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Medical Device Reliability and Associated Areas - B.S. Dhillon 2000-03-29
Although Reliability Engineering can trace its roots back to World War II, its application to medical devices is relatively recent, and its treatment in the published literature has been quite limited. With the medical device industry among the fastest growing segments of the US economy, it is vital that the engineering, biomedical, manufacturing, and design communities have up-to-date information on current developments, tools, and techniques. Medical Device Reliability and Associated Areas fills this need with broad yet detailed coverage of the field. It addresses a variety of topics related - directly and indirectly - to reliability, including human error in health care systems and software quality assurance. With emphasis on concepts rather than mathematical rigor, a multitude of examples, exercises, tables, and references, this is one resource that everyone connected to the medical device industry must have.
Safe Management of Wastes from Health-care Activities - A. Prüss 1999

Health Insurance and Managed Care - Peter R. Kongstvedt 2019-02-14
Health Insurance and Managed Care: What They Are and How They Work is a concise introduction to the workings of health insurance and managed care within the American health care system. Written in clear and accessible language, this text offers an historical overview of managed care before walking the reader through the organizational structures, concepts, and practices of the health insurance and managed care industry. The Fifth Edition is a thorough update that addresses the current status of The Patient Protection and Affordable Care Act (ACA), including political pressures that have been partially successful in implementing changes. This new edition also explores the changes in provider payment models and medical management methodologies that can affect managed care plans and health insurer.
The Future of Nursing - Institute of Medicine 2011-02-08
The Future of Nursing explores how nurses' roles, responsibilities, and education should change significantly to meet the increased demand for care that will be created by health care reform and to advance improvements in America's increasingly complex health system. At more than 3 million in number, nurses make up the single largest segment of

the health care work force. They also spend the greatest amount of time in delivering patient care as a profession. Nurses therefore have valuable insights and unique abilities to contribute as partners with other health care professionals in improving the quality and safety of care as envisioned in the Affordable Care Act (ACA) enacted this year. Nurses should be fully engaged with other health professionals and assume leadership roles in redesigning care in the United States. To ensure its members are well-prepared, the profession should institute residency training for nurses, increase the percentage of nurses who attain a bachelor's degree to 80 percent by 2020, and double the number who pursue doctorates. Furthermore, regulatory and institutional obstacles -- including limits on nurses' scope of practice -- should be removed so that the health system can reap the full benefit of nurses' training, skills, and knowledge in patient care. In this book, the Institute of Medicine makes recommendations for an action-oriented blueprint for the future of nursing.

Clinical Engineering - Roberto Miniati 2015-12-23

Clinical Systems Engineering: New Challenges for Future Healthcare covers the critical issues relating to the risk management and design of new technologies in the healthcare sector. It is a comprehensive summary of the advances in clinical engineering over the past 40 years, presenting guidance on compliance and safety for hospitals and engineering teams. This contributed book contains chapters from international experts, who provide their solutions, experiences, and the successful methodologies they have applied to solve common problems in the area of healthcare technology. Topics include compliance with the European Directive on Medical Devices 93/42/EEC, European Norms EN 60601-1-6, EN 62366, and the American Standards ANSI/AAMI HE75: 2009. Content coverage includes decision support systems, clinical complex systems, and human factor engineering. Examples are fully supported with case studies, and global perspective is maintained throughout. This book is ideal for clinical engineers, biomedical engineers, hospital administrators and medical technology manufacturers. Presents clinical systems engineering in a way that will help users answer many questions relating to clinical systems engineering and its relationship to future healthcare needs Explains how to assess new healthcare technologies and what are the most critical issues in their management Provides information on how to carry out risk analysis for new technological systems or medical software Contains tactics on how to improve the quality and usability of medical devices

Medical Equipment Maintenance - Binseng Wang 2022-05-31

In addition to being essential for safe and effective patient care, medical equipment also has significant impact on the income and, thus, vitality of healthcare organizations. For this reason, its maintenance and management requires careful supervision by healthcare administrators, many of whom may not have the technical background to understand all of the relevant factors. This book presents the basic elements of medical equipment maintenance and management required of healthcare leaders responsible for managing or overseeing this function. It will enable these individuals to understand their professional responsibilities, as well as what they should expect from their supervised staff and how to measure and benchmark staff performance against equivalent performance levels at similar organizations. The book opens with a foundational summary of the laws, regulations, codes, and standards that are applicable to the maintenance and management of medical equipment in healthcare organizations. Next, the core functions of the team responsible for maintenance and management are described in sufficient detail for managers and overseers. Then the methods and measures for determining the effectiveness and efficiency of equipment maintenance and management are presented to allow performance management and benchmarking comparisons. The challenges and opportunities of managing healthcare organizations of different sizes, acuity levels, and geographical locations are discussed. Extensive bibliographic sources and material for further study are provided to assist students and healthcare leaders interested in acquiring more detailed knowledge. Table of Contents: Introduction / Regulatory Framework / Core Functions of Medical Equipment Maintenance and Management / CE Department Management / Performance Management / Discussion and Conclusions

