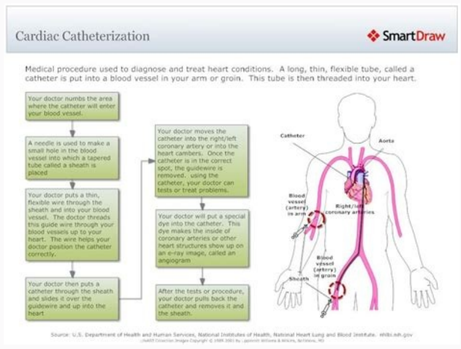
Cardiac catheterization nursing care pdf



Cardiac catheterization procedure nursing care. Nursing care during cardiac catheterization. Nursing care before cardiac catheterization. Post cardiac catheterization nursing care. Nursing care pre and post cardiac catheterization. Cardiac catheterization nursing care plan. Cardiac catheterization nursing care ppt. Pre cardiac catheterization nursing care.

DNP, MBA, RN, NE-BC 30 years of healthcare experience in Prehospital-Emergency-Critical Care Services, Inpatient Acute Care, Long-Term Acute Care, Administrative Nursing Services, Magnet®, Baldrige Performance Excellence and executive leadership. Dr. Whitehead is board certified as a Nurse Executive through the American Nurses Credentialing Center, is a member of Sigma Theta Tau, and serves as a Baldrige Performance Excellence Examiner. She holds a Master of Business Administration and a Doctor of Nursing Practice with a focus on Executive Nursing Leadership from Texas Christian University. Kristin's Outcomes • Built strategic alliances with ED, Acute Care and Perioperative teams resulting in 85th percentile patient satisfaction in ED, improved throughput (reduced ED LOS by 20%), and implementation of change management concepts (rapid cycle testing). • Defined strategy/business plan for Wound Care/Ostomy Services resulting in generation of revenue stream increase of 100% and increased volume by 50%. • Engaged employees resulting in satisfaction of 90th percentile for 4 consecutive years. • Achieved ANCC Beacon Award- Gold level in 2015 for performance excellence in the Critical Care Unit (lead writer) • Implemented sepsis program in collaboration with Joint Commission Centers for Transforming Healthcare (CTH), won "Quality and Innovation Award" in 2014 and realized a 24% reduction in mortality rate equating to 38 lives saved in one year. • Oversaw nursing quality as the NDNQI Site Coordinator leading to outcomes in CAUTI, CLABSI, HAPU, and falls that outperform the Magnet® mean by more than 50%. • Led Trauma Program to increase in patient census by 29%. • Implemented Concussion Program/Clinic that quadrupled initial volume projections. • Created "DART" (Discharge, Admission, Resource, and Transport) team that has been nationally recognized for best practices around admissions, medication reconciliation, and throughput. Career Summary Kristin has extensive knowledge and experience as a Magnet® Program Director and in clinical/business operations including performance improvement, customer satisfaction, revenue/productivity enhancement, cost reduction, executive leadership, throughput/patient flow, and human resources. She is a proven leader with intense focus on building positive physician relationships, cultivating staff engagement, and leading change. Experience • Currently: Executive Vice President Performance Excellence, Healthlinx, Columbus, Ohio • 2015: Chief Nursing Officer, Select Specialty Hospital, Plano, Texas • 2002-2015: Associate CNO (2013-2015), Director ED/EMS Services/ICU/Trauma/Central Monitoring Unit/Concussion/Clinical Decision Unit/Wound and Ostomy (2010-2015), Director Nursing Administration (2010-2015), Magnet® Program Director (2008-2015), Manager Acute Care Services (2007-2008), Manager Trauma Services/Emergency Services Educator (2002-2007) • 1997-2002: Emergency Services Charge Nurse • 1994-1997: Emergency Services Staff Nurse • 1990-1994: Paramedic Education • 2017: Doctor of Nursing Practice, Texas Christian University • 1997: Masters of Science in Nursing &Masters of Business Administration, University of Phoenix • 1994: Bachelor of Science in Nursing, University of Texas at Austin • 1990: Associate of Paramedicine Professional Affiliations/Appointments/Honors • 2017: Sigma Theta Tau Member • 2015: Golden Key International Honor Society, Texas Christian University • 2014-2015: Magnet® Program content reviewer/subject matter expert for podium/poster submissions • 2010: Great 100 Nurse, Texas Publications/Research • Research Principle Investigator, January 2015: Humpty Dumpty Sat on the Wall: Identifying Why our Low Risk Patients Fall. • Research Co-investigator, November 2014: Research study of nurses at Texas Health Presbyterian Hospital Plano: A Re • Evaluation of Interruptions and Distractions during Medication Preparation and Administration. • Research Co-investigator, March 2012: Research study of nurses at Texas Health Presbyterian Hospital Plano: