

Understanding the "Transition" to Adult Care for heart problems Growing up? As patients are getting older, they will be embarking on new challenges such as leaving school, getting a job, and going to university or TAFE.

Find articles by Roshan S. George Find articles by Paul V. George Find articles by Oommen K. This article has been cited by other articles in PMC. Abstract Flat panel detector FPD technology in interventional cardiology is on the increase due to its varied advantages compared to the conventional image intensifier II systems. It is not clear whether FPD imparts lower radiation doses compared to II systems though a few studies support this finding. Transition from II to FPD system requires stringent dose optimization strategies right from the initial period of installation. Cardiology, flat panel, image intensifier, radiation dose

Introduction An increased man-made radiation exposure-risk from the use of high-dose imaging modalities such as computed tomography and angiographic suites is now being observed in many health-care centers with over 3. All interventional cardiological procedures are invariably performed using dedicated fluoroscopy and angiography suites equipped with either image intensifier II -based or flat panel detector FPD -based systems. The II-based systems have been used for fluoroscopy for more than two decades. Stringent optimization involves orientation of staff, consistent restriction of frame rates during image acquisition, using low dose settings, judicious use of magnification, etc. For this reason, it is necessary that one should be knowledgeable in the magnitude of radiation dose associated with each intervention. This can be achieved by measuring real-time doses using devices such as a dose area product DAP meter. Most of the newer angiography machines are equipped with a DAP meter fitted on the collimator assembly of the machine. DAP is particularly a useful method for assessing and comparing the radiation dose from screening procedures and acts as a surrogate for radiation risk. From the dose descriptors, it is possible to estimate organ doses as well as effective doses for each procedure. Radiation doses from interventional procedures have been widely reported in literature, with more emphasis on doses from II-based systems. However, there are only a few reports on radiation doses from FPD systems as it may be a transition period from II to FPD for most of the interventional users. Some patient and phantom-based studies reported in literature state that doses from FPD are higher than II systems. The recent digital modalities have shown improvement in dose optimization and noise reduction techniques. It is anticipated that this information will be useful for those performing cardiological interventions and for those who are on a transition from II to FPD. Cardiovascular interventions were performed using two dedicated catheterization labs, each equipped with Philips Allura FD10 flat panel system Netherlands. The PTCA procedure was invariably performed by a senior interventionalist assisted by two junior cardiologists, while the CAG was performed either by the senior interventionalist or by junior cardiologists. These machines incorporated a total filtration of 2. During the course of the study, low dose setting with 0. In the earlier work using II-based system, a cm image intensifier format IIF was used during fluoroscopic screening in CAG and PTCA procedures for tracing the path of the catheter from the region of arterial puncture and to the screening of the cardiac valve region. A cm IIF was used for the oblique, caudal, cranial, and lateral projections delineating the coronary anatomy. Results and Discussion A transition from II to FPD system for a catheterization lab would require adequate justification in terms of radiation dose, image quality, maintenance, and investment. It has been reported that the FPDs designed specifically for fluoroscopic purposes provide superior image quality and dose efficiency compared to the II systems, except at the lowest fluoroscopic dose levels. The DAP values for II-based systems represented in Table 1 is from the use of optimized protocol as reported in the previous published article from the same referral center where the study was conducted. Having adhered to the same optimization strategies in both systems, doses were similar owing to the fact that further optimization is warranted in FPD system. They have also reported that the total DAP from fluoroscopy and cine for II and FPD are not significantly different and the image quality from FPD is better than II in cine mode with no difference in the imaging performance in fluoroscopy mode. Wide variation of doses is observed from these studies which may be attributed to the angiographic system used, time duration of the procedure and work environment. Though FPDs possess good detective quantum

efficiency, they did not inherently reduce the radiation dose.

Chapter 2 : Transition Support Service : Cardiology Transition Publications

Patient eligibility is determined by their pediatric cardiologist and the transition team staff. Families are contacted by the transition team to alert them of an upcoming transition team visit (completed along with regular cardiology visits).

