REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
1	*Perioperative Nursing: Scope and Standards of Practice.* AORN, Inc: Denver, CO; 2021. https://aorn.org/guidelines/clinical-resources/standards-of-practice [login required]. Accessed February 17, 2022.	Guideline	n/a	n/a	n/a	n/a	AORN standards for perioperative nursing.	IVA
2	*ANA's Principles for Nursing Documentation: Guidance for Registered Nurses.* Silver Spring, MD: American Nurses Association; 2010. http://www.nursingworld.org/~4af4f2/globalassets/docs/ana/ethics/principles-of-nursing-documentation.pdf. Accessed February 17, 2022.	Guideline	n/a	n/a	n/a	n/a	ANA documentation principles.	IVA
3	Edemekong PF, Annamaraju P, Haydel MJ. Health Insurance Portability and Accountability Act. StatPearls. https://www.ncbi.nlm.nih.gov/books/NBK500019/. Updated February 4, 2021. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	HIPAA Act for privacy, security, and protection of patient health data.	n/a
4	PL 104-109 – Health Insurance Portability and Accountability Act of 1996. GovInfo. https://www.govinfo.gov/app/details/PLAW-104publ191. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	HIPAA Act.	n/a
5	Adler-Milstein J, Holmgren AJ, Kralovec P, Worzala C, Searcy T, Patel V. Electronic health record adoption in US hospitals: the emergence of a digital "advanced use" divide. *J Am Med Inform Assoc.* 2017;24(6):1142-1148.	Nonexperimental	3528 responses to AHA annual survey IT supplement	n/a	n/a	advanced use of EHRs and EHR data for performance measurement and patient engagement functions	Resources, IT capabilities, and performance incentives are potentially important drivers for adoption.	IIIB
6	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. *Fed Regist.* 2013;78(17):5565-5702.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding HIPAA modifications.	n/a
7	21st Century Cures Act, HR 6, 114th Cong (2015). Accessed February 17, 2022. Congress.Gov. https://www.congress.gov/bill/114th-congress/house-bill/6.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding 21st Century Cures Act.	n/a
8	Guideline for team communication. In: *Guidelines for Perioperative Practice.* Denver, CO: AORN, Inc; 2022:1155-1186.	Guideline	n/a	n/a	n/a	n/a	AORN guideline for team communication.	IVA
9	Promoting Interoperability Programs. Centers for Medicare & Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms. Updated January 11, 2022. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations on interoperable EHRs.	n/a
10	Medicare and Medicaid Programs; Electronic Health Record Incentive Program—Stage 3 and Modifications to Meaningful Use in 2015 Through 2017; Final Rule. *Fed Regist.* 2015;80(200):62762-62955.	Regulatory	n/a	n/a	n/a	n/a	Federation regulations for EHR meaningful use.	n/a
11	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.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding Electronic Health Record (EHR) certification criteria and the ONC HIT Certification Program.	n/a
12	45 CFR 170: Health information technology standards, implementation specifications, and certification criteria and certification programs for health information technology. Code of Federal Regulations. https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-D/part-170. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding HIT, terminology, and certification programs.	n/a
13	Office of the National Coordinator for Health Information Technology (ONC), Department of Health and Human Services (HHS). 2015 Edition Health Information Technology (Health IT) Certification Criteria, 2015 Edition Base Electronic Health Record (EHR) Definition, and ONC Health IT Certification Program Modifications. Final rule. *Fed Regist.* 2015;80(200):62601-62759.	Regulatory	n/a	n/a	n/a	n/a	Required HIT certification criteria.	n/a
14	*UDI Compliance Initiative Summary.* Scituate, MA: Strategic Marketplace Initiative; 2015.	Expert Opinion	n/a	n/a	n/a	n/a	Information regarding UDI compliance.	VC
15	Castaldi M, McNelis J. Introducing a clinical documentation specialist to improve coding and collectability on a surgical service. *J Healthc Qual.* 2019;41(3):e21-e29.	Organizational Experience	12,000 HCR	n/a	n/a	potential revenue	Standardized language and training resulted in significant revenue gains.	VA
16	Self-Assessment: System Interfaces. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_system_interfaces.pdf. Accessed February 17, 2021.	Regulatory	n/a	n/a	n/a	n/a	System interfaces guide for safe EHR practices.	n/a
17	Cima RR, Dhanorker SR, Ostendorf CL, et al. Using an electronic perioperative documentation tool to identify returns to operating room (ROR) in a tertiary care academic medical center. *Joint Comm J Qual Patient Saf.* 2017;43(3):138-145.	Organizational Experience	5,552 return to OR	n/a	n/a	planned, unrelated, planned returns	Planned versus unplanned returns captured with robust classification system for public reporting and QI efforts.	VA
18	42 CFR 485.638. Conditions of participation: Clinical records. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-485/subpart-F/section-485.638. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding clinical records.	n/a
19	Berretoni A, Bochantin F, Brown T, et al. HIM functions in healthcare quality and patient safety. *J AHIMA.* 2011;82(8):42-45.	Guideline	n/a	n/a	n/a	n/a	AHIMA guidance for health information management.	IVB

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
20	Shekelle P, 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.) AHRQ Publication No. 06-E006. Rockville, MD: Agency for Healthcare Research and Quality; 2006.	Systematic Review	n/a	n/a	n/a	n/a	256 studies found that HIT studies focus on CDS, EMR, and computerized physician order entries that can make health care more safe.	IIA