Evaluation of Interruptions and Distractions during Medication Preparation and Administration. • Lead writer/editor for Texas Award for Performance Excellence (2008), Malcolm Baldrige Quality Award (2008), & Magnet® Designation Applications (2010 & 2014) Presented by Ancc Specialty Certifications The ANCC Cardiac-Vascular Nursing board certification examination is a competency based examination that provides a valid and reliable assessment of the entry-level clinical knowledge and skills of registered nurses in the cardiac-vascular specialty after initial RN licensure. Once you complete eligibility requirements to take the certification examination and successfully pass the exam, you are awarded the credential: Cardiac Vascular Nurse – Board Certified (CV-BC™). This credential is valid for 5 years. You can continue to use this credential by maintaining your license to practice and meeting the renewal requirements in place at the time of your certification renewal. The Accreditation Board for Specialty Nursing Certification accredits this ANCC certification. Apply online Renew online 12631 East 17th Avenue, B130Aurora, CO 80045Phone: 303-724-6946Fax: 303-724-2094Cardiology Appointments:University of Colorado Hospital Cardiac and Vascular Center12605 East 16th Avenue, 3rd FloorAurora, CO 80045Phone: 720-848-5300Fax: 720-848-5301 Insertion of a catheter into a chamber or vessel of the heart Cardiac catheterizationCardiac catheterization labOther namesCath, heart cathSpecialtycardiology[edit on Wikidata] Cardiac catheterization (heart cath) is the insertion of a catheter into a chamber or vessel of the heart. This is done both for diagnostic and interventional purposes. A common example of cardiac catheterization is coronary catheterization that involves catheterization of the coronary arteries for coronary artery disease and myocardial infarctions ("heart attacks"). Catheterization is most often performed in special laboratories with fluoroscopy and highly maneuverable tables. These "cath labs" are often equipped with cabinets of catheters, stents, balloons, etc. of various sizes to increase efficiency. Monitors show the fluoroscopy imaging, electrocardiogram (ECG), pressure waves, and more. Uses A person undergoing a procedure where an 8 F introducer was placed in the right jugular vein using a 5F MAK access kit. A 7 F balloon tipped catheter was introduced via the venous sheath, the balloon was inflated and the catheter was advanced through the right heart chambers into the pulmonary capillary wedge position. Right sided pressures were obtained and cardiac output was measured using thermodilution. Coronary angiography is a diagnostic procedure that allows visualization of the coronary vessels. Fluoroscopy is used to visualize the lumens of the arteries as a 2-D projection. Should these arteries show narrowing or blockage, then techniques exist to open these arteries. Percutaneous coronary intervention is a blanket term that involves the use of mechanical stents, balloons, etc. to increase blood flow to previously blocked (or occluded) vessels.[citation needed] Measuring pressures in the heart is also an important aspect of catheterization. The catheters are fluid filled conduits that can transmit pressures to outside the body to pressure transducers. This allows measuring pressure in any part of the heart that a catheter can be maneuvered into.[citation needed] Measuring blood flow is also possible through several methods. Most commonly, flows are estimated using the Fick principle and thermodilution. These methods have drawbacks, but give invasive estimations of the cardiac output, which can be used to make clinical decisions (e.g., cardiogenic shock, heart failure) to improve the person's condition.[citation needed] Cardiac catheterization can be used as part of a therapeutic regimen to improve outcomes for survivors of out-of-hospital cardiac arrest.[1] Cardiac catheterization often requires the use of fluoroscopy to visualize the path of the catheter as it enters the heart or as it enters the coronary arteries. The coronary arteries are known as "epicardial vessels" as they are located in the epicardium, the outermost layer of the heart.[2] The use of fluoroscopy requires radiopaque contrast, which in rare cases can lead to contrast-induced kidney injury (see Contrast-induced nephropathy). People are constantly exposed to low doses of ionizing radiation during procedures.