	N/A	N/A
96	Murdoch TB, Detsky AS. The inevitable application of big data to health care. JAMA. 2013;309(13):1351-1352.	Big data in health care can generate new knowledge, help to disseminate knowledge, promote personalized medicine with opportunities improve population health, and link EMR data with other personalized health information.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
97	Al-Rawajfah OM, Aloush S, Hewitt JB. Use of electronic health-related datasets in nursing and health-related research. West J Nurs Res. 2015;37(7):952-983.	There is significant untapped knowledge embedded in large nursing electronic health-record datasets.	IIIA	Systematic review - meta-synthesis					
98	Transforming Health Care Through Big Data. New York, NY: Institute for Health Technology Transformation; 2013.	Big data promises to ease the transition to authentic data-driven health care, allowing health care professionals to improve the standard of care based on millions of cases, to define needs for subpopulations, to make more personalized decisions for individual patients, and to identify and intervene for population groups at risk for poor outcomes. But while big data has transformed much of American industry, it's also true that massive information sharing and analysis has yet to generate significant benefits within health care.	VB	Expert consensus paper	N/A	N/A	N/A	N/A	N/A

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99	Sun J, Hu J, Luo D, et al. Combining knowledge and data driven insights for identifying risk factors using electronic health records. AMIA Annu Symp Proc. 2012;2012:901-910.	A systematic framework for combining knowledge and data driven insights for risk factor identification can improve knowledge features of an EHR by adding predictive and meaningful data driven features to improve prediction performance and improve population health.	IIA	Data science- predictive analytics; Artificial Intelligence	Heart failure (HF) patient data	Combine knowledge-based risk factors with existing data for HF.	Knowledge-based risk factors	4,644 HF cases/45981 controls	Identification of patients with HF
100	42 CFR §482.24. Condition of participation: medical record services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-24/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-24/content-detail.html</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
101	101. 42 CFR §482.23. Condition of participation: nursing services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-23/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-23/content-detail.html</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
102	42 CFR §416.46. Condition for Coverage—Nursing services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-46">https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-46</a> . Accessed April 20, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
103	Scruth EA. Quality nursing documentation in the medical record. Clin Nurse Spec. 2014;28(6):312-314.	Failure to maintain a reasonable standard of documentation of nursing interventions administered to a patient could be viewed as professional misconduct potentially resulting in a nurse facing charges against of essential competency. Nursing documentation can be the prime source of evidence in investigations. Quality nursing documentation is a complex issue. Accuracy of nursing documentation is centered on 3 main concepts: reflection of nursing care, comprehensive and thorough detail of the patient journey, and clarity in terms used.	VC	Expert opinion	N/A	N/A	N/A	N/A	N/A
104	Jefferies D, Johnson M, Griffiths R. A meta-study of the essentials of quality nursing documentation. Int J Nurs Pract. 2010;16(2):112-124.	Quality nursing documentation demands that the nurse positions the patient at the centre of this documentation. Therefore, a shift in the nurse's perception of nursing documentation from a platform to protect the nurse in a legal situation to the patient is necessary.	IIIA	Meta-synthesis					
105	42 CFR §485.638. Conditions of participation: clinical records. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec485-638">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec485-638</a> . Accessed April 21, 2016.	Regulation for hospital data capture in clinical records	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
106	42 CFR §416. Ambulatory surgical services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.cms.gov/Regulations-and-Guidance/Legislation/CFCsAndCoPs/ASC.html">https://www.cms.gov/Regulations-and-Guidance/Legislation/CFCsAndCoPs/ASC.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
107	Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016.		IVA	Professional practice guidelines	N/A	N/A	N/A	N/A	N/A
108	42 CFR §416.51. Conditions for coverage: infection control. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2012-title42-vol3/CFR-2012-title42-vol3-sec416-51">https://www.gpo.gov/fdsys/granule/CFR-2012-title42-vol3/CFR-2012-title42-vol3-sec416-51</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
109	NPSG.07.05.01: Implement evidence-based practices for preventing surgical site infections. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
110	IC.01.05.01: The hospital has an infection prevention and control plan. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A

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111	IC.02.01.01: The hospital implements its infection prevention and control plan. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
112	Guideline for care of the patient receiving local anesthesia. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:577-588.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
113	Krenzischek DA, Wilson L; ASPAN. ASPAN pain and comfort clinical guideline. J Perianesth Nurs. 2003;18(4):232-236.	PACU pain guideline	IVC	Practice Guidelines Consensus	N/A	N/A	N/A	N/A	N/A
114	ASPAN. 2015-2017 Perianesthesia Nursing Standards, Practice Recommendations and Interpretive Statements. Cherry Hill, NJ: American Society of PeriAnesthesia Nurses; 2015.		IVB	Professional standards	N/A	N/A	N/A	N/A	N/A
115	42 CFR §416.48. Condition for coverage: pharmaceutical services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-48/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-48/content-detail.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
116	4116. Centers for Medicare & Medicaid Services. Department of Health and Human Services. Condition of participation: patient's rights. 42 CFR §482.13. <a href="http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=42:5.0.1.1.1;cc=ecfr">http://www.ecfr.gov/cgi-bin/text-idx?rgn=div5;node=42:5.0.1.1.1;cc=ecfr</a> . Accessed April 21, 2016.	Patient rights, ambulatory regulations	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