Concurrent Engineering in the 21st Century - Josip Stjepandić 2015-01-30

Presenting the gradual evolution of the concept of Concurrent Engineering (CE), and the technical, social methods and tools that have been developed, including the many theoretical and practical challenges that still exist, this book serves to summarize the achievements and current challenges of CE and will give readers a comprehensive picture of CE as researched and practiced in different regions of the world. Featuring in-depth analysis of complex real-life applications and experiences, this book demonstrates that Concurrent Engineering is used widely in many industries and that the same basic engineering principles can also be applied to new, emerging fields like sustainable mobility. Designed to serve as a valuable reference to industry experts, managers, students, researchers, and software developers, this book is intended to serve as both an introduction to development and as an analysis of the novel approaches and techniques of CE, as well as being a compact reference for more experienced readers.

FDA Regulation of Medical Devices - Judith A. Johnson 2012-07-06

On June 20, 2012, the House of Representatives passed, by voice vote and under suspension of the rules, S. 3187 (EAH), the Food and Drug Administration Safety and Innovation Act, as amended. This bill would reauthorize the FDA prescription drug and medical device user fee programs (which would otherwise expire on September 30, 2012), create new user fee programs for generic and biosimilar drug approvals, and make other revisions to other FDA drug and device approval processes. It reflects bicameral compromise on earlier versions of the bill (S. 3187 [ES], which passed the Senate on May 24, 2012, and H.R. 5651 [EH], which passed the House on May 30, 2012). The following CRS reports provide overview information on FDA's processes for approval and regulation of drugs: CRS Report R41983, How FDA Approves Drugs and Regulates Their Safety and Effectiveness, by Susan Thaul; CRS Report RL33986, FDA's Authority to Ensure That Drugs Prescribed to Children Are Safe and Effective, by Susan Thaul; CRS Report R42130, FDA Regulation of Medical Devices, by Judith A. Johnson; CRS Report R42508, The FDA Medical Device User Fee Program, by Judith A. Johnson. (Note: The rest of this report has not been updated since December 28, 2011.) Prior to and since the passage of the Medical Device Amendments of 1976, Congress has debated how best to ensure that consumers have access, as quickly as possible, to new and improved medical devices and, at the same time, prevent devices that are not safe and effective from entering or remaining on the market. Medical devices regulation is complex, in part, because of the wide variety of items that are categorized as medical devices; examples range from a simple tongue depressor to a life-sustaining heart valve. The regulation of medical devices can affect their cost, quality, and availability in the health care system. In order to be legally marketed in the United States, many medical devices must be reviewed by the Food and Drug Administration (FDA), the agency responsible for protecting the public health by overseeing medical products, including devices. FDA's Center for Devices and Radiological Health (CDRH) is primarily responsible for medical device review. CDRH activities are funded through a combination of public money (i.e., direct FDA appropriations from Congress) and private money (i.e., user fees collected from device manufacturers) which together comprise FDA's total. User fees account for 33% of FDA's total FY2011 program level and 15% of CDRH's program level, which is $378 million in FY2011 including $56 million in user fees. FDA's authority to collect user fees, originally authorized in 2002 (P.L. 107-250), has been reauthorized in five-year increments. It will expire on October 1, 2012, under the terms of the Medical Device User Fee Act of 2007 (MDUFA), Title II of the FDA Amendments Act of 2007 (FDAAA, P.L. 110-85). FDA requires all medical product manufacturers to register their facilities, list their devices with FDA, and follow general controls requirements. FDA classifies devices according to the risk they pose to consumers. Premarket review is required for moderate- and high-risk devices. There are two paths that manufacturers can use to bring such devices to market. One path consists of conducting clinical studies, submitting a premarket approval (PMA) application and requires evidence providing reasonable assurance that the device is safe

and effective. The other path involves submitting a 510(k) notification demonstrating that the device is substantially equivalent to a device already on the market (a predicate device) that does not require a PMA. The 510(k) process results in FDA clearance and tends to be much less expensive and less time- consuming than seeking FDA approval via PMA.

Promoting Access to Medical Technologies and Innovation - Intersections between Public Health, Intellectual Property and Trade - World Intellectual Property Organization 2013

This study has emerged from an ongoing program of trilateral cooperation between WHO, WTO and WIPO. It responds to an increasing demand, particularly in developing countries, for strengthened capacity for informed policy-making in areas of intersection between health, trade and IP, focusing on access to and innovation of medicines and other medical technologies.