21	McBride S, Tietze M, Robichaux C, Stokes L, Weber E. Identifying and addressing ethical issues with use of electronic health records. *Online J Issues Nurs.* 2018;23(1):6.	Expert Opinion	n/a	n/a	n/a	n/a	Ethical issues for EHR use.	VB
22	42 CFR 482: Conditions of Participation for Hospitals. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-482. Accessed February 17, 2021.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding hospital conditions for CMS participation.	n/a
23	Foundation of Research and Education of AHIMA. Update: maintaining a legally sound health record—paper and electronic. *J AHIMA.* 2005;76(10):64A-64L.	Consensus	n/a	n/a	n/a	n/a	AHIMA guidance for PIM.	IVB
24	16 CFR 318: Health Breach Notification Rule. Code of Federal Regulations. https://www.ecfr.gov/current/title-16/chapter-I/subchapter-C/part-318. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding health breach notifications.	n/a
25	42 CFR 416: Ambulatory surgical services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-416. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for ASCs.	n/a
26	Clark JS, Delgado VA, Demorsky S, et al. Assessing and improving EHR data quality (updated). *J AHIMA.* 2013;84(3):48-53.	Expert Opinion	n/a	n/a	n/a	n/a	Expert opinion on how to assess and improve EHR data quality.	VB
27	Stages of Promoting Interoperability Programs: First Year Demonstrating Meaningful Use. Centers for Medicare & Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Information for following meaningful use criteria.	n/a
28	Arrowood D, Choate E, Curtis E, et al. Integrity of the healthcare record. Best practices for EHR documentation. *J AHIMA.* 2013;84(8):58-62.	Guideline	n/a	n/a	n/a	n/a	Customizable documentation applications allow for the use of templates and smart phrases to assist with documentation.	IVB
29	Rebello E, Kee S, Kowalski A, Harun N, Guindani M, Goravanchi F. Reduction of incorrect record accessing and charting patient electronic medical records in the perioperative environment. *Health Informatics J.* 2016;22(4):1055-1062.	Nonexperimental	57 incorrect record openings	n/a	n/a	anesthesia time-out and barcoding to open patient health care record	Significant decrease in incorrect record openings.	IIIA
30	Park EJ, McDaniel A, Jung MS. Computerized tailoring of health information. *Comput Inform Nurs.* 2009;27(1):34-43.	Expert Opinion	n/a	n/a	n/a	n/a	An expert opinion of computerizing health information.	VA
31	45 CFR 170.205: Content exchange standards and implementation specifications for exchanging electronic health information. Code of Federal Regulations. https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-D/part-170/subpart-B/section-170.205. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding content exchange.	n/a
32	45 CFR 164.308: Administrative safeguards. Code of Federal Regulations. https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-C/part-164/subpart-C/section-164.308. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding electronic health care information safeguards.	n/a
33	*Nationwide Privacy and Security Framework for Electronic Exchange of Individually Identifiable Health Information.* 2008. Office of the National Coordinator for Health Information Technology. US Department of Health and Human Services. HealthIT.gov. https://www.healthit.gov/sites/default/files/nationwide-ps-framework-5.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding electronic exchange of identifiable health information.	n/a
34	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 healthcare providers. *J Am Med Inform Assoc.* 2014;21(2):374-378.	Qualitative	3,959 responses	n/a	n/a	concerns with health information breaches	Willingness to provide information may increase with increased perception of security of interoperability.	IIIA
35	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;2007:94-98.	Nonexperimental	390 hours of observation and 32 interviews of clinicians	n/a	n/a	3 unintended adverse consequence themes related to overdependence on technology	Overdependence on technology should be addressed with policies related to system downtime, data accuracy, and not a replacement for clinical judgment.	IIIB
36	Self-Assessment: High Priority Practices. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_high_priority_practices.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	SAFER guide regarding high priority practices.	n/a
37	Self-Assessment: Contingency Planning. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_contingency_planning.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Contingency planning guide for safe EHR practices.	n/a
38	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.	Consensus	n/a	n/a	n/a	n/a	A report from the AMIA 2009 Health Policy Meeting regarding unintended consequences of health IT and policy.	IVB

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
39	*Nursing: Scope and Standards of Practice* . Silver Spring, MD: American Nurses Association; 2010. [IVA . Nursing: Scope and Standards of Practice. 3rd ed. American Nurses Association; Silver Spring, MD; 2015.	Guideline	n/a	n/a	n/a	n/a	ANA scope and standards of practice for nurses.	IVA
40	*AORN Syntegrity On-line Companion Guide.* Denver, CO: AORN Syntegrity; 2022.	Guideline	n/a	n/a	n/a	n/a	PNDS update from AORN.	IVA
41	Junttila K, Hupli M, Salanterä S. The use of nursing diagnoses in perioperative documentation. *Int J Nurs Terminol Classif.* 2010;21(2):57-68.	Nonexperimental	250 patient charts	n/a	n/a	Finnish PNDS intraoperative diagnoses	The PNDS was validated in Finnish.	IIIB
42	*Pommier v. ABC Insurance Company, 715 So.2d 1270, 1297-1342 (La.App.3dCir. 1998).*	Regulatory	n/a	n/a	n/a	n/a	Legal case regarding minimal nursing documentation unable to defend against negligence claim.	n/a