[3] Ideal table positioning between the x-ray source and receiver, and radiation monitoring via thermoluminescent dosimetry, are two main ways of reducing a person's exposure to radiation.[3] People with certain comorbidities (people who have more than one condition at the same time) have a higher risk of adverse events during the cardiac catheterization procedure.[3] These comorbidity conditions include aortic aneurysm, aortic stenosis, extensive three-vessel coronary artery disease, diabetes, uncontrolled hypertension, obesity, chronic kidney disease, and unstable angina.[4] Left heart catheterization Left heart catheterization (LHC) is an ambiguous term and sometime clarification is required:[citation needed] LHC can mean measuring the pressures of the left side of the heart. LHC can be synonymous with coronary angiography. technique is also used to assess the amount of occlusion (or blockage) in a coronary artery, often described as a percentage of occlusion. A thin, flexible wire is inserted into either the femoral artery or the radial artery and threaded toward the heart until it is in the ascending aorta. Radial access is not associated with an increased risk of stroke over femoral access.[5] At this point, a catheter is guided over the wire into the ascending aorta, where it can be maneuvered into the coronary arteries through the coronary ostia.[4] In this position, the interventional cardiologist can inject contrast and visualize the flow through the vessel. If necessary, the physician can utilize percutaneous coronary intervention techniques, including the use of a stent (either bare-metal or drug-eluting) to open the blocked vessel and restore appropriate blood flow. In general, occlusions greater than 70% of the width of the vessel lumen are thought to require intervention. However, in cases where multiple vessels are blocked (so-called "three-vessel disease"), the interventional cardiologist may opt instead to refer the patient to a cardiothoracic surgeon for coronary artery bypass graft (CABG; see Coronary artery bypass surgery) surgery.[citation needed] Right heart catheterization Right heart cath using a Swan-Ganz pulmonary artery catheter Right heart catheterization (RHC) allows the physician to determine the pressures within the heart (intracardiac pressures). The heart is most often accessed via the internal jugular or femoral vein; arteries are not used. Values are commonly obtained for the right atrium, right ventricle, pulmonary artery, and pulmonary capillary "wedge" pressures. Right heart catheterizations also allow the physician to estimate the cardiac output, the amount of blood that flows from the heart each minute, and the cardiac index, a hemodynamic parameter that relates the cardiac output to a patient's body size. Determination of cardiac output can be done by releasing a small amount of saline solution (either chilled or at room temperature) in one area of the heart and measuring the change in blood temperature over time in another area of the heart.[citation needed] Right heart catheterization is often done for pulmonary hypertension, heart failure, and cardiogenic shock. The pulmonary artery catheter can be placed, used, and removed, or it can be placed and left in place for continuous monitoring. The latter can be done an intensive care unit (ICU) to permit frequent measurement of the hemodynamic parameters in response to interventions.[citation needed] Parameters obtainable from a right heart catheterization:[citation needed] Right atrial pressure

Right ventricular pressure Pulmonary artery pressure Pulmonary capillary wedge pressure Systemic vascular resistance Pulmonary vascular resistance Cardiac output Blood oxygenation Implantation of a CardioMEMS is done during a right heart catheterization. This device is implanted into the pulmonary artery to permit real-time measurement of the pulmonary artery pressure over time.[citation needed] Coronary catheterization Main article: Coronary catheterization Coronary catheterization is an invasive process and comes with risks that include stroke, heart attack, and death. Like any procedure, the benefits should outweigh the risks and so this procedure is reserved for those with symptoms of serious heart diseases and is never used for screening purposes. Other, non-invasive tests are better used when the diagnosis or certainty of the diagnosis is not as clear.