Print The Case A year-old woman with a history of Marfan syndrome complicated by aortic root dilation presented to the emergency department with abdominal pain and was found to be pregnant. This was her second pregnancy, as she had had a therapeutic abortion 4 years previously. At that time, the patient was being followed by a pediatrician and a pediatric cardiologist. She decided to terminate the pregnancy and was advised that she should undergo surgical repair of her aortic root in the near future. Shortly thereafter, she turned 18 years old and was referred to an adult primary care physician and cardiologist for continued care. The patient never saw her new physicians and was never scheduled for the recommended cardiac surgery procedure. In fact, over the next 3 years she did not receive regular follow-up care at all, although she remained relatively healthy. She also never received pre-conception counseling or contraception, despite the risk to her health should she become pregnant. Upon learning of the current pregnancy, the patient decided against another abortion. She was evaluated by adult cardiology and cardiac surgery, and she was advised to undergo an aortic root repair during her second trimester in order to minimize potential harm to the fetus while preserving her own health. Understandably, this decision caused significant anxiety for the patient and her family. She did undergo the procedure without complications and proceeded to have a healthy child at full term. Medical advancements over the last 50 years have led to a significant increase in the lifespan of many children who would previously have died in childhood. However, without long-term management to ensure health and wellness, young adults with chronic medical conditions can experience serious, even catastrophic consequences, as with the patient in this vignette who required urgent surgery. The transfer from pediatric to adult care is, indeed, a point in the transition process, but it takes years of preparation for young adult patients to become fully independent in their medical care. In this vignette, there were failures of two processes: This clinical vignette focuses on Marfan syndrome and congenital heart disease. Both the Working Group on research in adult congenital heart disease and the American Heart Association have generated recommendations for management and monitoring of adults with congenital heart disease. The need for surgical repair was discussed, but there was no follow-up on prevention or steps to take in the event that the patient became pregnant. This patient needed her transfer of care planned and coordinated with the receiving adult provider in order to ensure that the recommended cardiac monitoring was achieved. While the recommendations made by various disease-specific organizations have disease-specific concerns and guidelines Table , the elements of transition across disease conditions are not dissimilar. These include measures to: Ensure the patients have knowledge and understanding of their disease. Make sure the patients know how to manage their disease and understand future contingencies for which they need to prepare. This knowledge includes developing self-advocacy skills, learning to interact with adult health care providers, maintaining insurance, and planning on how the disease will affect future family planning, schooling, and vocational activities. These activities can be operationalized through the development of a written transition plan. This can be done by assessing their understanding of their diseases and their own self-efficacy in disease management, which can be facilitated through the use of available transition tools. This preparation includes discussion of the changing role of the parents during the transfer process. Activities such as developing "medical passports" 11,12 or a "portable medical summary" 13 can be helpful in this area. For those patients whose parents will need to be their primary caretakers, legal processes for power of attorney or medical proxy need to be discussed. Ensure that the disease care and preparation during the transfer process are actively coordinated and discussed between the referring pediatric provider and the receiving adult provider. Make sure transfer to adult care is completed. Clinics need to develop systems to monitor and follow up either via case management or transition navigator on failures to transfer. The goal is to attain a seamless transfer of care and proper follow-up with accountability by the medical teams. A unique challenge to this type of transition of care is the cultural dissimilarity and resource differences between pediatric and adult systems. In pediatrics,