43	Braund R, Lawrence CK, Baum L, Kessler B, Vassart M, Coulter C. Quality of electronic records documenting adverse drug reactions within a hospital setting: identification of discrepancies and information completeness. *N Z Med J.* 2019;132(1488):28-37.	Nonexperimental	332 patient EMR, 1200 alerts, 151 patients and 526 unique reaction events	n/a		adverse events	ADR information sharing should be optimized for pharmaceutical care; recommendations need for system with archive function, EMR field for important non-ADR alerts, EMR intolerance v allergy, required user input reaction, national education about reactions / infrastructure changes	IIIB
44	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.	Nonexperimental	90 postoperative days	n/a	n/a	billing information	Additional postoperative documentation is important to valuation of payment and quality documentation.	IIIB
45	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.	Systematic Review	n/a	n/a	n/a	n/a	Chart audit approaches were deficient in the literature.	IIA
46	Weed LL. Medical records that guide and teach. *N Engl J Med.* 1968;278(11):593-600.	Expert Opinion	n/a	n/a	n/a	n/a	Hand-written narrative notes can be unorganized and miss information.	VA
47	Monarch K. Documentation, part 1: Principles for self-protection. Preserve the medical record—and defend yourself. *Am J Nurs.* 2007;107(7):58-60.	Expert Opinion	n/a	n/a	n/a	n/a	Best practices for perioperative nurses' charting.	VB
48	PL 111-148 – Patient Protection and Affordable Care Act, 42 USC 18001. Congress.gov. https://www.congress.gov/111/plaws/publ148/PLAW-111publ148.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Patient Protection and Affordable Care Act regarding immediate access to insurance for uninsured individuals with a preexisting condition.	n/a
49	The AMA Code of Medical Ethics' opinion on computerized medical records. *Virtual Mentor.* 2011;13(3):161-162.	Position Statement	n/a	n/a	n/a	n/a	AMA position statement on EHR.	IVB
50	Hagaman DH, Ehrenfeld JM, Terekhov M, et al. Compliance is contagious: using informatics methods to measure the spread of a documentation standard from a preoperative clinic. *J Perianesth Nurs.* 2018;33(4):436-443.	Case Report	n/a	n/a	n/a	n/a	Standardized format of free-text fields and structured data elements can decrease time to document without increasing the burden of clinic workflow.	VA
51	Thate J, Rossetti SC, McDermott-Levy R, Moriarty H. Identifying best practices in electronic health record documentation to support interprofessional communication for the prevention of central line–associated bloodstream infections. *Am J Infect Control.* 2020;48(2):124-131.	Nonexperimental	10 experts	n/a	n/a	12 information types for decisions	EHR used to support collaboration and interprofessional communication.	IIIB
52	Pahontu R, Will A, Bergh B. Towards communication requirements in the operating room and clinic IT. *Stud Health Technol Inform.* 2015;212:1-8.	Nonexperimental	150 use cases	n/a	n/a	clinical relevance	Ranked importance of 16 clinical communication requirements to develop standardized interoperable integration approach.	IIIC
53	Westra BL, Peterson JJ. Big data and perioperative nursing. *AORN J.* 2016;104(4):286-292.	Expert Opinion	n/a	n/a	n/a	n/a	How big data can optimize safe perioperative nursing care.	VA
54	Hu Z, Simon GJ, Arsoniadis EG, Wang Y, Kwaan MR, Melton GB. Automated detection of postoperative surgical site infections using supervised methods with electronic health record data. *Stud Health Technol Inform.* 2015;216:706-710.	Nonexperimental	3,996 procedures	n/a	n/a	model to detect surgical site infection	ML can predict surgical site infections.	IIIA
55	Van Winkle RA, Champagne MT, Gilman-Mays M, Aucoin J. Operating room delays: meaningful use in electronic health record. *Comput Inform Nurs.* 2016;34(6):247-253.	Organizational Experience	2,23 OR cases	n/a	n/a	ease of use, user interface	Subjective data fields left incomplete related to detailed OR delay information.	VA
56	Murff HJ, FitzHenry F, Matheny ME, et al. Automated identification of postoperative complications within an electronic medical record using natural language processing. *JAMA* . 2011;306(8):848-855.	Nonexperimental	2974 patients	n/a	n/a	surgical complication rate, NL with patient safety indicators	Natural language processing-based searches were more scalable to review EMRs for patients higher at risk for postoperative complications.	IIIA

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
57	Ross MK, Wei W, Ohno-Machado L. "Big data" and the electronic health record. *Yearb Med Inform.* 2014;9(1):97-104.	Expert Opinion	n/a	n/a	n/a	n/a	How EHR and big data can work synergistically.	VB
58	Kirby AM, Kruger B, Jain R, O'Hair DP, Granger BB. Using clinical decision support to improve referral rates in severe symptomatic aortic stenosis: a quality improvement initiative. *Comput Inform Nurs.* 2018;36(11):525-529.	Organizational Experience	n/a	n/a	n/a	n/a	Standard method for EHR practices can facilitate compliance with evidence-based guidelines.	VB
59	*State Operations Manual Appendix L – Guidance for Surveyors: Ambulatory Surgical Centers.* Rev. 200, 02-21-20. Centers for Medicare and Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_l_ambulatory.pdf. Accessed February 18, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding ASC state operations.	n/a
60	Food and Drug Administration Modernization Act of 1997. Congress.gov. https://www.congress.gov/bill/105th-congress/senate-bill/830?r=2. Accessed February 18, 2022.	Regulatory	n/a	n/a	n/a	n/a	1997 FDA guidance regarding medical device tracking.	n/a
61	Scruth EA. Quality nursing documentation in the medical record. *Clin Nurse Spec.* 2014;28(6):312-314.	Literature Review	n/a	n/a	n/a	n/a	A review of quality documentation.	VB
62	42 CFR 482.24. Condition of participation: Medical record services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-482/subpart-C/section-482.24. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding medical record services.	n/a