Improving Healthcare Quality in Europe Characteristics, Effectiveness and Implementation of Different Strategies - OECD 2019-10-17

This volume, developed by the Observatory together with OECD, provides an overall conceptual framework for understanding and applying strategies aimed at improving quality of care. Crucially, it summarizes available evidence on different quality strategies and provides recommendations for their implementation. This book is intended to help policy-makers to understand concepts of quality and to support them to evaluate single strategies and combinations of strategies.

Essentials of Nursing Leadership and Management - Ruth M. Tappen 2004-01

This new edition focuses on preparing your students to assume the role as a significant member of the health-care team and manager of care, and is designed to help your students transition to professional nursing practice. Developed as a user-friendly text, the content and style makes it a great tool for your students in or out of the classroom. (Midwest).

Malaysia Health System Review - WHO Regional Office for the Western Pacific 2012-12-15

The Health Systems in Transition (HiT) profiles are country-based reports that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each profile is produced by country experts in collaboration with an international editor. In order to facilitate comparisons between countries, the profiles are based on a common template used by the Asia Pacific and European Observatories on Health Systems and Policies. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a profile.

Pain Management and the Opioid Epidemic - National Academies of Sciences, Engineering, and Medicine 2017-09-28

Drug overdose, driven largely by overdose related to the use of opioids, is now the leading cause of unintentional injury death in the United States. The ongoing opioid crisis lies at the intersection of two public health challenges: reducing the burden of suffering from pain and containing the rising toll of the harms that can arise from the use of opioid medications. Chronic pain and opioid use disorder both represent complex human conditions affecting millions of Americans and causing untold disability and loss of function. In the context of the growing opioid problem, the U.S. Food and Drug Administration (FDA) launched an Opioids Action Plan in early 2016. As part of this plan, the FDA asked the National Academies of Sciences, Engineering, and Medicine to convene a committee to update the state of the science on pain research, care, and education and to identify actions the FDA and others can take to respond to the opioid epidemic, with a particular focus on informing FDA's development of a formal method for incorporating individual and societal considerations into its risk-benefit framework for opioid approval and monitoring.

Evidence-Based Maintenance of Medical Equipment - Binseng Wang 2019-09-29

Instead of blindly following manufacturers' maintenance recommendations, Clinical Engineering (CE), also known as Health Technology Management (HTM), professionals can use a method similar to Evidence-Based Medicine to keep medical equipment safe and reliable while using judiciously their limited resources. Evidence-Based

Maintenance (EBM) analyzes the causes of equipment failures and uses these results to continually improve maintenance. EBM is particularly suited for those who want to take advantage of the Alternate Equipment Management (AEM) program allowed by the Centers for Medicare & Medicaid Services (CMS) because it allows comparison of different maintenance strategies and provides concrete evidence to prove the safety and effectiveness of the AEM program adopted.

Medical Equipment Maintenance Programme Overview - World Health Organization 2012-08-01

WHO and partners have been working towards devising an agenda, an action plan, tools and guidelines to increase access to appropriate medical devices. This document is part of a series of reference documents being developed for use at the country level. The series will include the following subject areas: * policy framework for health technology * medical device regulations * health technology assessment * health technology management * needs assessment of medical devices * medical device procurement * medical equipment donations * medical equipment inventory management * medical equipment maintenance * computerized maintenance management systems * medical device data * medical device nomenclature * medical devices by health-care setting * medical devices by clinical procedures * medical device innovation, research and development. These documents are intended for use by biomedical engineers, health managers, donors, nongovernmental organizations and academic institutions involved in health technology at the district, national, regional or global levels. An effective medical equipment maintenance program consists of adequate planning, management and implementation. Planning considers the financial, physical and human resources required to adequately implement the maintenance activities. Once the program has been defined, financial, personnel and operational aspects are continually examined and managed to ensure the program continues uninterrupted and improves as necessary. Ultimately, proper implementation of the program is key to ensuring optimal equipment functionality.