117	Medication management. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
118	Provision of care, treatment, and services. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015..		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
119	Medical records: 600.040.010. In: Medicare Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 6.5 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2014:89.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
120	Clinical records and health information. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care Inc; 2015:49-51.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
121	Quality of care provided. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care Inc; 2015:42-43.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
122	29 CFR §1910.1030. Bloodborne pathogens. US Department of Labor, Occupational Safety and Health Standards. <a href="http://www.osha.gov/pls/oshaweb/owa-disp.show_document?p_table=standards&amp;p_id=10051">http://www.osha.gov/pls/oshaweb/owa-disp.show_document?p_table=standards&amp;p_id=10051</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
123	AORN Position Statement: Preventing Wrong- Patient, Wrong-Site, Wrong-Procedure Events. AORN, Inc. <a href="https://www.aorn.org/guidelines/clinical-resources/position-statements">https://www.aorn.org/guidelines/clinical-resources/position-statements</a> . Accessed April 20, 2016.		IVB	Position statement	N/A	N/A	N/A	N/A	N/A
124	Guideline for preoperative patient skin antisepsis. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:41-64.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
125	Rights and responsibilities of the individual. In: Comprehensive Accreditation Manual for Hospitals. Oak- brook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
126	NPSG.03.06.01: Maintain and communicate accurate patient medication information. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
127	Guideline for prevention of transmissible infections. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:471-506.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
128	Postanesthetic care unit (PACU). In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 14.4 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2016:43-45.		IVB	Accreditation requirements	N/A	N/A	N/A	N/A	N/A
129	Guideline for care of the patient receiving moderate sedation/analgesia. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:617-648.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A

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130	Guideline for a safe environment of care, part 1. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:237-262.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
131	Guideline for prevention of unplanned patient hypothermia. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:531-554		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
132	Guideline for prevention of deep vein thrombosis. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:521-530.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
133	Guideline for positioning the patient. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:649-668.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
134	42 CFR §482.27. Condition of participation: laboratory services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-27/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-27/content-detail.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
135	42 CFR §416.52. Conditions for coverage: patient admission, assessment and discharge. Centers for Medi- care & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-sec416-52">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-sec416-52</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
136	Record of care, treatment, and services. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
137	Guideline for complementary care interventions. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:507-520.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
138	Universal Protocol. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
139	Quality and performance improvement standards for perioperative nursing. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2015:761-770.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
140	Guideline for transfer of patient care information. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:669-674.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
141	Surgical and related services. In: Accreditation Handbook for Ambulatory Health Care. Skokie, IL: Accreditation Association for Ambulatory Health Care Inc; 2015:64-71.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
142	Accreditation Association for Ambulatory Health Care. Accreditation Handbook for Ambulatory Health Care. Skokie, IL: The Association; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
143	Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. Version 14.4. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2016.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
144	42 CFR §482.41. Condition of participation: physical environment. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-41">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-41</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
145	42 CFR §416.44. Condition for coverage: environment. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2012-title42-vol3/CFR-2012-ti-42-vol3-sec416-44">https://www.gpo.gov/fdsys/granule/CFR-2012-title42-vol3/CFR-2012-ti-42-vol3-sec416-44</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
146	Environment of care. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
147	Guideline for electrosurgery. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:119-136.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
148	Guideline for care of patients undergoing pneumatic tourniquet-assisted procedures. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:151-176.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
149	Guideline for minimally invasive surgery. In: Guide- lines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:589-616.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
150	Guideline for laser safety. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:137-150.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
151	Guideline for sharps safety. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:417-440.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
152	Guideline for a safe environment of care, part 2. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:263-288.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A

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153	Infection prevention and control. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