[citation needed] Indications for cardiac catheterization include the following:[6] Acute coronary syndromes: ST elevation MI (STEMI), non-ST Elevation MI (NSTEMI), and unstable angina Evaluation of coronary artery disease as indicated by Abnormal stress test As part of the pre-op evaluation for other cardiac procedures (e.g., valve replacement) as coronary artery bypass grafting may be done at the same time Risk stratification for high cardiac risk surgeries (e.g., endovascular aneurysm repair) Persistent chest pain despite medical therapy thought to be cardiac in origin New-onset unexplained heart failure Survival of sudden cardiac death or dangerous cardiac arrhythmias Workup of suspected Prinzmetal angina (coronary vasospasm) Right heart catheterization, along with pulmonary function testing and other testing should be done to confirm pulmonary hypertension prior to having vasoactive pharmacologic treatments approved and initiated.[7] to measure intracardiac and intravascular blood pressures to take tissue samples for biopsy to inject various agents for measuring blood flow in the heart; also to detect and quantify the presence of an intracardiac shunt to inject contrast agents in order to study the shape of the heart vessels and chambers and how they change as the heart beats Pacemakers and defibrillators Posteroanterior and lateral chest radiographs of a pacemaker with normally located leads in the right atrium (white arrow) and right ventricle (black arrowhead), respectively. Placement of internal pacemakers and defibrillators are done through catheterization as well. An exception to this is placement of electrodes on the outer surface of the heart (called epicardial electrodes). Otherwise, electrodes are placed through the venous system into the heart and left there permanently. Typically, these devices are placed in the left upper chest and enter the left subclavian vein and electrodes are placed in the right atrium, right ventricle, and coronary sinus (for the left ventricle stimulation).[citation needed] Valve assessment Echocardiography is a non-invasive method to evaluate the heart valves. However, sometimes the valve pressure gradients need to be measured directly because echo is equivocal for the severity of valve disease. Invasive assessment of the valve can be done with catheterization by placing a catheter across the valve and measuring the pressures simultaneously on each side of the valve to obtain the pressure gradient.[8] In conjunction with a right heart catheterization, the valve area can be estimated. For example, in aortic valve area calculation the Gorlin equation can be used to calculate the area if the cardiac output, pressure gradient, systolic period, and heart rate are known.[citation needed] Pulmonary angiography Main article: Pulmonary angiography Evaluation of the blood flow to the lungs can be done invasively through catheterization. Contrast is injected into the pulmonary trunk, left or right pulmonary artery, or segment of the pulmonary artery.[citation needed] Shunt evaluation Atrial septal defect with left-to-right shunt Cardiac shunts can be evaluated through catheterization. Using oxygen as a marker, the oxygen saturation of blood can be sampled at various locations in and around the heart. For example, a left-to-right atrial septal defect will show a marked increase in oxygen saturation in the right atrium, ventricle, and pulmonary artery as compared to the mixed venous oxygen saturation from the oxygenated blood from the lungs mixing into the venous return to the heart. Utilizing the Fick principle, the ratio of blood flow in the lungs (Qp) and system circulations (Qs) can calculate the Qp:Qs ratio. Elevation of the Qp:Qs ratio above 1.5 to 2.0 suggests that there is a hemodynamically significant left-to-right shunt (such that the blood flow through the lungs is 1.5 to 2.0 times more than the systemic circulation). This ratio can be evaluated non-invasively with echocardiography too, however.[citation needed] A "shunt run" is often done when evaluating for a shunt by taking blood samples from superior vena cava (SVC), inferior vena cava (IVC), right atrium, right ventricle, pulmonary artery, and system arterial. Abrupt increases in oxygen saturation support a left-to-right shunt and lower than normal systemic arterial oxygen saturation supports a right-to-left shunt. Samples from the SVC & IVC are used to calculate mixed venous oxygen saturation.