Improving Diagnosis in Health Care - National Academies of Sciences, Engineering, and Medicine 2016-01-29

Getting the right diagnosis is a key aspect of health care - it provides an explanation of a patient's health problem and informs subsequent health care decisions. The diagnostic process is a complex, collaborative activity that involves clinical reasoning and information gathering to determine a patient's health problem. According to Improving Diagnosis in Health Care, diagnostic errors-inaccurate or delayed diagnoses-persist throughout all settings of care and continue to harm an unacceptable number of patients. It is likely that most people will experience at least one diagnostic error in their lifetime, sometimes with devastating consequences. Diagnostic errors may cause harm to patients by preventing or delaying appropriate treatment, providing unnecessary or harmful treatment, or resulting in psychological or financial repercussions. The committee concluded that improving the diagnostic process is not only possible, but also represents a moral, professional, and public health imperative. Improving Diagnosis in Health Care, a continuation of the landmark Institute of Medicine reports To Err Is Human (2000) and Crossing the Quality Chasm (2001), finds that diagnosis-and, in particular, the occurrence of diagnostic errorsâ€"has been largely unappreciated in efforts to improve the quality and safety of health care. Without a dedicated focus on improving diagnosis, diagnostic errors will likely worsen as the delivery of health care and the diagnostic process continue to increase in complexity. Just as the diagnostic process is a collaborative activity, improving diagnosis will require collaboration and a widespread commitment to change among health care professionals, health care organizations, patients and their families, researchers, and policy makers. The recommendations of Improving Diagnosis in Health Care contribute to the growing momentum for change in this crucial area of health care quality and safety.

Clinical Engineering Financial Management and Benchmarking: Essential Tools to Manage Finances and Remain Competitive for Clinical Engineering/Healthc - Binseng Wang Scd 2018-10-13

This book provides the fundamental concepts and tools needed by

Clinical Engineering (CE), also known as Health Technology Management (HTM), managers to properly manage their financial resources, as well as to prove to their senior leaders that they are comparing (benchmarking) well against their peers. After introducing basic accounting concepts and tools using a case study based on real data, different methods for financing the CE/HTM department are explored. Next, opportunities for improving financial performance are explained through analyses of budget, costs and productivity. After a critical review of various benchmarks available, proper ways to use them to evaluate performance and seek improvements opportunities are demonstrated, enabling CE/HTM managers to secure recognition and support from their senior leaders, as well as defend their departments against consultants and outsourcing companies.

Inspection of Medical Devices - Almir Badnjević 2017-10-26

This book offers all countries a guide to implementing verification systems for medical devices to ensure they satisfy their regulations. It describes the processes, procedures and need for integrating medical devices into the legal metrology framework, addresses their independent safety and performance verification, and highlights the associated savings for national healthcare systems, all with the ultimate goal of increasing the efficacy and reliability of patient diagnoses and treatment. The book primarily focuses on diagnostic and therapeutic medical devices, and reflects the latest international directives and regulations. Above all, the book demonstrates that integrating medical devices into the legal metrology system and establishing a fully operational national laboratory for the inspection of medical devices could significantly improve the reliability of medical devices in diagnosis and patient care, while also reducing costs for the healthcare system in the respective country.

Emergency Medical Services - Institute of Medicine 2007-06-03

Emergency Medical Services (EMS) is a critical component of our nation's emergency and trauma care system, providing response and medical transport to millions of sick and injured Americans each year. At its best, EMS is a crucial link to survival in the chain of care, but within the last several years, complex problems facing the emergency care system have emerged. Press coverage has highlighted instances of slow EMS response times, ambulance diversions, trauma center closures, and ground and air medical crashes. This heightened public awareness of problems that have been building over time has underscored the need for a review of the U.S. emergency care system. Emergency Medical Services provides the first comprehensive study on this topic. This new book examines the operational structure of EMS by presenting an in-depth analysis of the current organization, delivery, and financing of these types of services and systems. By addressing its strengths, limitations, and future challenges this book draws upon a range of concerns: • The evolving role of EMS as an integral component of the overall health care system. • EMS system planning, preparedness, and coordination at the federal, state, and local levels. • EMS funding and infrastructure investments. • EMS workforce trends and professional education. • EMS research priorities and funding. Emergency Medical Services is one of three books in the Future of Emergency Care series. This book will be of particular interest to emergency care providers, professional organizations, and policy makers looking to address the deficiencies in emergency care systems.

Price Setting and Price Regulation in Health Care - OECD 2019-06-26

The objectives of this study are to describe experiences in price setting and how pricing has been used to attain better coverage, quality, financial protection, and health outcomes. It builds on newly commissioned case studies and lessons learned in calculating prices, negotiating with providers, and monitoring changes. Recognising that no single model is applicable to all settings, the study aimed to generate best practices and identify areas for future research, particularly in low- and middle-income settings. The report and the case studies were jointly developed by the OECD and the WHO Centre for Health Development in Kobe (Japan).

Long-term Pavement Marking Practices - James Migletz 2002

TRB's National Cooperative Highway Research Program (NCHRP) Synthesis 306: Long-Term Pavement Marking Practices documents the

current and best practices for managing pavement marking systems, identifies future needs, and addresses driver needs and methods of communicating information to drivers, selection criteria (e.g., reflectivity, pavement service life, wet weather performance), materials (e.g., color, durability, cost), specifications, construction practices, inventory management systems, and more.