154	ANSI/AAMI ST79:2010, A1, A2, A3 & A4:2013: Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities. Arlington, VA: Association for the Advancement of Medical Instrumentation; 2013.		IVC	Practice guidelines	N/A	N/A	N/A	N/A	N/A
155	Medical records: 600.010.060. In: Medicare Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 6.5 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2014:79.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
156	156. Guideline for autologous tissue management. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:185-236.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
157	42 CFR 482.45: Condition of participation: Organ, tissue, and eye procurement. 2014.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
158	Guideline for specimen management. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
159	Policy on Standardized Packaging of Human Organs and Tissue Typing Materials. Richmond, VA: Organ Procurement and Transplantation Network; 2010.		IA	Regulatory	N/A	N/A	N/A	N/A	N/A
160	Transplant safety. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
161	Guideline for processing flexible endoscopes. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:675-758.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
162	Guideline for cleaning and care of surgical instruments. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:773-808.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
163	Quality Indicators. Agency for Healthcare Research and Quality. <a href="http://www.qualityindicators.ahrq.gov/">http://www.qualityindicators.ahrq.gov/</a> . Accessed April 21, 2016.	National health care quality indicators for reporting	IA	Government guideline	N/A	N/A	N/A	N/A	N/A
164	Mangram AJ, Horan TC, Pearson ML, Silver LC, Jar- vis WR. Guideline for prevention of surgical site infection, 1999. Hospital Infection Control Practices Advisory Committee. Infect Control Hosp Epidemiol. 1999;20(4):247-278.		IVA	CDC National practice guideline	N/A	N/A	N/A	N/A	N/A
165	42 CFR §482.43. Condition of participation: discharge planning. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-43/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-43/content-detail.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
166	National Patient Safety Goal 7: Reduce the risk of health care-associated infections. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
167	SCIP-Inf-4: Cardiac surgery patients with controlled 6 a.m. postoperative blood glucose. In: The Specifications Manual for National Hospital Inpatient Quality Measures. Version 3.3. Washington, DC: Centers for Medicare & Medicaid Services and Joint Commission; 2011. <a href="http://www.wicheckpoint.org/Docs/STK_Q2-11_Manual_CMSTJC.pdf">http://www.wicheckpoint.org/Docs/STK_Q2-11_Manual_CMSTJC.pdf</a> . Accessed April 21, 2016.		IA	Federal rule	N/A	N/A	N/A	N/A	N/A
168	SCIP-Inf-6: Surgery patients with appropriate hair removal. In: Hospital Inpatient Quality Measures. Surgical Care Improvement Project (SCIP) Specifications Manual. 3.3 ed. 2011.	Surgical Care Improvement Project surgical hair removal quality standard.	IVB	National surgical infection prevention quality standard	N/A	N/A	N/A	N/A	N/A
169	General safety in the facility. General. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 14.4 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2016:45-50.		IVB	Accreditation	N/A	N/A	N/A	N/A	N/A
170	Guideline for radiation safety. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:333-368.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
171	ANSI Z136.4-2010: American National Standard Recommended Practice for Laser Safety Measurements for Hazard Evaluation. Orlando, FL: Laser Institute of America; 2010.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
172	ANSI Z136.7-2008: American National Standard for Testing and Labeling of Laser Protective Equipment. Orlando, FL: Laser Institute of America; 2008.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A



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173	Guideline for prevention of retained surgical items. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:369-416.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
174	109th US Congress. Deficit Reduction Act of 2005. Pub L 109-171. February 8, 2006. <a href="https://www.gpo.gov/fdsys/pkg/PLAW-109publ171/html/PLAW-109publ171.htm">https://www.gpo.gov/fdsys/pkg/PLAW-109publ171/html/PLAW-109publ171.htm</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
175	AORN Position Statement: Creating a Practice Environment of Safety. AORN, Inc. <a href="http://www.aorn.org/guidelines/clinical-resources/position-statements">http://www.aorn.org/guidelines/clinical-resources/position-statements</a> . Accessed April 20, 2016.		IVB	Position statement: expert opinion	N/A	N/A	N/A	N/A	N/A
176	42 CFR 482.22: Condition of participation: Medical staff. 2014. Department of Health and Human Services. <a href="http://www.gpo.gov/fdsys/pkg/CFR-2010-title42-vol5/pdf/CFR-2010-title42-vol5-sec482-22.pdf">http://www.gpo.gov/fdsys/pkg/CFR-2010-title42-vol5/pdf/CFR-2010-title42-vol5-sec482-22.pdf</a> . Accessed April 21, 2016.	National medical staff statutes	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
177	42 CFR §416.42. Condition for coverage: surgical services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-42/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2007-title42-vol3/CFR-2007-title42-vol3-sec416-42/content-detail.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
178	42 CFR §416.49. Condition for coverage: laboratory and radiologic services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2010-title42-vol3/CFR-2010-title42-vol3-sec416-49">https://www.gpo.gov/fdsys/granule/CFR-2010-title42-vol3/CFR-2010-title42-vol3-sec416-49</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
179	Anesthesia. Pre-anesthesia care. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 14.4 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2016:79-81.		IVB	Accreditation	N/A	N/A	N/A	N/A	N/A
180	General environment—additional Medicare standards. In: Medicare Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 6.5 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2014:37.		IVB	Accreditation	N/A	N/A	N/A	N/A	N/A
182	42 CFR §482.25. Condition of participation: pharmaceutical services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-25">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-25</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
183	National Patient Safety Goal 2: Improve the effectiveness of communication among caregivers. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
184	Operating room policy, environment and procedures. Sterilization. In: Medicare Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 6.5 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2014:13-15.		IVB	Accreditation	N/A	N/A	N/A	N/A	N/A