63	42 CFR 482.51. Condition of participation: Surgical services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-482/subpart-D/section-482.51. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for surgical services.	n/a
64	Guideline for specimen management. In: *Guidelines for Perioperative Practice.* Denver, CO: AORN, Inc; 2022:971-1016.	Guideline	n/a	n/a	n/a	n/a	AORN Guideline for specimen documentation.	IVA
65	42 CFR 416.42: Condition for coverage. Surgical services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-416/subpart-C/section-416.42. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for surgical services.	n/a
67	21 CFR 821: Medical device tracking requirements. Code of Federal Regulations. https://www.ecfr.gov/current/title-21/chapter-I/subchapter-H/part-821. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for medical device tracking requirements.	n/a
67	Medical Device Tracking: Guidance for Industry and FDA Staff. US Food and Drug Administration. March 2014. https://www.fda.gov/regulatory-information/search-fda-guidance-documents/medical-device-tracking. Accessed February 18, 2022.	Regulatory	n/a	n/a	n/a	n/a	FDA guidance for medical device tracking.	n/a
68	ECRI Institute. Sales representatives and other outsiders in the OR. *Operating Room Risk Management (Quality Assurance/Risk Management)*. 2013;2(7):1-12	Expert Opinion	n/a	n/a	n/a	n/a	Discussion of managing non-staff personnel in the OR.	VB
69	ECRI Institute. Bar-coded medication administration systems. *Operating Room Risk Management. (Quality Assurance/ Risk Management).* 2013;2(9.1):1-10.	Guideline	n/a	n/a	n/a	n/a	ECRI guidelines for bar-coded medication administration.	IVB
70	42 CFR 416.47. Condition for coverage: Medical records. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-416/subpart-C/section-416.47. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for medical record maintenance.	n/a
71	Centers for Medicare & Medicaid Services (CMS), HHS. 42 CFR Parts 412 and 495; electronic health record incentive program—stage 2. Final rule. *Fed Regist.* 2012;77(171):53967-54162.	Regulatory	n/a	n/a	n/a	n/a	Regulations regarding EHR incentive program.	n/a
72	42 CFR 482.23. Condition of participation: Nursing services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-482/subpart-C/section-482.23. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations for nursing services.	n/a
73	21 CFR 11: Electronic records; electronic signatures. Code of Federal Regulations. https://www.ecfr.gov/current/title-21/chapter-I/subchapter-A/part-11. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding electronic signatures.	n/a
74	Electronic Signatures in Global and National Commerce Act (E-Sign Act). National Credit Union Association. https://www.ncua.gov/regulation-supervision/manuals-guides/federal-consumer-financial-protection-guide/compliance-management/deposit-regulations/electronic-signatures-global-and-national-commerce-act-e-sign-act. Accessed February 18, 2022.	Regulatory	n/a	n/a	n/a	n/a	Law regarding electronic signatures.	n/a
75	Bryant G, DeVault K, Ericson C, et al. Guidance for clinical documentation improvement programs. *J AHIMA.* 2010;81(5):45-50.	Guideline	n/a	n/a	n/a	n/a	AHIMA guidance to develop clinical documentation improvement programs.	IVB
76	Department of Veterans Affairs. Records Control Schedule 10-1. Washington, DC: Veterans Health Ad…	Regulatory	n/a	n/a	n/a	n/a	Veterans Health Administration health record requirements.	n/a
77	Sittig DF, Singh H. Rights and responsibilities of users of electronic health records. *CMAJ.* 2012;184(13):1479-1483.	Expert Opinion	n/a	n/a	n/a	n/a	While there are rights to documenting safe and efficiently, there are corresponding responsibilities of healthcare providers.	VB
78	Ford EW, Silvera GA, Kazley AS, Diana ML, Huerta TR. Assessing the relationship between patient safety culture and EHR strategy. *Int J Health Care Qual Assur*. 2016;29(6):614-627	Nonexperimental	88,000 responses to AHRQ hospital survey on patient safety culture	n/a	n/a	EMR adoption, safety culture	Customized EHR associated with low-error rates,	IIIB

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
79	Colligan L, Potts HWW, Finn CT, Sinkin RA. Cognitive workload changes for nurses transitioning from a legacy system with paper documentation to a commercial electronic health record. *Int J Med Inf.* 2015;84(7):469-476.	Quasi-experimental	74 NICU and Ward nurses	EHR system implementation	baseline charting activities	computer attitude and skill scores with cognitive workload	Significant increase in cognitive workload at first and fifth shirt; significant and predictable decrease with time.	IIB
80	Potter P, Wolf L, Boxerman S, et al. An analysis of nurses' cognitive work: a new perspective for understanding medical errors. In: *Advances in Patient Safety.* Vol 1. Rockville, MD: Agency for Healthcare Research and Quality; 2005:39-51.	Nonexperimental	3 nurses	n/a	n/a	time and physical activities of nurses and workflow interventions; qualitative interviews	Nurses' cognitive shifts occurred for patients' needs, nurses' organizational style, and environmental demands (ie, interruptions).	IIIC
81	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.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding documentation requirements.	n/a
82	Ay F, Polat Ş. The belief and opinions of nurses on the electronic patient record system. *Int J Caring Sci.* 2014;7(1):258-268.	Qualitative	601 nurses in Istanbul	n/a	n/a	opinions and beliefs about EHR system	Nurses were positive about the EHR system, noting that improvements should be made. Age and duration in their position affected their opinions.	IIIB
83	Asaro PV, Boxerman SB. Effects of computerized provider order entry and nursing documentation on workflow. *Acad Emerg Med.* 2008;15(10):908-915.	Quasi-experimental	13 nurses	EDIS electronic ED information system	baseline	time documenting, direct care, care planning	Time spent documentation significantly increased though care planning significantly decreased for nurses.	IIB