Health Care Engineering, Part I - Monique Frize 2013-10-01

The first chapter describes the health care delivery systems in Canada and in the U.S. This is followed by examples of various approaches used to measure physiological variables in humans, either for the purpose of diagnosis or monitoring potential disease conditions; a brief description of sensor technologies is included. The function and role of the clinical engineer in managing medical technologies in industrialized and in developing countries are presented. This is followed by a chapter on patient safety (mainly electrical safety and electromagnetic interference); it includes a section on how to minimize liability and how to develop a quality assurance program for technology management. The next chapter discusses applications of telemedicine, including technical, social, and ethical issues. The last chapter presents a discussion on the impact of technology on health care and the technology assessment process. This two-part book consolidates material that supports courses on technology development and management issues in health care institutions. It can be useful for anyone involved in design, development, or research, whether in industry, hospitals, or government.

Learning What Works - Institute of Medicine 2011-06-09

It is essential for patients and clinicians to have the resources needed to make informed, collaborative care decisions. Despite this need, only a small fraction of health-related expenditures in the United States have been devoted to comparative effectiveness research (CER). To improve the effectiveness and value of the care delivered, the nation needs to build its capacity for ongoing study and monitoring of the relative effectiveness of clinical interventions and care processes through expanded trials and studies, systematic reviews, innovative research strategies, and clinical registries, as well as improving its ability to apply what is learned from such study through the translation and provision of information and decision support. As part of its Learning Health System series of workshops, the Institute of Medicine's (IOM's) Roundtable on Value & Science-Driven Health Care hosted a workshop to discuss capacity priorities to build the evidence base necessary for care that is more effective and delivers higher value for patients. Learning What Works summarizes the proceedings of the seventh workshop in the Learning Health System series. This workshop focused on the infrastructure needs--including methods, coordination capacities, data resources and linkages, and workforce--for developing an expanded and efficient national capacity for CER. Learning What Works also assesses the current and needed capacity to expand and improve this work, and identifies priority next steps. Learning What Works is a valuable resource for health care professionals, as well as health care policy makers.

Fractal Analysis of Breast Masses in Mammograms - Thanh Cabral 2022-06-01

Fractal analysis is useful in digital image processing for the characterization of shape roughness and gray-scale texture or complexity. Breast masses present shape and gray-scale characteristics in mammograms that vary between benign masses and malignant tumors. This book demonstrates the use of fractal analysis to classify breast masses as benign masses or malignant tumors based on the irregularity exhibited in their contours and the gray-scale variability exhibited in their mammographic images. A few different approaches are described to estimate the fractal dimension (FD) of the contour of a mass, including the ruler method, box-counting method, and the power spectral analysis (PSA) method. Procedures are also described for the estimation of the FD of the gray-scale image of a mass using the blanket method and the PSA method. To facilitate comparative analysis of FD as a feature for pattern classification of breast masses, several other shape features and texture measures are described in the book. The shape features described include compactness, spiculation index, fractional concavity, and Fourier factor. The texture measures described are statistical measures derived from the gray-level cooccurrence matrix of

the given image. Texture measures reveal properties about the spatial distribution of the gray levels in the given image; therefore, the performance of texture measures may be dependent on the resolution of the image. For this reason, an analysis of the effect of spatial resolution or pixel size on texture measures in the classification of breast masses is presented in the book. The results demonstrated in the book indicate that fractal analysis is more suitable for characterization of the shape than the gray-level variations of breast masses, with area under the receiver operating characteristics of up to 0.93 with a dataset of 111 mammographic images of masses. The methods and results presented in the book are useful for computer-aided diagnosis of breast cancer. Table of Contents: Computer-Aided Diagnosis of Breast Cancer / Detection and Analysis of\newline Breast Masses / Datasets of Images of Breast Masses / Methods for Fractal Analysis / Pattern Classification / Results of Classification of Breast Masses / Concluding Remarks

OECD Reviews of Health Systems: Mexico 2016 - OECD 2016-01-07

Ten years after the introduction of publically-funded universal health insurance, the Mexican health system finds itself at a critical juncture.