185	Quality control. In: ANSI/AAMI ST79:2010, A1, A2, A3 & A4:2013: Comprehensive Guide to Steam Sterilization and Sterility Assurance in Health Care Facilities. Arlington, VA: Association for the Advancement of Medical Instrumentation; 2013:97-138.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
186	Guideline for high-level disinfection. In: Guidelines for Perioperative Practice. Denver, CO: AORN, Inc; 2016:759-772.		IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
187	Clinical practice guideline 1: ASPAN's evidence- based clinical practice guideline for the promotion of perioperative normothermia. In: Perianesthesia Nursing Standards and Practice Recommendations 2010- 2012. Cherry Hill, NJ: American Society of PeriAnesthesia Nurses; 2010:24-45.		IVA	Practice guidelines	N/A	N/A	N/A	N/A	N/A
188	Operating room policy, environment and procedures. Procedures—sterilization. In: Regular Standards and Checklist for Accreditation of Ambulatory Surgery Facilities. 14.4 ed. Gurnee, IL: American Association for Accreditation of Ambulatory Surgery Facilities; 2016:27-28.		IVB	Accreditation	N/A	N/A	N/A	N/A	N/A
189	Beyond the count: preventing the retention of foreign objects during interventional radiology procedures. Pa Patient Saf Advis. 2008;5(1):24-27.	ECRI PA Patient Safety Authority recommendations	IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
190	ECRI Institute. Sales representatives and other outsiders in the OR. Operating Room Risk Management. 2013;1.	ECRI Operating Room risk management recommendations for sales representatives entering surgical settings	IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A

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191	Use of blunt-tip suture needles to decrease percutaneous injuries to surgical personnel: safety and health information bulletin. Atlanta, GA. National Institute for Occupational Safety and Health; 2007. <a href="http://www.cdc.gov/niosh/docs/2008-101/">http://www.cdc.gov/niosh/docs/2008-101/</a> .	NIOSH guidelines for sharps safety	IA	Practice guideline	N/A	N/A	N/A	N/A	N/A
192	Rutala WA, Weber DJ; Healthcare Infection Control Practices Advisory Committee (HICPAC). Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008. Atlanta, GA: Centers for Disease Control and Prevention; 2008.	CDC, HICPAC recommendations for facility programming	IVA	Practice guideline	N/A	N/A	N/A	N/A	N/A
193	Pommier v ABC Insurance Company, 715 So2d 1270, 1297-1342 (La.App.3dCir. 1998).	Legal proceedings citing AORN guidelines	VA	Legal	N/A	N/A	N/A	N/A	N/A
194	Lama v Borrás, 1994 16 F3d 473 (United States Court of Appeals, First Circuit, February 25, 1994). <a href="http://law.justia.com/cases/federal/appellate-courts/F3/16/473/491880/">http://law.justia.com/cases/federal/appellate-courts/F3/16/473/491880/</a> . Accessed April 21, 2016.	La.App.3dCir. 1998	VA	Legal	N/A	N/A	N/A	N/A	N/A
195	Ledesma v Shashoua, 2007 WL 2214650 (Tex App, August 3, 2007).	Legal proceedings citing AORN guidelines	VA	Legal	N/A	N/A	N/A	N/A	N/A
196	42 CFR §482.52. Condition of participation: anesthesia services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-52/content-detail.html">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-52/content-detail.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
197	42 CFR §482.28. Condition of participation: food and dietetic services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-28">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-28</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
198	21 CFR §821. Medical device tracking requirements. US Food and Drug Administration. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title21-vol8/CFR-2011-title21-vol8-part821">https://www.gpo.gov/fdsys/granule/CFR-2011-title21-vol8/CFR-2011-title21-vol8-part821</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
199	42 CFR §482.26. Condition of participation: radio-logic services. Centers for Medicare & Medicaid Services. Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-26">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol5/CFR-2011-title42-vol5-sec482-26</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
200	Andreae C, Ekstedt M, Snellman I. Patients' participation as it appears in the nursing documentation, when care is ruled by standardized care plans. ISRN Nurs. 2011;2011:707601.	The participation of patients in their care is determined by the nurse's ability to coordinate the care environment. To the patient, participation means care managed by others and not always based on personal desires and needs.	IIIB	Content analysis/retrospective review	Patients admitted for MI			54	Documented presence of described patient participation in care.
201	Social Security Act, 42 USC 1396d §1905, Pub L No. 74-271.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
202	Medical device tracking; guidance for industry and FDA staff. US Food and Drug Administration. <a href="http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm071756.htm">http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm071756.htm</a> . Accessed April 21, 2016.		I: Reg	Federal guidance	N/A	N/A	N/A	N/A	N/A
203	Food and Drug Administration Modernization Act of 1997, S 830, 105th Cong, 1st Sess (1997), Pub L No 105-115.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
204	UDI Compliance Initiative Summary. Scituate, MA: Strategic Marketplace Initiative; 2015.	SME recommendations for capture of unique identifiers on implantable objects.	VC	Expert opinion	N/A	N/A	N/A	N/A	N/A
205	Survey & Certification—certification & compliance. Centers for Medicare & Medicaid Services. <a href="https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandCompliance/index.html">https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandCompliance/index.html</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
206	NIAHO Interpretive Guidelines and Surveyor Guidance. 10.1 ed. Milford, OH: DNV Healthcare Inc; 2012.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
207	Overview. Healthcare Facilities Accreditation Program. <a href="http://www.hfap.org/about/overview.aspx">http://www.hfap.org/about/overview.aspx</a> . Accessed April 21, 2016.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
208	Comprehensive Accreditation Manual for Ambulatory Care. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A

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209	Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
210	Hospital compare. Medicare.gov. <a href="https://www.medicare.gov/hospitalcompare/search.html?">https://www.medicare.gov/hospitalcompare/search.html?</a> Accessed April 21, 2016.	National regulatory hospital quality reporting web site.	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
