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CATH LAB EDUCATION

Moving into Interventional Cardiac Procedures: A Foundation for an Education Plan

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Your institution has made the decision to include percutaneous coronary interventions (PCI), with or without open heart surgical back-up, in their cardiology service line. While you are addressing construction, equipment and personnel issues, attention also should be focused on educational needs. A detailed educational plan for key staff members intimately involved with the project, as well as those who work in supporting areas, should be developed.

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This will provide the platform for organizing and validating educational activities required to support program development. The educational plan should be coordinated to coincide with progression of the project. A good plan will answer the following questions:

- Who needs the education?
- What needs to be taught?
- When to conduct the education?
- How to provide the education?

I. Who needs the education?

Begin by assessing your patient flow to identify the core departments and staff members that will be involved with this new service. These departments can include the cardiac catheterization lab, intensive care areas, and the intermediate care units. As the majority of patient care will be provided by these departments (pre, intra and post procedure care), expect to provide the most intense education for these existing staff members. Current staff should be supported by the hiring of experienced personnel. Although difficult to recruit, their knowledge and advanced skills become invaluable to the program. Educational opportunities for staff beyond the core group of care providers needs to be planned for as well. These supporting departments include the emergency department, laboratory, pharmacy and cardiac rehabilitation. All additional areas require education regarding their specific role in caring for these patients and an explanation of the new services. Finally, the entire institution will need basic information about the new program.

II. What needs to be taught?

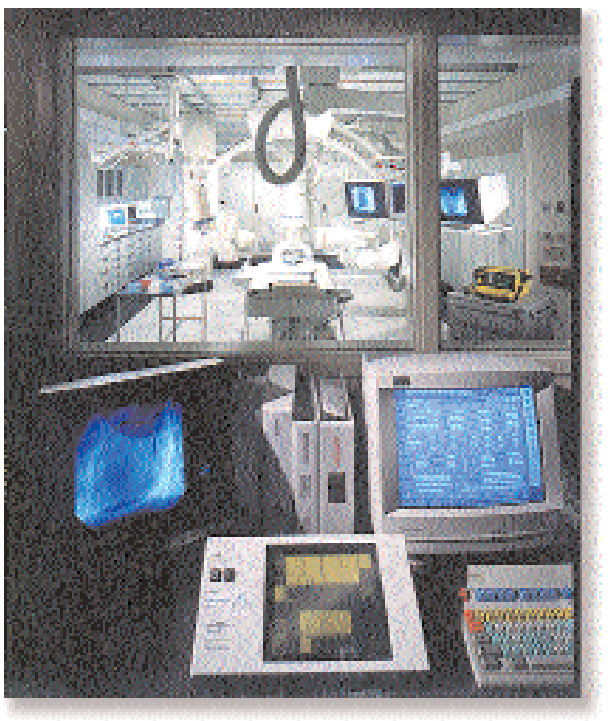
Each of the affected care areas will require a different depth of education; however, some topics will overlap. It is probably best to begin by planning for the most intense education, recommended for the front-line departments. The cardiac catheterization lab, critical care and intermediate units will need education specific to patient preparation, performing the interventional procedures and post procedure care. Supporting departments will need education related to procedural changes and care expectations. The organization as a whole will need information on the basic aspects of the service, such as timeframe, brief explanations of procedures offered, physicians involved, career opportunities and community benefits.

Initial planning should focus on the cardiac catheterization lab, critical care and intermediate units to allow for adequate time to address all potential education needs and issues. There are a few unique factors specific to this new service that warrant additional time and planning:

1. Off-site training for clinical staff members;
2. Education and training for new equipment and devices.

A well-organized plan for educational programs will coincide with the time frame set for the start of your program, ensuring that quality care will be provided to your patients.

Off-site training will provide the opportunity for "hands on" experience, which is especially useful to the cardiac catheterization lab staff members who do not have prior interventional experience. It can be challenging to locate a facility willing to provide this type of clinical opportunity. For this reason, a key project team member should be assigned early in the project implementation with the responsibility for identifying a clinical site and coordinating the details between the facilities. Take into account that it is especially beneficial for the staff to have this clinical experience at a facility where your cardiologist performs procedures. This will provide the opportunity to build a strong physician-to-staff working relationship. Expect that most sites will want a formal contract and legal reviews before the staff can be scheduled. It's important to also recognize that finding the facility and then finalizing the contract can be lengthy and time-consuming; you should plan to begin this task early.