Medical Devices - World Health Organization 2010

Background papers 1 to 9 published as technical documents. Available in separate records from WHO/HSS/EHT/DIM/10.1 to WHO/HSS/EHT/DIM/10.9

Health Technology Assessment and Health Policy-making in Europe - Marcial Velasco Garrido 2008

New technologies with the potential to improve the health of populations are continuously being introduced. But not every technological development results in clear health gains. Health technology assessment provides evidence-based information on the coverage and usage of health technologies, enabling them to be evaluated properly and applied to health care efficaciously, promoting the most effective ones while also taking into account organizational, societal and ethical issues. This book reviews the relationship between health technology assessment and policy-making, and examines how to increase the contribution such research makes to policy- and decision-making processes. By communicating the value and potential of health technology assessment to a wider audience, both within and beyond decision-making and health care management, it aims ultimately to contribute to improve the health status of the population through the delivery of optimum health services.

Strategic Health Technology Incorporation - Binseng Wang 2009

Technology is indispensable for the delivery of health services even in the poorest and most remote areas of the world. Drugs, implants, disposable products, and medical equipment are major contributors to the fantastic progress of healthcare in the last 100 years when compared to the preceding thousands of years. Unfortunately, technology also is a significant contributor to the fast and steady rise of healthcare costs. This book covers the process of planning and acquiring technology with the goal of maximizing benefits (clinical outcomes and financial returns) and lowering costs (both investment and recurring). This book is a compilation of many years of work performed in developed and developing countries. It provides a rational and organized approach to technology incorporation, with heavy emphasis on medical equipment. It is hoped that readers can take advantage of what is presented to develop their own and better practice and contribute to best practices for the benefit of patients worldwide.

Crossing the Quality Chasm - Institute of Medicine 2001-08-19

Second in a series of publications from the Institute of Medicine's Quality of Health Care in America project Today's health care providers have more research findings and more technology available to them than ever before. Yet recent reports have raised serious doubts about the quality of health care in America. Crossing the Quality Chasm makes an urgent call for fundamental change to close the quality gap. This book recommends a sweeping redesign of the American health care system and provides overarching principles for specific direction for policymakers, health care leaders, clinicians, regulators, purchasers, and others. In this comprehensive volume the committee offers: A set of performance expectations for the 21st century health care system. A set of 10 new rules to guide patient-clinician relationships. A suggested organizing framework to better align the incentives inherent in payment and

accountability with improvements in quality. Key steps to promote evidence-based practice and strengthen clinical information systems. Analyzing health care organizations as complex systems, Crossing the Quality Chasm also documents the causes of the quality gap, identifies current practices that impede quality care, and explores how systems approaches can be used to implement change.

Patient Safety and Quality - 2008

"Nurses play a vital role in improving the safety and quality of patient car -- not only in the hospital or ambulatory treatment facility, but also of community-based care and the care performed by family members. Nurses need know what proven techniques and interventions they can use to enhance patient outcomes. To address this need, the Agency for Healthcare Research and Quality (AHRQ), with additional funding from the Robert Wood Johnson Foundation, has prepared this comprehensive, 1,400-page, handbook for nurses on patient safety and quality -- Patient Safety and Quality: An Evidence-Based Handbook for Nurses. (AHRQ Publication No. 08-0043)."--Online AHRQ blurb, http://www.ahrq.gov/qual/nurseshdbk.

Health Care Comes Home - National Research Council 2011-06-22

In the United States, health care devices, technologies, and practices are rapidly moving into the home. The factors driving this migration include the costs of health care, the growing numbers of older adults, the increasing prevalence of chronic conditions and diseases and improved survival rates for people with those conditions and diseases, and a wide range of technological innovations. The health care that results varies considerably in its safety, effectiveness, and efficiency, as well as in its quality and cost. Health Care Comes Home reviews the state of current knowledge and practice about many aspects of health care in residential settings and explores the short- and long-term effects of emerging trends and technologies. By evaluating existing systems, the book identifies design problems and imbalances between technological system demands and the capabilities of users. Health Care Comes Home recommends critical steps to improve health care in the home. The book's recommendations cover the regulation of health care technologies, proper training and preparation for people who provide in-home care, and how existing housing can be modified and new accessible housing can be better designed for residential health care. The book also identifies knowledge gaps in the field and how these can be addressed through research and development initiatives. Health Care Comes Home lays the foundation for the integration of human health factors with the design and implementation of home health care devices, technologies, and practices. The book describes ways in which the Agency for Healthcare Research and Quality (AHRQ), the U.S. Food and Drug Administration (FDA), and federal housing agencies can collaborate to improve the quality of health care at home. It is also a valuable resource for residential health care providers and caregivers.