[citation needed] Ventriculography Main article: Cardiac ventriculography By injecting contrast into the left ventricle, the outline of the ventricle can be measured in both systole and diastole to estimate the ejection fraction (a marker of heart function). Due to the high contrast volumes and injection pressures, this is often not performed unless other, non-invasive methods are not acceptable, not possible, or conflicting.[citation needed] Percutaneous aortic valve replacement Main article: Percutaneous aortic valve replacement Advancements in cardiac catheterization have permitted replacement of heart valves by means of blood vessels. This method allows valve replacement without open heart surgery and can be performed on people who are high-risk for such a surgery.[citation needed] Balloon septostomy Main article: Balloon septostomy Catheterization can also be used to perform balloon septostomy, which is the widening of a foramen ovale, patent foramen ovale (PFO), or atrial septal defect (ASD) using a balloon catheter. This can be done in certain congenital heart diseases in which the mechanical shunting is required to sustain life such as in transposition of the great vessels.[citation needed] Alcohol septal ablation Main article: Alcohol septal ablation Hypertrophic cardiomyopathy is a disease in which the myocardium is thickened and can cause blood flow obstruction. If hemodynamically significant, this excess muscle can be removed to improve blood flow. Surgically, this can be done with septal myectomy. However, it can be done through catheterization and by injecting ethanol to destroy the tissue in an alcohol septal ablation. This is done by selected an appropriate septal artery supplying the intended area and, essentially, causing a localized, controlled myocardial infarction of the area with ethanol.[citation needed] Complications Complications of cardiac catheterization and tools used during catheterization include, but not limited to:[citation needed] Death Stroke Heart attack Ventricular ectopy and ventricular arrhythmias Pericardial effusion Bleeding: internal and external Infection Radiation burn Contrast induced nephropathy from contrast use The likelihood of these risks depends on many factors that include the procedure being performed, the overall health state of the patient, situational (elective vs emergent), medications (e.g., anticoagulation), and more.[citation needed] Procedure "Cardiac catheterization" is a general term for a group of procedures. Access to the heart is obtained through a peripheral artery or vein. Commonly, this includes the radial artery, internal jugular vein, and femoral artery/vein. Each blood vessel has its advantages and disadvantages. Once access is obtained, plastic catheters (tiny hollow tubes) and flexible wires are used to navigate to and around the heart. Catheters come in numerous shapes, lengths, diameters, number of lumens, and other special features such as electrodes and balloons. Once in place, they are used to measure or intervene. Imaging is an important aspect to catheterization and commonly includes fluoroscopy but can also include forms of echocardiography (TTE, TEE, ICE) and ultrasound (IVUS).[citation needed] Obtaining access uses the Seldinger technique by puncturing the vessel with a needle, placing a wire through the needle into the lumen of the vessel, and then exchanging the needle for a larger plastic sheath. Finding the vessel with a needle can be challenging and both ultrasound and fluoroscopy can be used to aid in finding and confirming access. Sheaths typically have a side port that can be used to withdraw blood or injection fluids/medications, and they also have an end hole that permits introducing the catheters, wires, etc. coaxially into the blood vessel.[citation needed] Once access is obtained, what is introduced into the vessel depends on the procedure being performed. Some catheters are formed to a particular shape and can really only be manipulated by inserting/withdrawing the catheter in the sheath and rotating the catheter. Others may include internal structures that permit internal manipulation (e.g., intracardiac echocardiography).