84	Amarasingham R, Plantinga L, Diener-West M, Gaskin DJ, Powe NR. Clinical information technologies and inpatient outcomes: a multiple hospital study. *Arch Intern Med.* 2009;169(2):108-114.	Quasi-experimental	167,233 patients over 50 years old	automated notes, order entry, clinical decision support	no technology support	Clinical Information Technology Assessment Tool	Higher scores on test results, order entry, and decision support associated with lower costs for all hospital admissions.	IIB
85	ANA Position Statement: Electronic Health Record. December 11, 2009. American Nurses Association. https://www.nursingworld.org/practice-policy/nursing-excellence/official-position-statements/id/electronic-health-record/. Accessed February 18, 2022.	Position Statement	n/a	n/a	n/a	n/a	ANA position statement on the EHR.	IVA
86	Ley B, Rijal KR, Marfurt J, et al. Analysis of erroneous data entries in paper based and electronic data collection. *BMC Res Notes.* 2019;12(1):537.	Nonexperimental	358 HCRs	n/a	n/a	discrepancies in HCR	A majority of discrepancies were categorical missing entries, significantly twice as many in paper documentation than EMR.	IIIA
87	Tan M, Lipman S, Lee H, Sie L, Carvalho B. Evaluation of electronic medical records on nurses' time allocation during cesarean delivery. *J Patient Saf.* 2019;15(4):e82-e85.	Nonexperimental	20 cesarean delivery RN circulators	n/a	n/a	observed, perceived, and desired time spent on EMR during cesarean deliveries	Nurses spent about 40% of the intraoperative time on the EMR, but perceived that time to be 55%. They desired the time to be cut in half (22%).	IIIB
88	Carney TJ, Kong AY. Leveraging health informatics to foster a smart systems response to health disparities and health equity challenges. *J Biomed Inform.* 2017;68:184-189.	Literature Review	n/a	n/a	n/a	n/a	HIT can individualize patient education.	VB
89	Donald C, Ehrenfeld JM. The opportunity for medical systems to reduce health disparities among lesbian, gay, bisexual, transgender and intersex patients. *J Med Syst.* 2015;39(11):178.	Expert Opinion	n/a	n/a	n/a	n/a	SO/GI data collection by WPATH and Fenway Institute to guide EMR questions	VA
90	Bosse JD, Leblanc RG, Jackman K, Bjarnadottir RI. Benefits of implementing and improving collection of sexual orientation and gender identity data in electronic health records. *Comput Inform Nurs.* 2018;36(6):267-274.	Expert Opinion	n/a	n/a	n/a	n/a	SOS - systematically collecting SO (sexual orientation)/GI (gender identity) data to improve LGBT health outcomes, NI (nurse informaticists) improve capacity of EHR to doc data - EBP providers, barriers, QOS (quality of service), access, pt satisfaction for disparities of healthcare - policy change	VA
91	42 CFR 416.46. Condition for coverage: Nursing services. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-B/part-416/subpart-C/section-416.46. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding nursing services.	n/a
92	Self-Assessment: Clinician Communication. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_clinician_communication.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Clinician communication guide for safe EHR practices.	n/a
93	Self-Assessment: Computerized Provider Order Entry with Decision Support. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_cpoe.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Computerized provider order entry with CDS guide for safe EHR practices.	n/a
94	Self-Assessment: Patient Identification. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_patient_identification.pdf. Accessed February 17, 2022	Regulatory	n/a	n/a	n/a	n/a	Patient identification guide for safe EHR practices.	n/a

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
95	Self-Assessment: System Configuration. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_system_configuration.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	System configuration guide for safe EHR practices.	n/a
96	Self-Assessment: Organizational Responsibilities. The Office of the National Coordinator for Health Information Technology. https://www.healthit.gov/sites/default/files/safer/guides/safer_organizational_responsibilities.pdf. Accessed February 17, 2022.	Regulatory	n/a	n/a	n/a	n/a	Organizational responsibility guide for safe EHR practices.	n/a
97	Driving Quality and Performance Measurement – A Foundation for Clinical Decision Support. A Consensus Report. December 2010. National Quality Forum. https://www.qualityforum.org/Publications/2010/12/Driving_Quality_and_Performance_Measurement_-_A_Foundation_for_Clinical_Decision_Support.aspx. Accessed February 18, 2022.	Consensus	n/a	n/a	n/a	n/a	Consensus by the NQF regarding CDS.	IVB
98	*Transforming Health Care Through Big Data: Strategies for Leveraging Big Data in the Health Care Industry.* New York, NY: Institute for Health Technology Transformation; 2013.	Expert Opinion	n/a	n/a	n/a	n/a	Opinion regarding big data use in healthcare.	VB
99	Dykes PC, DaDamio RR, Goldsmith D, Kim HE, Ohashi K, Saba VK. Leveraging standards to support patient-centric interdisciplinary plans of care. *AMIA Annu Symp Proc.* 2011;2011:356-363.	Nonexperimental	175 CCC core intervention concepts	n/a	n/a	SNOMED-CT interoperability; meaningful use quality measures	Model suggested for interoperable patient-centered care plans.	IIIB
100	Stogryn S, Hardy KM, Abou-Setta AM, Clouston KM, Metcalfe J, Vergis AS. Advancement in the quality of operative documentation: a systematic review and meta-analysis of synoptic versus narrative operative reporting. *Am J Surg.* 2019;218(3):624-630.	Systematic Review w/ Meta-Analysis	n/a	n/a	n/a	n/a	16 studies found synoptic reports were significantly more likely to have required elements of operative reports than narrative reports.	IIIA