211	Centers for Medicare & Medicaid Services (CMS) HHS. Medicare and Medicaid programs: hospital outpatient prospective payment and ambulatory surgical center payment systems and quality reporting programs; Hospital Value-Based Purchasing Program; organ procurement organizations; quality improvement organizations; Electronic Health Records (EHR) Incentive Program; provider reimbursement determinations and appeals. Final rule with comment period and final rules. Fed Regist. 2013;78(237):74825-75200.		I: Reg	Federal regulation	N/A	N/A	N/A	N/A	N/A
212	Straube BM. Letter to David T. Tayloe Jr. [written communication]. Baltimore, MD: Department of Health & Human Services; 2010.	CMS directive on requirements for standing orders	IVA	CMS response to inquiry	N/A	N/A	N/A	N/A	N/A
213	42 CFR §416.50. Condition for coverage: patient rights. Centers for Medicare & Medicaid Services. US Department of Health and Human Services. <a href="https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-sec416-50">https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-sec416-50</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
214	RC.02.03.07: Qualified staff receive and record verbal orders. In: Comprehensive Accreditation Manual for Ambulatory Care. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
215	Bryant G, DeVault K, Ericson C, et al. Guidance for clinical documentation improvement programs. J AHIMA. 2010;81(5):45-50.	American Health Information Management Association guidelines for creating and maintaining a clinical documentation improvement program	IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
216	Dawson A, Orsini MJ, Cooper MR, Wollenburg K. Medication safety—reliability of preference cards. AORN J. 2005;82(3):399-407.	The contributing factors to medication delivery errors include: misidentification of medications or solutions; inadvertent intravascular or organ infusion of a potentially toxic substance; infusion and infusion-device problems; timing of medication administration, specifically of preoperative antibiotics; miscommunication of verbal orders; and outdated preference cards. Findings suggest the use of medication preference cards is outdated and contributes to a higher risk of medication errors in the OR.	IIB	Quasi-experimental	Surgical preference cards			392	
217	MM.04.01.01: Medication orders are clear and accurate. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
218	218. Cole LM. Med report. Documenting to reduce medication errors. OR Nurse. 2008;2(7):17-19.		IVC	Literature review					
219	Brunetti L, Santell JP, Hicks RW, Stevenson JG. USP Medication Safety Forum. The impact of abbreviations on patient safety. Jt Comm J Qual Patient Saf. 2007;33(9):576-583.	Nearly 5% of all errors reported to MEDMARX from 2004 through 2006 were attributable to abbreviations. Communication is the leading cause of sentinel events and that abbreviation use hinders communication, limiting abbreviation use improves patient safety and patient care. In addition, errorprone abbreviations are preventable and therefore are a logical area for improvement. This study provides further support to the “Do Not Use” list.	IIIA	Retrospective report review	Medication errors submitted to MEDMARX			29974	
220	Broussard M, Bass PF 3rd, Arnold CL, McLarty JW, Bocchini JA Jr. Preprinted order sets as a safety intervention in pediatric sedation. J Pediatr. 2009;154(6):865-868.	Implementing preprinted physician orders, consent forms, and prepared packets increased documentation compliance and ordering of reversal agents and resuscitation equipment. Medication dosage ordering errors decreased.	IIB	Pre-post retrospective chart review; organizational experience.	Charts of pediatric patients requiring procedural sedation.	Creation of a standard order set for pediatric procedural sedation.	Pre-intervention and post-intervention	84 charts	% of charts with complete and accurate documentation and medication orders.
222	Murphy EK. Charting by exception. AORN J. 2003;78(5):821-823.	Risk management strategies for National periop documentation for charting by exception	VA	Expert opinion; review of case law	N/A	N/A	N/A	N/A	N/A

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223	Kerr N. "Creating a protective picture": a grounded theory of RN decision making when using a charting-by-exception documentation system. <i>Medsurg Nurs</i> . 2013;22(2):110-118.	Efforts taken by nurses in day-to-day documentation reflect the contribution they believe nursing documentation makes to the provision of quality patient care.	IIIA	Qualitative, grounded theory	RNs working in medical-surgical setting using charting by exception			16	
224	AHIMA e-HIM Work Group on Maintaining the Legal EHR. <i>Maintaining a Legally Sound Health Record: Paper and Electronic</i> . Journal of AHIMA. 2005;76(10): 64A-L.		IVB	Practice guideline; consensus	224				
225	Short MS. Charting by exception on a clinical pathway. <i>Nurs Manage</i> . 1997;28(8):45-46.	Charting by exception can be implemented using a well researched and structure plan.	IIIB	Organizational experience					
226	Holden RJ. Cognitive performance-altering effects of electronic medical records: an application of the human factors paradigm for patient safety. <i>Cogn Technol Work</i> . 2011;13(1):11-29.	In addition to confirming several commonly hypothesized performance benefits of EMR (e.g., faster access to information), this study revealed performance benefits of EMR improving safety. Each of the ways performance was found to suffer is a candidate mechanism explaining why some errors persist, new errors surface, and patient safety is worsened when EMR and other health ITs are introduced.	IIIB	Qualitative - interviews	Physicians using EMRs			20	
227	Driving Quality and Performance Measurement—A Foundation for Clinical Decision Support: A Consensus Report. Washington, DC: NQF; 2010.	NQF consensus report on the approach for national quality measure development	VA	Expert opinion					
228	Committee on Data Standards for Patient Safety Board on Health Care Services Institute of Medicine of the National Academies. <i>Key Capabilities of an Electronic Health Record System</i> . Letter Report. Washington, DC: National Academies Press; 2003.	National Consensus report and recommendations on key EHR functions to promote patient safety.	IVA	Expert opinion					
229	Institute of Medicine. <i>Digital Infrastructure for the Learning Health System: The Foundation for Continuous Improvement in Health and Health Care: Workshop Series Summary</i> . Washington, DC: The National Academies Press; 2011.	HIT infrastructure to support sustainable high quality care.	IVA	Literature review, expert opinion					
230	Health Insurance Portability and Accountability Act of 1996, 42 USC §201 (1996), Pub L No. 104-191, 110 Stat 1936.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