the parents are the focus in the patient decision-making process, whereas in the adult health care world, the decision-making is focused on the patient, and not necessarily the family. This shift in focus can be daunting for young adults; indeed, many are not prepared for this shift in responsibility. In addition, pediatric specialty- or primary care-based medical homes tend to be better resourced, which allows for extensive multidisciplinary care in a singular location, a situation that is often not mirrored in the adult care system. Consequently, young adults must be much more active in their own case management when they transfer to the adult care system. This change emphasizes the need for including pediatric patients early in decision-making and ensuring they know how to handle their own care management to ensure a smooth transfer of care. Quality improvement in transitions starts with the understanding that adolescents and young adults with chronic disease need to acquire general life skills as well as disease-management skills. Many medical societies have made disease-specific recommendations readily available Table. For example, if a clinic wished to address the issue of transfer in this vignette, the clinic could have a follow-up call built in to the scheduling Plan , then call the patient in 3 months after the last visit Do. This follow-up would have alerted the pediatrician or pediatric cardiologist that no follow-up appointment had been made which would indicate a failure of transfer. The clinic could then have started tracking those who did and did not transfer within a set time period Study ; this tracking, in turn, would help identify barriers to transfer, such as receipt of disease instruction, receipt of transition planning, or provider access. This data could then help the clinic decide what other steps were needed, such as passport generation Act , which then leads back to planning on implementation and repeating the PDSA cycle as part of continuous quality improvement. Outcomes for transition, such as transition readiness scores e. The responsibilities of the pediatric program are to prepare, provide summary information, and to seek acceptance by a qualified and available adult provider. The adult provider ideally would assist with patient access needs adult programs and insurance navigation and inform the pediatric referring provider of completion of the first visit. Using quality improvement techniques to implement clinical improvements in care in transitions would likely prevent the case scenario described in this vignette. Take-Home Points The process of preparing or transitioning a youth with a chronic condition for the eventual transfer to adult health care can take years. It is critical that patients learn how to care for their condition while learning how to navigate the complexities of the health care system over the entirety of their lifespan. Many youth may not understand that a surgical repair of a congenital anomaly or that a past treatment such as with chemotherapy requires maintenance to sustain continued health and wellness. Ensuring continuity of care is critical; part of this is accomplished by helping patients to understand the importance of regular health care visits. Transfer completion happens with a successful visit with the adult providerâ€™not with the identification of an adult provider. A variety of quality improvement techniques and tools are available to help aid clinics and hospitals in creating more seamless transitions from the pediatric to the adult health care world.

Chapter 3 : EHR transition | The Skeptical Cardiologist

The time of discharge from the hospital after an admission for an exacerbation of heart failure (HF) is one of the great challenges for patients and their families as they attempt to make the successful transition from the hospital environment where they have no responsibility for their own care, to.

Posted on May 1, by Larry Sieb Aging baby boomers, new clinical therapies, and evolving regulations are increasing the work load of interventional cardiologists. Do these three factors represent a Perfect Storm for cardiology? As the baby boomers age into retirement they are also entering the peak of cardiovascular disease. Cardiologists are also entering retirement resulting in a shortage of specialists to deal with the increased influx of patients. The last ten years have seen major advances of less invasive treatments for major types of cardiac disease. Most notably heart valve replacements and ablation therapy for atrial fibrillation are now routinely treated by interventional cardiologists. The new therapies are further increasing the demand on interventional cardiologists and on cardiac catheterization laboratories. As if the increase in demand driven by the aging population and new interventional therapies was not enough, the healthcare system is in a major sea change. The payment system is starting to shift from fee-per-service to value-based care in This change will occur over the next few years. The rules for the new payment systems are evolving resulting in increased demands on providers for additional documentation of clinical decisions and procedures. Providers performing better than average will receive increased Medicare reimbursements and those providers performing below average will see decreased Medicare reimbursements. Interventional cardiologists are just starting to deal with a larger patient base, more of whom will be treated in the catheterization laboratory, and will be working with an evolving payment system requiring more documentation. Changing Population Demographics The baby boomers are not only moving into their retirement years but are also moving into their peak cardiac disease years. The US Census Bureau projects that the 65 and older population is projected to grow from The changing demographics of the population is reflected in the interventional cardiologist population as well. Estimates of the shortages of interventional cardiologists vary but the rate of retiring cardiologists has not been balanced by a growth in fellowship positions. Reasons for the projected shortages vary as well. In addition to the changing demographics, other factors listed include the increased demand and the lack of growth in fellowship positions. All estimates agree that there will be insufficient interventional cardiologists to meet the meet in ten years. Cardiovascular disease is increasingly being treated in cardiac catheterization laboratories. Minimally invasive techniques have been developed and proven for disease once treated surgically if at all. Clinical Therapy For various types of heart disease, the preferred treatment has moved from open heart surgery to minimally invasive techniques, either minimally invasive surgery or delivered via a catheter transcatheter similar to angioplasty or stent placements. In come cases, a combined minimally invasive surgical approach and transcatheter therapy provide the best results. For example for multi-vessel coronary, a minimally invasive surgically technique is most effective on a particular artery left anterior descending coronary while stents in other vessels inserted with a catheter by an interventional cardiologist are more effective in the other vessels. Similarly ablation therapy used to treat atrial fibrillation may be a combined surgical and catheter based procedure. Each procedure is more effective to access different areas of the heart. More recently, heart valve replacement surgery is being replaced with a transcatheter procedure by an interventional cardiologist. This started with pulmonary valve replacement for pediatric patients, followed by aortic valve replacement, and now mitral valve replacements for adults. All of these new therapies create an increased demand on interventional cardiologists. As the types of interventional procedures have increased so have the reporting requirements. It is the only registry approved by CMS for transcatheter valve replacement reporting. In addition to the TAVI registry, the ACC maintains nine additional registries for various types of cardiovascular transcatheter interventions. Most facilities elect to participate in the non-mandated transcatheter registries as well as those mandated by CMS. The other registries are employed for quality control and provide outcomes data to insurance companies. Regulatory The healthcare system is moving from the fee-for-service to value-based payment models. MIPS also adds an additional measure: Clinical Practice Improvement