[citation needed] Finally, when the procedure is completed, the catheters are removed and the sheath is removed. With time, the hole made in the blood vessel will heal. Vascular closure devices can be used to speed along hemostasis. Equipment Much equipment is required for a facility to perform the numerous possible procedures for cardiac catheterization. General:[citation needed] Catheters Film or Digital Camera Electrocardiography monitors External defibrillator Fluoroscopy Pressure transducers Sheaths Percutaneous coronary intervention:[citation needed] Coronary stents: bare-metal stent (BMS) and drug-eluting stent (DES) Angioplasty balloons Atherectomy lasers and rotational devices Left atrial appendage occlusion devices Electrophysiology:[citation needed] Ablation catheters: radiofrequency (RF) and cryo Pacemakers Defibrillators History Further information: History of invasive and interventional cardiology The history of cardiac catheterization dates back to Stephen Hales (1677-1761) and Claude Bernard (1813-1878), who both used it on animal models. Clinical application of cardiac catheterization begins with Dr. Werner Forssmann in 1929, who inserted a catheter into the vein of his own forearm, guided it fluoroscopically into his right atrium, and took an X-ray picture of it.[9] However, even after this achievement, hospital administrators removed Forssmann from his position owing to his unorthodox methods.[9] During World War II, André Frédéric Cournand, a physician at NewYork-Presbyterian/Columbia, then Columbia-Bellevue, opened the first catheterization lab. In 1956, Forssmann and Cournand were co-recipients of the Nobel Prize in Physiology or Medicine for the development of cardiac catheterization. Dr. Eugene A. Stead performed research in the 1940s, which paved the way for cardiac catheterization in the USA.[citation needed] References ^ Camuglia, Anthony C.; Randhawa, Varinder K.; Lavi, Shahar; Walters, Darren L. (November 2014). 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ISBN 978-1608319053. ^ American College of Chest Physicians; American Thoracic Society (September 2013), "Five Things Physicians and Patients Should Question", Choosing Wisely: an initiative of the ABIM Foundation, American College of Chest Physicians and American Thoracic Society, retrieved 6 January 2013 ^ Grossman & Baim's cardiac catheterization, angiography, and intervention. Moscucci, Mauro, (Eighth edition). Philadelphia. p. 272. ISBN 9781451127409. OCLC 829739969. ^ a b West, JB (1 October 2017). "The beginnings of cardiac catheterization and the resulting impact on pulmonary medicine". American Journal of Physiology. Lung Cellular and Molecular Physiology. 313 (4): L651–L658. doi:10.1152/ajplung.00133.2017. PMID 28839102. External links MedlinePlus Medical Encyclopedia: Cardiac catheterization eMedicine: Cardiac Catheterization (Left Heart) Retrieved from " arrest is when the heart suddenly and unexpectedly stops beating. It is a medical emergency that without immediate medical intervention will result within minutes in sudden cardiac death. Cardiopulmonary resuscitation (CPR), and possibly defibrillation are needed until further treatment can be provided. Cardiac arrest results in a rapid loss of consciousness, and ... What to Expect After Your Cardiac Catheterization Procedure Your family will receive preliminary results of the catheterization. IV fluids will run continuously until you can drink adequately on your own. Once you're awake, you may drink clear liquids (apple juice, water). Your diet will be advanced as tolerated. 28/11/2021 · Appropriate catheter care will decrease risk for potential infection which can further contribute to urinary retention. 4. Catheterize patient when indicated If patient is retaining a significant amount of urine, catheterization may be necessary. When necessary ensure catheterization occurs per the healthcare provider orders. 5. 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The ANCC Cardiac-Vascular Nursing board certification examination is a competency based examination that provides a valid and reliable assessment of the entry-level clinical knowledge and ... move, change names or acquire a new phone or email, please update contact details in your account. Or email Customer Care or call 1.800.284.2378 ... 10/02/2022 · Cardiac nurses and cardiac catheterization nurses are highly specialized in cardiac care and procedural treatments for patients with various cardiovascular diseases. They work very closely with cardiologists as well as the rest of the interdisciplinary team to ensure proper care is delivered rapidly and safely. 12/04/2022 · A cardiac care nurse provides direct care to the cardiac patient population and assists in the treatment of a variety of complex cardiac diagnoses. Responsibilities include caring for patients, both pre and post-cardiac surgery. 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