231	Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification rules under the Health Information Technology for Economic and Clinical Health Act and the Genetic Information Nondiscrimination Act; other modifications to the HIPAA rules. <i>Fed Reg- ist</i> . 2013;78(17):5565-5702.		I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
232	Fernandez-Aleman JL, Senor IC, Lozoya PA, Toval A. Security and privacy in electronic health records: a systematic literature review. <i>J Biomed Inform</i> . 2013;46(3):541-562.	EHRs allow structured medical data to be shared between authorized health stakeholders in order to improve the quality of healthcare delivery and to achieve massive savings. In these systems, privacy and security concerns are tremendously important, since the patient may encounter serious problems if sensitive information is disclosed.	IIB	Systematic literature review					
233	21 CFR §11. Electronic records; electronic signatures. US Food and Drug Administration. Department of Health and Human Services. <a href="http://www.ecfr.gov/cgi-bin/text-idx?SID=801a6a66afbc46f404bcd011da79ab5e&amp;mc=t&amp;ue&amp;tpl=/ecfrbrowse/Title21/21cfrv1_02.tpl#0">http://www.ecfr.gov/cgi-bin/text-idx?SID=801a6a66afbc46f404bcd011da79ab5e&amp;mc=t&amp;ue&amp;tpl=/ecfrbrowse/Title21/21cfrv1_02.tpl#0</a> . Accessed April 21, 2016.		I: Reg	Federal Regulation					
234	Clinical records and health information. In: <i>Accreditation Handbook for Ambulatory Health Care</i> . Skokie, IL: Accreditation Association for Ambulatory Health Care Inc; 2015:49-51		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
235	US Department of Health and Human Services. <i>Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information</i> . Washington, DC: Office of the National Coordinator for Health Information Technology; 2008. <a href="https://www.healthit.gov/sites/default/files/nationwide-ps-framework-5.pdf">https://www.healthit.gov/sites/default/files/nationwide-ps-framework-5.pdf</a> . Accessed April 21, 2016.	Requirements for interoperability of individually identifiable health information.	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
236	Connecting for Health Work Group on Consumer Access Policies for Networked Personal Health Information. <i>Security and Systems Requirements</i> . New York, NY: Markle Foundation; 2008.	Americans need a 21st century privacy approach allowing protection and sharing of health information to improve health care quality.	IVA	Expert opinion; Policy brief	N/A	N/A	N/A	N/A	N/A

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237	16 CFR §318. Health breach notification rule. US Federal Trade Commission. <a href="https://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/health-breach-notification-rule">https://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/health-breach-notification-rule</a> . Accessed April 21, 2016.	Regulation for prevention of health information breach	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
238	RI.01.03.03: The hospital honors the patient's right to give or withhold informed consent to produce or use recordings, films, or other images of the patient for purposes other than his or her care. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.	Hospital accreditation requirement for informed consent.	IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
239	RI.01.03.01: The hospital honors the patient's right to give or withhold informed consent. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.	Ambulatory accreditation requirement for informed consent	IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
240	The AMA Code of Medical Ethics' opinion on computerized medical records. Virtual Mentor. 2011;13(3):161-162.		IVB	Position statement	N/A	N/A	N/A	N/A	N/A
241	Nursing Informatics: Scope and Standards of Practice. 2nd ed. Silver Spring, MD: American Nurses Association; 2014.		IVA	National practice standards	N/A	N/A	N/A	N/A	N/A
242	RC.01.02.01. Entries in the clinical record are authenticated. In: Comprehensive Accreditation Manual for Ambulatory Care. Oakbrook Terrace, IL: The Joint Commission; 2015.		IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
243	RC.01.04.01: The hospital audits its medical records. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.	Hospital accreditation requirement for medical record audits.	IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
244	Public Law 106-229: Electronic Signatures in Global and National Commerce Act. <a href="https://www.gpo.gov/fdsys/pkg/PLAW-106publ229/content-detail.html">https://www.gpo.gov/fdsys/pkg/PLAW-106publ229/content-detail.html</a> . Accessed April 21, 2016.	Regulatory criteria for electronic signatures.	I: Reg	Federal Regulation	N/A	N/A	N/A	N/A	N/A
245	RC.01.05.01: The hospital retains its medical records. In: Comprehensive Accreditation Manual for Hospitals. Oakbrook Terrace, IL: The Joint Commission; 2015.	Hospital accreditation requirement for medical record retention.	IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
246	RC.01.05.01: The organization retains its clinical records. In: Comprehensive Accreditation Manual for Ambulatory Care. Oakbrook Terrace, IL: The Joint Commission; 2015.	Ambulatory accreditation requirement for medical record retention.	IVA	Accreditation	N/A	N/A	N/A	N/A	N/A
247	Campbell EM, Sittig DF, Guappone KP, Dykstra RH, Ash JS. Overdependence on technology: an unintended adverse consequence of computerized provider order entry. AMIA Annu Symp Proc. 2007: 94-98.	Overdependence on technology emerged as one of nine major types of adverse consequences related to CPOE adoption and use. Careful analysis of these data revealed three themes: 1) system downtime can create chaos when there are insufficient backup systems in place, 2) users have false expectations regarding data accuracy and processing, and 3) some clinicians cannot work efficiently without computerized systems.	IIIB	Qualitative; observation and interview	Hospital clinicians (ie, hospital administrators, physicians, nurses, pharmacists, lab workers, medical records specialists, IT leaders and "others") at 4 hospitals distributed between the mid-west and east coast.			95	
248	Drass R, Free J. Planning for the unknown: maintaining your network infrastructure during a disaster. Health Manag Technol. 2014;35(2):18-20.	Every healthcare organization must create a plan of action for maintaining its network infrastructure during time of crisis such as earthquakes, tornados, and manmade disasters.	VC	Expert opinion	N/A	N/A	N/A	N/A	N/A
249	Rector M. Improving disaster recovery outcomes. Healthcare data must be protected to conform to HIPAA requirements, which active archive supports through the expanded role of tape. Health Manag Technol. 2012;33(3):16-17.	A well planned active archive storage implementation increases access to all stored data, both during and after a disaster. Access to patient care data and healthcare infrastructure data facilitates the recover of critical healthcare operations within a short period.	VB	Organizational experience, case study					