Activities. Medicare reimbursement gets adjusted based a weighted average of these four components. These models are few to start with and more models are under development. Most physicians will fall under the MIPS payment plan initially. However, the program plan is to move everyone to a APM in the future. Supposedly there is more flexibility in the program in when data submission starts than in the following year. All of the measures under both payment plans must be carefully documented and reported. However, some of the measures require additional documentation and reporting. ACU includes criteria for transcatheter procedures by interventional cardiologists. Additional complicating factors are bundled payments where the hospital is paid for an episode of care which includes not just the inpatient stay and associated interventional procedures for a cardiac event but also any related services for 90 days after discharge. The rationale being that higher quality of care and results in fewer post procedure complications. As most cardiologists are now hospital employees, hospital administration will be watching these events very closely. All of these changes result in increased responsibilities for the interventional cardiologist and a measure of uncertainty as the policies evolve. This environment may also lead to earlier retirement of older cardiologists. This entry was posted in General.

Chapter 4 : Transition from Inpatient to Outpatient

For Professionals - Cardiology Transitions and Recovery Denver Health plays a central role in helping patients transition from hospital to home, so you can eventually return to normal life.

Poor follow-up care Diabetes In addition to diagnostic testing to determine medical causes, it is essential that the practitioner carefully question the patient and family about the events leading up to admission to determine the contribution of nonadherence and psychosocial causes to admission. Given that patient nonadherence is the most common cause of admission, it is tempting for clinicians to "blame" the patient. Clinicians must remember that the most common cause of nonadherence is failure of health care providers to provide patients with the information, skills, and support that they need to be adherent. Optimization of fluid status In most cases, patients admitted with an exacerbation of HF suffer from substantial fluid overload. Yet, it is common for patients to be released from the hospital having experienced minimal or no weight loss, only to be readmitted soon after discharge. This cause of readmission is completely preventable by close attention to fluid status using accurate daily weights, and fluid balance calculations and adjustment of diuretics to achieve weight loss consistent with elimination of fluid overload. Transition from intravenous to oral diuretics At least 24 hours should elapse from the time of transition from intravenous to oral diuretics before discharge in order to determine if the transition has been successful. Weight should continue to be lost and the patient should remain stable and symptom free. Patient and family have completed necessary education What is considered "necessary" education is controversial. This is most likely because time for education is limited in the hospital, education has never been a priority, and few clinicians are adequately trained to provide excellent patient education. In addition, hospitalized patients are often fatigued, anxious, and feeling unwell, and as a result are less likely to retain information they are given. Nonetheless, patients cannot be released home without some fundamental knowledge or skills. It is essential that patients and their informal caregivers understand which medications and what doses they are to take. Education on this topic must include the following at a minimum: Health care providers must ensure that plans are in place for their patients in order to optimize postdischarge outcomes. For example, when daily weights are recommended to follow fluid status, does the patient have a scale or can they get one? Can they read or get on the scale they have? Can they afford any new medications that they have been prescribed? Will they be going home alone, and if yes, can they truly manage alone? Do they have active comorbidities that can interfere with HF management and are there plans in place to manage these comorbidities? Many patients can benefit from one or more visits from a home health nurse after discharge and telephone follow-up within a few days of discharge to continue necessary education. In fact, it is important that education be continued as one-time education sessions are inadequate to prepare patients for long-term self-care. Chronic outpatient drug therapy is optimized or near-optimized Given the high risk for rehospitalization if outpatient drug therapy is not optimized and the risk of adverse events when patients are discharged with instructions for changing doses of medications at home, it is important for clinicians to work on optimization of drug therapy while the patient is hospitalized. One effective way to determine how symptomatic patients are on given doses of medication is to assess their functional status while you are walking with them in the hospital hall. The vast majority of clinicians assess functional status while the patient is lying in bed and as a consequence, many patients who are symptomatic with activity are missed, and drug therapy is not appropriately optimized. Proper assessment of functional status is essential to optimization of therapy. Have a follow-up appointment scheduled within 7 to 10 days The first week to 10 days following discharge from the hospital for an exacerbation to HF constitutes a time of great vulnerability for many patients with HF. Many patients do not understand their drug regimen, even after receiving written instructions. Many patients continue taking discontinued medications, do not take new medications, or do not fill new medication prescriptions. Problems with functional ability are more evident once patients are home and begin to resume regular activities. Thus, it is imperative that an appointment for follow-up of the exacerbation of HF be schedule no later than 10 days after discharge. If a follow-up appointment is scheduled early, problems that could lead to rehospitalization can be picked up and rehospitalization prevented.