101	Häyrinen K, Lammintakanen J, Saranto K. Evaluation of electronic nursing documentation—nursing process model and standardized terminologies as keys to visible and transparent nursing. *Int J Med Inform.* 2010;79(8):554-564.	Nonexperimental	54 patients, 80 documentation	n/a	n/a	nursing data collected from EHR system	Standardized terminology promotes structure for electronic nursing documentation.	IIIB
102	Sengstack PP, Adrian B, Boyd DL, et al. The Six Domains of Burden: *A Conceptual Framework to Ad*	Expert Opinion	n/a	n/a	n/a	n/a	Documentation burden domains.	VA
103	42 CFR 495. Standards for the Electronic Health Record Technology Incentive Program. Code of Federal Regulations. https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-495. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding HIT incentive program.	n/a
104	Kim J, Macieira TGR, Meyer SL, et al. Towards implementing SNOMED CT in nursing practice: a scoping review. *Int J Med Inform.* 2020;134:104035.	Systematic Review	n/a	n/a	n/a	n/a	29 studies mapped standardized or local nursing terms; no indication SNOMED used in nursing practice; recommend widespread use to evaluate nursing impact on patient outcomes.	IIIC
105	*CMS Measures Management System Blueprint.* Version 17.0 ed. Baltimore, MD: Centers for Medicare & Medicaid Services; 2021. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/MMS-Blueprint. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding EHR blueprints.	n/a
106	Lundberg CB, Brokel JM, Bulechek GM, et al. Selecting a standardized terminology for the electronic health record that reveals the impact of nursing on patient care. *Online J Nurs Inform.* 2008;12(2).	Consensus	n/a	n/a	n/a	n/a	Consensus on standardized terminology in EHR.	IVA
107	Institute of Medicine (US) Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century.* Washington, DC: National Academies Press; 2001.	Guideline	n/a	n/a	n/a	n/a	IOM guidance on transitioning to a 21st century health system.	IVA
108	Westra BL, Bauman R, Delaney CW, Lundberg CB, Petersen C. Validation of concept mapping between PNDS and SNOMED CT. *AORN J.* 2008;87(6):1217-1229.	Expert Opinion	n/a	n/a	n/a	n/a	PNDS and SNOMED-CT matching.	VA
109	Fernández-Alemán JL, Señor IC, Lozoya PÁO, Toval A. Security and privacy in electronic health records: a systematic literature review. *J Biomed Inform.* 2013;46(3):541-562.	Systematic Review	n/a	n/a	n/a	n/a	49 articles found inconsistently EHR privacy standards that could lead to compromised data.	IIB
110	45 CFR 164: Security and Privacy. Code of Federal Regulations. https://www.ecfr.gov/current/title-45/subtitle-A/subchapter-C/part-164. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Regulations regarding security and privacy of health information.	n/a
111	Zhang J, Walji M. *Better EHR: Usability, Workflow and Cognitive Support in Electronic Health Records.* Houston, TX: National Center for Cognitive Informatics and Decision Making in Healthcare; 2014.	Position Statement	n/a	n/a	n/a	n/a	Position statement regarding cognitive workflow using EHR systems.	IVA
112	Institute of Medicine (US) Committee on the Work Environment for Nurses and Patient Safety; Ann Page, eds. *Keeping Patients Safe: Transforming the Work Environment of Nurses.* Washington, DC: National Academies Press; 2004.	Position Statement	n/a	n/a	n/a	n/a	IOM position statement for the nursing work environment.	IVA
113	Capuano T, Bokovoy J, Halkins D, Hitchings K. Work flow analysis: eliminating non-value-added work. *J Nurs Adm.* 2004;34(5):246-256.	Qualitative	7,488 observations	n/a	n/a	direct and indirect care activities	Significant reduction in time required for direct and indirect care activities (ie, documentation).	IIIA
114	Beyea SC. Standardized language—making nursing practice count. *AORN J.* 1999;70(5):831-838.	Expert Opinion	n/a	n/a	n/a	n/a	An expert opinion of standardizing language in perioperative documentation.	VA

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
115	Tastan S, Linch GCF, Keenan GM, et al. Evidence for the existing American Nurses Association–recognized standardized nursing terminologies: a systematic review. *Int J Nurs Stud.* 2014;51(8):1160-1170.	Systematic Review	n/a	n/a	n/a	n/a	PNDS of nursing terminologies had the least amount of studies.	IIIA
116	Lavin MA, Harper E, Barr N. Health information technology, patient safety, and professional nursing care documentation in acute care settings. *Online J Issues Nurs.* 2015;20(2):6.	Expert Opinion	n/a	n/a	n/a	n/a	Nurses can improve their own documentation and informatics skills to contribute to their teams.	VA
117	Classen D, Li M, Miller S, Ladner D. An electronic health record-based real-time analytics program for patient safety surveillance and improvement. Health Aff (Millwood). 2018;37(11):1805-1812.	Nonexperimental	8657 Health IT Safety Measures test results	n/a	n/a	EHR identify medication errors - overall test score, type of decision support category level, EHR vendor level	variation in safety performance, some EHR had significantly higher safety scores, safety risks persists need to continually evaluate systems with operational testing	IIIB
117	Classen D, Li M, Miller S, Ladner D. An electronic health record-based real-time analytics program for patient safety surveillance and improvement. *Health Aff (Millwood).* 2018;37(11):1805-1812.	Organizational Experience	147,503 inpatient admissions	n/a	n/a	PSAM - patient safety active management system	patient safety organization, real-time patient safety surveillance and improvement - links in adverse events and safety predictive scores, which can predict adverse events, mortality, readmissions; incentives and other issues will determine its adoption	VB