Occupational Employment and Wages, 2006 - Labor Dept (U S) Bureau of Labor Statis 2008-09

NOTE: NO FURTHER DISCOUNT FOR THIS PRINT PRODUCT-- OVERSTOCK SALE-- Significantly reduced list price while supplies last Provides occupational employment and wage data. Human resources professionals, American citizens, corporate payroll managers, and others interested in employee income may be interested in this volume. Related products: Jobs & Employment resources collection can be found here: https://bookstore.gpo.gov/catalog/business-finance/jobs-employment

Clinical Engineering Handbook - Ernesto Iadanza 2019-12-06

Clinical Engineering Handbook, Second Edition, covers modern clinical engineering topics, giving experienced professionals the necessary skills and knowledge for this fast-evolving field. Featuring insights from leading international experts, this book presents traditional practices, such as healthcare technology management, medical device service, and technology application. In addition, readers will find valuable information on the newest research and groundbreaking developments in clinical engineering, such as health technology assessment, disaster preparedness, decision support systems, mobile medicine, and prospects and guidelines on the future of clinical engineering. As the biomedical engineering field expands throughout the world, clinical engineers play an increasingly important role as translators between the medical,

engineering and business professions. In addition, they influence procedures and policies at research facilities, universities, and in private and government agencies. This book explores their current and continuing reach and its importance. Presents a definitive, comprehensive, and up-to-date resource on clinical engineering Written by worldwide experts with ties to IFMBE, IUPESM, Global CE Advisory Board, IEEE, ACCE, and more Includes coverage of new topics, such as Health Technology Assessment (HTA), Decision Support Systems (DSS), Mobile Apps, Success Stories in Clinical Engineering, and Human Factors Engineering

Computer-Aided Detection of Architectural Distortion in Prior Mammograms of Interval Cancer - Shantanu Banik 2022-05-31

Architectural distortion is an important and early sign of breast cancer, but because of its subtlety, it is a common cause of false-negative findings on screening mammograms. Screening mammograms obtained prior to the detection of cancer could contain subtle signs of early stages of breast cancer, in particular, architectural distortion. This book presents image processing and pattern recognition techniques to detect architectural distortion in prior mammograms of interval-cancer cases. The methods are based upon Gabor filters, phase portrait analysis, procedures for the analysis of the angular spread of power, fractal analysis, Laws' texture energy measures derived from geometrically transformed regions of interest (ROIs), and Haralick's texture features. With Gabor filters and phase-portrait analysis, 4,224 ROIs were automatically obtained from 106 prior mammograms of 56 interval-cancer cases, including 301 true-positive ROIs related to architectural distortion, and from 52 mammograms of 13 normal cases. For each ROI, the fractal dimension, the entropy of the angular spread of power, 10 Laws' texture energy measures, and Haralick's 14 texture features were computed. The areas under the receiver operating characteristic (ROC) curves obtained using the features selected by stepwise logistic regression and the leave-one-image-out method are 0.77 with the Bayesian classifier, 0.76 with Fisher linear discriminant analysis, and 0.79 with a neural network classifier. Free-response ROC analysis indicated sensitivities of 0.80 and 0.90 at 5.7 and 8.8 false positives (FPs) per image, respectively, with the Bayesian classifier and the leave-one-image-out method. The present study has demonstrated the ability to detect early signs of breast cancer 15 months ahead of the time of clinical diagnosis, on the average, for interval-cancer cases, with a sensitivity of 0.8 at 5.7 FP/image. The presented computer-aided detection techniques, dedicated to accurate detection and localization of architectural distortion, could lead to efficient detection of early and subtle signs of breast cancer at pre-mass-formation stages. Table of Contents: Introduction / Detection of Early Signs of Breast Cancer / Detection and Analysis of Oriented Patterns / Detection of Potential Sites of Architectural Distortion / Experimental Set Up and Datasets / Feature Selection and Pattern Classification / Analysis of Oriented Patterns Related to Architectural Distortion / Detection of Architectural Distortion in Prior Mammograms / Concluding Remarks

Medical Equipment Maintenance - Binseng Wang 2012

In addition to being essential for safe and effective patient care, medical equipment also has significant impact on the income and, thus, vitality of healthcare organizations. For this reason, its maintenance and management requires careful supervision by healthcare administrators, many of whom may not have the technical background to understand all of the relevant factors. This book presents the basic elements of medical equipment maintenance and management required of healthcare leaders responsible for managing or overseeing this function. It will enable these individuals to understand their professional responsibilities, as well as what they should expect from their supervised staff and how to measure and benchmark staff performance against equivalent performance levels at similar organizations. The book opens with a foundational summary of the laws, regulations, codes, and standards that are applicable to the maintenance and management of medical equipment in healthcare organizations. Next, the core functions of the team responsible for maintenance and management are described in sufficient detail for managers and overseers. Then the methods and measures for determining the effectiveness and efficiency of equipment maintenance

and management are presented to allow performance management and benchmarking comparisons. The challenges and opportunities of managing healthcare organizations of different sizes, acuity levels, and geographical locations are discussed. Extensive bibliographic sources and material for further study are provided to assist students and healthcare leaders interested in acquiring more detailed knowledge. Table of Contents: Introduction / Regulatory Framework / Core Functions of Medical Equipment Maintenance and Management / CE Department Management / Performance Management / Discussion and Conclusions