Providing patients and informal caregivers with the information and support needed to assume responsibility for their own care once home Always identify the informal caregivers for each patient and include them in education and counseling sessions. Information about what specific knowledge and skills patients and informal caregivers need to engage in effective self-care at home is available from an American Heart Association scientific statement, which is available online from the American Heart Association website. Self-care recommendations advocated for patients with HF include: Taking all medications as prescribed Following a low sodium diet Monitoring for changes in symptoms and acting early when symptoms increase Remaining active Stopping smoking and restricting alcohol intake Managing comorbidities Obtaining flu vaccines and engaging in other preventive care Navigating the health care system effectively and dealing with communications from multiple providers This list includes many activities that are quite difficult and that clearly require continued education and support from the health care provider. Referral of patients and their informal caregivers to available HF services or HF disease management programs is an excellent way to increase the support and education they receive. Using such services, patients remain under the care of their primary healthcare provider, but they receive supplemental, intensive care from HF specialists. Patients commonly need substantial support to become and remain adherent to their medication regimen. Adherence decreases with time in most HF patients. In one of our studies, we found that the most common reasons that people were nonadherent with their medications was because they continued to follow their old medication regimen after hospital discharge and because they did not understand how to follow the new one even though all received a written medication list. Other common reasons were that they received conflicting advice from different health care providers and finances prevented them from buying their medications. These reasons for nonadherence underscore the importance of intensive education and support. Below are some facts that the health care provider must keep in mind when supporting patients and some strategies known to increase patient adherence. Knowledge is necessary but not sufficient to achieve medication compliance. Engage the patient to undertake a greater personal role self-care in managing his or her heart failure. Identify the patients able to self-dose, and teach these patients how to medicate with diuretics based on changes in body weight. Use once daily dosing whenever possible. Consider providing preprepared pill dispensers or teaching patients how to use pillboxes to facilitate their remembering to take medications regularly. Talk to informal caregivers about their preparing pillboxes for patients if appropriate. Assess potential barriers to medication compliance such as lack of knowledge, memory problems, finances, and beliefs or values that are inconsistent with medication-taking behavior. Make sure that all pill bottles are labeled in large print with the drug name and dosing regimen. Provide patients with an updated medication list at each visit and ask them to tell you what pills they are taking and how often to uncover misconceptions about their regimen. Do not assume that patients are taking all of their medicines all of the time. Be open to hearing about problems and working through solutions. Ask, "are you having trouble taking any of your pills regularly? This resource packet is available at <https://www.heartfailure.org/education>: Other important resources to support patients and caregivers are available from the Heart Failure Society of America. A series of education modules are available for clinicians to download and give to patients, or for patients to download. Ensuring vigilant, coordinated follow-up of the patient once discharged This final goal is often unmet in the current health care system, but use of a transitional care model of care in which this goal is met has been found to reduce healthcare costs, reduce rehospitalizations and improve other outcomes in vulnerable high risk patients, including those with HF. Transitional care is the process of ensuring coordination and continuity of healthcare during the many transitions that patients experience as they traverse the healthcare system. Although there have been many variations of the transitional care model tested, the following characteristics have been demonstrated to be important for good outcomes: Although not all health care providers will have access to such programs, it is increasingly common for home health agencies and hospitals to have incorporated aspects of the transitional care model into their services. Health care providers should refer their HF patients, particularly those at risk for rehospitalization, to such programs when available. Clinical practices with multiple providers can hire an advanced practice nurse into the practice to assist in the care of high-risk patients with HF by using the transitional care model. Ultimately, whatever method clinicians choose to use in managing their HF patients at risk for rehospitalization, it is essential that patient follow-up