118	Bell K. Public policy and health informatics. *Semin Oncol Nurs.* 2018;34(2):184-187.	Expert Opinion	n/a	n/a	n/a	n/a	HIT can benefit transparency between facility and insurance facilities.	VB
119	Shear T, Deshur M, Avram MJ, et al. Procedural timeout compliance is improved with real-time clinical decision support. *J Patient Saf* . 2018;14(3):148-152.	Nonexperimental	300 time outs	n/a	n/a	compliance with checklist	CDS on the flight board checklist encouraged compliance the most.	IIIA
120	Revisions to the Hospital Interpretive Guidelines for Informed Consent (Ref: S&C-07-17). April 13, 2007. Centers for Medicare & Medicaid Services. https://www.cms.gov/medicare/provider-enrollment-and-certification/surveycertificationgeninfo/downloads/scletter07-17.pdf. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding informed consent.	n/a
121	Code of Medical Ethics Opinion 2.1.1. American Medical Association. https://www.ama-assn.org/delivering-care/ethics/informed-consent. Accessed February 21, 2021.	Consensus	n/a	n/a	n/a	n/a	AMA opinion regarding informed consent ethics.	IVB
122	Sudore RL, Landefeld CS, Williams BA, Barnes DE, Lindquist K, Schillinger D. Use of a modified informed consent process among vulnerable patients: a descriptive study. *J Gen Intern Med* . 2006;21(8):867-873.	Quasi-experimental	204 adults over 50 years old	modified informed consent process	n/a	comprehension test	3 times of teach-to-goal strategy and 6th grade-reading level consents were able to reach 98% comprehension; risk factors included lower literacy and minority status.	IIB
123	Hallock JL, Rios R, Handa VL. Patient satisfaction and informed consent for surgery. *Am J Obstet Gynecol.* 2017;217(2):181.e1-181.e7.	Qualitative	150 female patients	n/a	n/a	satisfaction with decision to undergo urogynecological procedure	Higher knowledge of consent significantly correlated with satisfaction.	IIIB
124	Grauberger J, Kerezoudis P, Choudhry AJ, et al. Allegations of failure to obtain informed consent in spinal surgery medical malpractice claims. *JAMA Surg.* 2017;152(6):e170544.	Nonexperimental	171 spinal procedures	n/a	n/a	malpractice consent allegations in spinal procedure informed consents	Allegations significantly associated with less severe patient injuries.	IIIA
125	Convie LJ, Carson E, McCusker D, et al. The patient and clinician experience of informed consent for surgery: a systematic review of the qualitative evidence. *BMC Med Ethics.* 2020;21(1):58.	Systematic Review	n/a	n/a	n/a	n/a	Patient and provider experience with informed consent.	IIIA
126	Gabay G, Bokek-Cohen Y. Infringement of the right to surgical informed consent: negligent disclosure and its impact on patient trust in surgeons at public general hospitals—the voice of the patient. *BMC Med Ethics* . 2019;20(1):77.	Qualitative	12 Israeli patients	n/a	n/a	self-reported capacity, autonomy, disclosure of informed consent process	Include patient perception of the informed consent process using communication skills.	IIIB
127	Ankuda CK, Block SD, Cooper Z, et al. Measuring critical deficits in shared decision making before elective surgery. *Patient Educ Couns.* 2014;94(3):328-333.	Nonexperimental	1034 patients	n/a	n/a	deficits in informed consent decision-making	Critical, important, and concerning deficits were found, related to ESL, education, and anxiety-at risk patients.	IIIB
128	*Code of Ethics for Nurses with Interpretive Statements.* Silver Spring, MD: American Nurses Association; 2015.	Position Statement	n/a	n/a	n/a	n/a	ANA Code of Nursing Ethics.	IVA
129	Lunt H, Connor S, Skinner H, Brogden G. Electronic informed consent: the need to redesign the consent process for the digital age. *Intern Med J.* 2019;49(7):923-929.	Expert Opinion	n/a	n/a	n/a	n/a	Differences between paper and electronic consents and stages to migrate into eConsenting.	VB

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
130	Standing Orders in Hospitals – Revisions to S&C Memoranda. Centers for Medicare & Medicaid Services. October 24, 2008. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Policy-and-Memos-to-States-and-Regions-Items/CMS1216415. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	CMS information regarding standing orders.	n/a
131	42 CFR §416.50. Condition for coverage: patient rights. Centers for Medicare & Medicaid Services. US Department of Health and Human Services. https://www.gpo.gov/fdsys/granule/CFR-2011-title42-vol3/CFR-2011-title42-vol3-sec416-50. Accessed April 21, 2016.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding patient rights.	n/a
132	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.	Quasi-experimental	84 HCR	preprinted anesthesia packets	standard care	documentation compliance	Preprinted packets can increase compliance with consent and sedation monitoring forms.	IIB
133	Dawson A, Orsini MJ, Cooper MR, Wollenburg K. Medication safety—reliability of preference cards. *AORN J*. 2005;82(3):399-407.	Quasi-experimental	392 preference cards; 22 decision points	FEMA analysis scores	previous preference cards	12 identified failure modes	Preference card medications should be checked by surgeon and confirmed for each case and medication.	IIB
134	Cole LM. Documenting to reduce medication errors. *OR Nurse*. 2008;July/August:17-19.	Literature Review	n/a	n/a	n/a	n/a	Review of reducing medication errors through documentation of each step of administration.	VC
135	Brunetti L, Santell JP, Hicks RW. The impact of abbreviations on patient safety. *Jt Comm J Qual Patient Saf*. 2007;33(9):576-583.	Nonexperimental	18,153 abbreviation-associated medication errors	n/a	n/a	level of harm, timing, personnel, abbreviation	Peer pressure and support for policy could reduce desire to use abbreviations that are unsafe.	IIIA
136	Straube BM. Letter to Dr David Tayloe. Office of Clinical Standards and Quality. Centers for Medicare & Medicaid Services. October 12, 2010.	Expert Opinion	n/a	n/a	n/a	n/a		VB