Clinical Engineering Handbook - Joseph F. Dyro 2004-08-27

Author Joseph Dyro has been awarded the Association for the Advancement of Medical Instrumentation (AAMI) Clinical/Biomedical Engineering Achievement Award which recognizes individual excellence and achievement in the clinical engineering and biomedical engineering fields. He has also been awarded the American College of Clinical Engineering 2005 Tom O'Dea Advocacy Award. As the biomedical engineering field expands throughout the world, clinical engineers play an evermore important role as the translator between the worlds of the medical, engineering, and business professionals. They influence procedure and policy at research facilities, universities and private and government agencies including the Food and Drug Administration and the World Health Organization. Clinical Engineers were key players in calming the hysteria over electrical safety in the 1970's and Y2K at the turn of the century and continue to work for medical safety. This title brings together all the important aspects of Clinical Engineering. It provides the reader with prospects for the future of clinical engineering as well as guidelines and standards for best practice around the world. * Clinical Engineers are the safety and quality faciltators in all medical facilities.

Biosafety in Microbiological and Biomedical Laboratories - Centers for Disease Control (U.S.) 1988

Health Professions Education - Institute of Medicine 2003-07-01

The Institute of Medicine study Crossing the Quality Chasm (2001) recommended that an interdisciplinary summit be held to further reform of health professions education in order to enhance quality and patient safety. Health Professions Education: A Bridge to Quality is the follow up to that summit, held in June 2002, where 150 participants across disciplines and occupations developed ideas about how to integrate a core set of competencies into health professions education. These core competencies include patient-centered care, interdisciplinary teams, evidence-based practice, quality improvement, and informatics. This book recommends a mix of approaches to health education improvement, including those related to oversight processes, the training environment, research, public reporting, and leadership. Educators, administrators, and health professionals can use this book to help achieve an approach to education that better prepares clinicians to meet both the needs of patients and the requirements of a changing health care system.

Delivering Quality Health Services: A Global Imperative - OECD 2018-07-05

This report describes the current situation with regard to universal health coverage and global quality of care, and outlines the steps governments, health services and their workers, together with citizens and patients need to urgently take.

Content-based Retrieval of Medical Images - Paulo Mazzoncini de Azevedo-Marques 2022-06-01

Content-based image retrieval (CBIR) is the process of retrieval of images from a database that are similar to a query image, using measures derived from the images themselves, rather than relying on accompanying text or annotation. To achieve CBIR, the contents of the images need to be characterized by quantitative features; the features of the query image are compared with the features of each image in the database and images having high similarity with respect to the query image are retrieved and displayed. CBIR of medical images is a useful tool and could provide radiologists with assistance in the form of a display of relevant past cases. One of the challenging aspects of CBIR is to extract features from the images to represent their visual, diagnostic, or application-specific information content. In this book, methods are

presented for preprocessing, segmentation, landmarking, feature extraction, and indexing of mammograms for CBIR. The preprocessing steps include anisotropic diffusion and the Wiener filter to remove noise and perform image enhancement. Techniques are described for segmentation of the breast and fibroglandular disk, including maximum entropy, a moment-preserving method, and Otsu's method. Image processing techniques are described for automatic detection of the nipple and the edge of the pectoral muscle via analysis in the Radon domain. By using the nipple and the pectoral muscle as landmarks, mammograms are divided into their internal, external, upper, and lower parts for further analysis. Methods are presented for feature extraction using texture analysis, shape analysis, granulometric analysis, moments, and statistical measures. The CBIR system presented provides options for retrieval using the Kohonen self-organizing map and the k-nearest-neighbor method. Methods are described for inclusion of expert knowledge to reduce the semantic gap in CBIR, including the query point movement method for relevance feedback (RFb). Analysis of performance is described in terms of precision, recall, and relevance-weighted precision of retrieval. Results of application to a clinical database of mammograms are presented, including the input of expert radiologists into the CBIR and RFb processes. Models are presented for integration of CBIR and computer-aided diagnosis (CAD) with a picture archival and communication system (PACS) for efficient workflow in a hospital. Table of Contents: Introduction to Content-based Image Retrieval / Mammography and CAD of Breast Cancer / Segmentation and Landmarking of Mammograms / Feature Extraction and Indexing of Mammograms / Content-based Retrieval of Mammograms / Integration of CBIR and CAD into Radiological Workflow