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250	SAFER Guide: High Priority Practices. HealthIT.gov. <a href="http://www.healthit.gov/sites/safer/files/guides/safer_highprioritypractices_sg001_form_0.pdf">http://www.healthit.gov/sites/safer/files/guides/safer_highprioritypractices_sg001_form_0.pdf</a> . Accessed April 20, 2016.	Office of the National Coordinator recommendations for establishing an organizational secure and safe EHR infrastructure.	IA	Federal recommendations for EHR infrastructure					
251	Agrawal A, Glasser AR. Barcode medication. Administration implementation in an acute care hospital and lessons learned. J Healthc Inf Manag. 2009;23(4):24-29.	Bar code medication administration systems (BCMAS) ensure the five "rights" during medication administration. Implementation is a complex process requiring multidisciplinary collaboration and care workflow analysis.	VA	Organizational experience; case report					
252	Amendments, Corrections, and Deletions in the Electronic Health Record Toolkit. Chicago, IL: American Health Information Management Association; 2009.	AHIMA guidelines on making corrections to clinical documentation.	IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
253	Weis JM, Levy PC. Copy, paste, and cloned notes in electronic health records; prevalence, benefits, risks, and best practice recommendations. Chest. 2014;145(3):632-638.	While judicious use of clinical information technology (CIT) can create efficiencies for clinicians, as well as improve the tracking of multiple problems on highly complex patients, indiscriminate use of CIT can result in medical records that are not only confusing and inconsistent but result in situations that threaten patient safety.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
254	Peterson AM. Medical record as a legal document part 1: setting the standards. J Legal Nurse Consult. 2012;23(2):9-17.	As a legal healthcare business document, medical record management must adhere to applicable federal and state regulations and meet minimum professional standards set by accrediting agencies and institutional policies. Healthcare providers are responsible for knowing the regulations and standards affecting their practices.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
255	Medical records. Operating Room Risk Management. 2008;1(Medical Records 3).		IVB						
256	Bredfeldt CE, Awad EB, Joseph K, Snyder MH. Training providers: beyond the basics of electronic health records. BMC Health Serv Res. 2013;13:503.	Ongoing blended learning methodologies used to educate healthcare providers on patient-level information for effective documentation demonstrated improved clinician documentation practices and satisfaction with health information technology.	IIB	Quasi-experimental correlational study	Physicians	EHR training on problem lists, medication lists as effective documentation and chart review.	Training participants vs non-trained participants	36 training participants; 144 non-participants	Effective management of medication and problem lists
257	Sittig DF, Singh H. Rights and responsibilities of users of electronic health records. CMAJ. 2012;184(13):1479-1483.	Ten key issues - unintended access to records, no missing data, ability to override EHR generated interventions, succinct patient summaries, rationale for clinical decision support, safe EHRs, reliable performance measurement, training and assistance, compatibility with clinical workflow, facilitation of communication, collaboration and teamwork - form a set of features, functions and user privileges of electronic health records required by clinicians to deliver high-quality, safe and effective care.	IVB	Expert opinion	N/A	N/A	N/A	N/A	N/A
258	Tahim A, Sabharwal S, Dhokia R, Bajekal R, Kyriacou S. Data protection training improves data handling. Clinical Teacher. 2012;9(6):403-407.	With the expansion of patient data collection and storage, it is important for physicians to maintain an awareness of how to handle such data. Data Protection Training (DPT) is not currently common practice [in the UK].	IIIB	Survey	Physicians			141	% physicians receiving DPT
259	Bruylants M, Paans W, Hediger H, Muller-Staub M. Effects on the quality of the nursing care process through an educational program and the use of electronic nursing documentation. Int J Nurs Knowl. 2013;24(3):163-170.	The long term effect of an initial guided clinical reasoning tool for acquiring skills to use an electronic nursing documentation system is lost without reinforcement of acquired skills.	IIA	Quasi-experimental, secondary analysis of existing data capture	Nurses using the e-doc for 3 years	Guided Clinical Reasoning (GCR) education for EHR documentation	Data samples from same hospital over a three year period	3 samples of data from post intervention groups (2005, 2006, 2007)	"long lasting effect" of GCR education

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260	Clark JS, Delgado VA, Demorsky S, et al. Assess- ing and improving EHR data quality (updated). J AHIMA. 2013;84(3):48-53.	AHIMA guidelines for ensuring the accuracy and quality of captured patient care data.	IVB	Practice guideline; consensus	N/A	N/A	N/A	N/A	N/A
261	Russo R; American Health Information Management Association. Clinical Documentation Improvement. Chicago, IL: AHIMA, American Health Information Management Association; 2010.	Guidelines for clinical documentation integrity	IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
262	Agaku IT, Adisa AO, Ayo-Yusuf OA, Connolly GN. Concern about security and privacy, and perceived control over collection and use of health information are related to withholding of health information from health- care providers. J Am Med Inform Assoc. 2014;21(2):374-378.	The Health Information National Trends Survey (HINTS 4) study to asses patients' concerns and behaviors about security and privacy of their personal health information (PHI) indicates two-thirds of US adults were ceocerned about a breach in personal data security and have wietheld inforamtion form a healthcare professional during 2011-2012.	IIIA	4th wave, 1st cycle national biennial survey	Non-institutionalized US adults aged >=18 yrs.			3959 respondents	Survey response
263	Gajanayake R, Iannella R, Sahama T. Privacy oriented access control for electronic health records. Electronic Journal of Health Informatics. 2014;8(2):e15.	Information accountability can achieve appropriate balance for accountable e-health systems and maintain privacy and security of personal health information.	IIIB	Qualitative; Analysis of accountable e-health systems using information accountability and Australian PHI system.					