be frequent, and that patients have easy access to a knowledgeable person in the office who can offer concrete advice about what to do with escalating symptoms and problems or questions with medications. Achievement of this goal will reduce patient readmission rates and improve their quality of life. Early rehospitalization after discharge for an exacerbation of heart failure remains common. The cause of most rehospitalizations is failed self-care. The most common reason for poor self-care is the failure of health care providers to give patients the support, skills, and knowledge they need to engage in effective self-care. Thus, the goal of providing optimal support for the patient making the transition from inpatient to outpatient is to reduce the high rate of rehospitalization by not discharging patients until it is appropriate to do so and by promoting optimal self-care abilities in patients and families or other informal caregivers. If clinicians can meet this goal, they can expect decreased day and longer-term readmission rates, fewer emergency department visits, and fewer emergent office visits. Some HF disease management programs will see patients while they are still hospitalized, assisting in the transition from inpatient to outpatient. Many hospitals are now instituting HF services that are managed by nurses in order to decrease the number of HF readmissions that occur within 30 days of discharge. These services are usually free to patients. Practical recommendations from the patient care committee of the Heart Failure Association of the European Society of Cardiology". Eur J Heart Fail. These heart failure guidelines provide self-care recommendations. The article documents the marked impairments seen in many patients upon hospital discharge from an exacerbation of heart failure, and the many problems they have with self-care very early after discharge. The central role of nursing and its leadership". The importance of transitional care in achieving health reform". Translation of research into practice". J Eval Clin Pract. These articles include discussion of outcomes of use of specific transitional care models. Promoting self-care in persons with heart failure: A scientific statement from the American Heart Association". This is the first scientific statement to focus on promotion of self-care in patients with heart failure. It provides important information about how to provide the appropriate skills and knowledge. Additional information about specific skills and knowledge needed by patients is available from the Heart Failure Society of America heart failure guideline, which is available online from the website of the Heart Failure Society of America. No sponsor or advertiser has participated in, approved or paid for the content provided by Decision Support in Medicine LLC.

Chapter 5 : Transitions in Adolescent Medicine | AHRQ Patient Safety Network

An added challenge that may occur is when hospitals not currently using the 99th percentile transition to high-sensitivity assays Society of Cardiology.

Chapter 6 : MAtCH Transition Program

With the ever increasing number of paediatric patients graduating to adult services, there is a pressing need to improve and expand training for cardiology and nursing trainees, particularly in the area of transition.

Chapter 7 : Transition Program for the ACHD Center at Children's Hospital

Posts about EHR transition written by Dr. Anthony P. For the past 6 weeks I and the several hundred other ambulatory physicians who belong to the St. Luke's Medical Group have been going through a difficult transition; we've changed the software that we use to manage patient information.

Chapter 8 : Transitions of Care Challenges in Cardiology

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Chapter 9 : Cardiology : Transition

Interventional Cardiology in Transition Posted on May 1, by Larry Sieb Aging baby boomers, new clinical therapies, and evolving regulations are increasing the work load of interventional cardiologists.