137	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.	Nonexperimental	21 disciplinary cases	n/a	n/a	instrument to submit and evaluate errors	Taxonomy of errors developed to facilitate change.	IIIB
138	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.	Expert Opinion	n/a	n/a	n/a	n/a	Using technology tools (eg, copy, paste, cloned notes) can benefit patient care but can put providers at risk if integrity is not maintained in EMR documentation practices.	VA
139	Amendments, Corrections, and Deletions in the Electronic Health Record Toolkit. American Health Information Management Association. https://library.ahima.org/doc?oid=93657#.YhPFW4rMI2w [Login required].	Position Statement	n/a	n/a	n/a	n/a	AHIMA guide for amendments, corrections, and deletions.	IVB
140	Dean SM. EHR copy and paste and patient safety. January 1, 2018. Agency for Healthcare Research and Quality. https://psnet.ahrq.gov/perspective/ehr-copy-and-paste-and-patient-safety. Accessed February 21, 2022.	Expert Opinion	n/a	n/a	n/a	n/a	Information regarding copy and paste EHR safe practices.	VA
141	ECRI Institute. Medical records. *Operating Room Risk Management (Medical Records)*. 2008;1(3).	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding medical records.	n/a
142	Mitchell J. Electronic documentation: assessment of newly graduated nurses' competency and confidence levels. *Online J Nurs Inform*. 2015;19(2).	Nonexperimental	64 ED new hires	EHR documentation class	pre test	confidence and self-evaluation questionnaire	New nurse would benefit from extensive practice and discussion of electronic documentation during their orientation.	IIIB
143	Shipman JP, Lake EW, Van Der Volgen J, Doman D. Provider documentation of patient education: a lean investigation. *J Med Libr Assoc*. 2016;104(2):154-158.	Nonexperimental	38 patient-provide interactions	n/a	n/a	MU patient education requirements	individual preferences, gaps in available resources, technical access barriers	IIIB
144	Bruylands M, Paans W, Hediger H, Müller-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.	Quasi-experimental	108 nursing EMR	e-EMR	standard care	quality of nursing process documentation	E-EMR increased accuracy of diagnoses and intervention effectiveness, but waned after 3 years.	IIA
145	Hübner U, Shaw T, Thye J, et al. Technology Informatics Guiding Education Reform - TIGER. *Methods Inf Med*. 2018;57(S 01):e30-e42	Qualitative	43 experts	n/a	n/a	relevance of TIGER core competencies	Not all domains by experts were confirmed through case studies; 24 competencies should also include consumer health informatics.	IIIA
146	Classen D, Li M, Miller S, Ladner D. An electronic health record-based real-time analytics program for patient safety surveillance and improvement. *Health Aff (Millwood)*. 2018;37(11):1805-1812.	Nonexperimental	8657 Health IT Safety Measures test results	n/a	n/a	EHR identify medication errors - overall test score, type of decision support category level, EHR vendor level	variation in safety performance, some EHR had significantly higher safety scores, safety risks persists need to continually evaluate systems with operational testing	IIIB
147	*Lama v. Borras*, 1994 16 F.3d 473 (United States Court of Appeals, First Circuit, February 25, 1994).	Regulatory	n/a	n/a	n/a	n/a	Legal case regarding charting by exception of the nurse, unable to defend against infection that may have been caught with appropriate dressing changes.	n/a

AORN
SAFE SURGERY TOGETHER

REF #	CITATION	EVIDENCE TYPE	SAMPLE SIZE/ POPULATION	INTERVENTION(S)	CONTROL/ COMPARISON	OUTCOME MEASURE(S)	CONCLUSION(S)	CONSENSUS SCORE
148	Murphy EK. Charting by exception. *AORN J.* 2003;78(5):821-823.	Expert Opinion	n/a	n/a	n/a	n/a	Description of charting by exception in perioperative EMR.	VA
149	Magrabi F, Ong MS, 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.	Nonexperimental	42,616 patient safety incidences	n/a	n/a	32 computer-use problems	A majority of human-computer interaction problems were not associated with harm; evidence-based design will increase safety entry and retrieval of clinical information.	IIIB
150	Security Standards: Administrative Safeguards. HIPAA Security Series. Vol 2(2). Published May 2005. Revised March 2007. US Department of Health & Human Services. https://www.hhs.gov/sites/default/files/ocr/privacy/hipaa/administrative/securityrule/adminsafeguards.pdf. Accessed February 21, 2022.	Regulatory	n/a	n/a	n/a	n/a	Federal regulations regarding administrative safeguards.	n/a
151	Nunn S. Managing audit trails. *J AHIMA.* 2009;80(9):44-45.	Expert Opinion	n/a	n/a	n/a	n/a	AHIMA regarding audit trail management.	VC
152	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.	Guideline	n/a	n/a	n/a	n/a	AHIMA guidance for health metadata management.	IVB
153	Gabriel RA, Waterman RS, Kim J, Ohno-Machado L. A predictive model for extended postanesthesia care unit length of stay in outpatient surgeries. *Anesth Analg.* 2017;124(5):1529-1536.	Nonexperimental	4151 patients at one facility	n/a	n/a	model to predict prolonged PACU length of stay	Morbid obesity, hypertension, surgical specialty, primary anesthesia type, and scheduled case duration were predictor variables for prolonged PACU length of stay.	IIIB
154	Bredfeldt CE, Awad EB, Joseph K, Snyder MH. Training providers: beyond the basics of electronic health records. *BMC Health Serv Res.* 2013;13:503.	Quasi-experimental	232 total participants	one or both documentation courses	no participation	use of problem and medication list	Use of medication list significantly increased with at least one course.	IIB
155	State Operations Manual Appendix A – Survey Protocol, Regulations and Interpretive Guidelines for Hospitals. Rev 200, 02-21-20. Centers for Medicare and Medicaid Services. https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_a_hospitals.pdf. Accessed February 18, 2022.	Regulatory	n/a	n/a	n/a	n/a	OR register requirements.	n/a

AORN
SAFE SURGERY TOGETHER