264	Berretoni A, Bochantin F, Brown T, et al. HIM functions in healthcare quality and patient safety. J AHIMA. 2011;82(8):42-45.		IVB	Practice guideline	N/A	N/A	N/A	N/A	N/A
265	Hersh W. Copy and paste. AHRQ WebM&M [serial online]. <a href="https://psnet.ahrq.gov/webmm/case/157">https://psnet.ahrq.gov/webmm/case/157</a> . Pub- lished July/August 2007. Accessed April 21, 2016.	EHRs allow easily completion of the "copy and paste" function increasing the risk for patient harm. Clinicians have a responsibility to understand the risks and benefits of the process and to receive necessary education and training to use EHRs appropriately.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
266	Singh H, Ash JS, Sittig DF. Safety Assurance Factors for Electronic Health Record Resilience (SAFER): study protocol. BMC Med Inform Decis Mak. 2013;13:46.	Proactive assessment of patient safety risks increases the resiliency of health care organizations to unanticipated hazards of EHR use.	VA	Expert opinion: Exploratory study for safety tool development	N/A	N/A	N/A	N/A	N/A
267	Clancy CM. Nursing, system design, and health care quality. AORN J. 2009;90(4):581-583.	Humans, by nature, make mistakes; our challenge in health care is to minimize these mistakes so that human error does not become medical error. Recognizing that the complexity of care and system design factors contribute to errors and adverse events, organizations, leaders, and clinicians must use data and evidence to improve the quality and safety of care, even when there are complex challenges.	VA	Expert opinion	N/A	N/A	N/A	N/A	N/A
268	268. SAFER Guide: Organizational Responsibilities. HealthIT.gov. <a href="https://www.healthit.gov/safer/guide/sg002">https://www.healthit.gov/safer/guide/sg002</a> . Accessed April 21, 2016.	Office of the National Coordinator recommendations for establishing an organizational secure and safe EHR infrastructure.	IA	Federal recommendations for EHR infrastructure	N/A	N/A	N/A	N/A	N/A
269	Magrabi F, Ong M-S, Runciman W, Coiera E. An analysis of computer-related patient safety incidents to inform the development of a classification. J Am Med Inform Assoc. 2010;17(6):663-670.	The vast majority of computer-related incidents, although often delaying clinical work and creating rework, did not directly harm patients. This is an important message, as it helps shape research and policy to deal with what is important 'on the ground' as opposed to what might be technically interesting or newsworthy.	IIA	Big data analysis	Patient safety incidents report by public hospisital clinicians to the Australian Advanced Incident Management System (AIMS) between 2003 and 2005.			42616 reports searched; final sample: 123 incidents	

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270	Nunn S. Managing audit trails. J AHIMA. 2009;80(9):44-45.	Legal and compliance needs drive audit trail management, but it is complicated by the challenges that IT departments face in storing these large volumes of data. Collaborating with the information systems team will ensure fully functional audit trail documentation capable of restoring from archival media for the retention times determined by law and organizational tolerance.	VC	Expert opinion					
271	Haugen MB, Herrin B, Slivochka S, Tolley LM, Warner D, Washington L. Rules for handling and maintaining metadata in the EHR. J AHIMA. 2013;84(5):50-54.	Metadata provides the context for the information. Because of this, organizations must determine when and how metadata is preserved and retained, and whether or not it is a part of the official health record.	IVB	AHIMA practice brief	N/A	N/A	N/A	N/A	N/A
272	SAFER Guide: Contingency Planning. HealthIT.gov. <a href="https://www.healthit.gov/safer/guide/sg003">https://www.healthit.gov/safer/guide/sg003</a> . Accessed April 21, 2016.	Office of the National Coordinator recommendations for establishing an organizational secure and safe EHR infrastructure	IA	Federal recommendations for EHR infrastructure	N/A	N/A	N/A	N/A	N/A
273	SAFER Guide: System Interfaces. HealthIT.gov. <a href="https://www.healthit.gov/safer/guide/sg005">https://www.healthit.gov/safer/guide/sg005</a> . Accessed April 21, 2016.	Office of the National Coordinator recommendations for establishing an organizational secure and safe EHR infrastructure.	IA	Federal recommendations for EHR infrastructure	N/A	N/A	N/A	N/A	N/A
274	Zoraster RM, Burkle CM. Disaster documenta- tion for the clinician. Disaster Med Public Health Prep. 2013;7(4):354-360	Medical documentation is not a priority during a disaster, but it will benefit continuity of care, and potentially has an impact on patient outcomes. How best to achieve the most efficient and appropriate medical chart during a disaster scenario is still uncertain, and this topic would gain from further study.	VA	Literature review; clinical recommendations					