To ensure all newly purchased equipment and devices are scheduled for vendor-provided inservices, an early review of the equipment list is necessary. Inservicing should be scheduled at various times to allow you to capture all staff members that will be utilizing this equipment.

Didactic content on specific interventional procedures and post procedure care is an essential component for this educational process. Anticipate also that the patients' acuity level will be elevated in the front-line departments once these procedures are available. For this reason, additional patient care topics may need to be presented. To identify what topics may need to be incorporated, consider administering a staff education needs assessment. The needs assessment permits the staff to have input identifying educational topics that would be of benefit. A needs assessment can be focused or open-ended. A focused needs assessment provides the staff with a list of skills required to care for higher acuity patients, and asks them to rank their comfort level with each skill, identifying areas where education would be beneficial. This type of assessment tool can be developed by referencing your institution's skill competency list for critical care or utilizing a professional organization's recommendations, such as the American Association of Critical Care Nurses, (AACN). An open-ended assessment allows the staff to identify topics where they need additional education. Returned assessments are then summarized and addressed through educational opportunities.

The higher acuity patient care education should be provided by critical care educators, supplemented by experienced interventional staff members and cardiologists. Staff can attend courses or seminars off-site. Education can also be provided by professional, experienced consultants on-site.

Many of these didactic lectures can also provide an opportunity for continuing education units (CEUs) or contact hours for the professional staff that attends. The decision to provide this option should be determined in the initial planning stages to permit time to complete the application process for the various accrediting boards.

III. When to conduct the education?

A well-organized plan for educational programs will coincide with the time frame set for the start of your program, ensuring that quality care will be provided to your patients. There are a few points to consider when planning the actual timing of the education. Didactic lectures for staff members that are scheduled for off-site clinical training should be provided prior to this training. The detailed presentation of the interventional procedures and patient assessment

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topics will provide the staff with current education for application in their clinical experiences. Always use the project timeline as a reference in planning education for the clinical staff, working backwards from the implementation date. Off-site education should be finished by initiation of services. Didactic education for staff not attending off-site training should be scheduled close to the implementation date. Attendance at these education sessions should be viewed as a priority. Early in your planning, secure the approval of your cardiologist and administration to alter the cath lab schedule in order to facilitate staff attendance at these sessions.

A detailed education plan also serves as a method to document and validate the provided education opportunities. This documentation is valuable for any future regulating agency reviews.

To introduce the program to the rest of the organization, brown bag information sessions can be a good starting place. This will let everyone be informed of the progress and encourages them to begin to think about how they may be affected by the new services. Employees that are well informed are much more likely to support the program.

IV. How to provide the education?

In today's increasingly complex health care environment with staffing shortages and budget constraints, it is difficult for institutions to approve non-productive time for education. Hospitals can be successful by looking beyond the traditional classroom settings for opportunities that can be offered during unplanned departmental down time. Some examples include poster presentations, self-learning modules or lunch time lectures series. These non-traditional classroom methods are supplemental to the formal series. They can be utilized to provide information on a new supply or procedure change. We have also provided a chart with a sample plan identifying affected departments and outlining the education suggested.

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Department (Who)	Topic (What)	Timeframe (When)	Method (How)
Cardiac Cath Lab	1. Coronary anatomy and physiology review 2. PCI – indication/ contraindication 3. Patient preparation 4. Equipment and supplies 5. Review of interventional procedures 6. Intra-procedure care 7. Preparing for emergency CABG 8. Vascular closure methods and devices 9. Advanced pharmacotherapy review 10. Organize a dry run scenario for elective and emergent cases prior to implementation	Prior to off-site training **or begin** 1–2 month(s) prior to implementation	1. Self Learning Module 2. Formal lecture 3. Formal lecture 4. Vendor provided 5. Formal lecture 6. Formal lecture 7. Formal lecture 8. Formal lecture & Vendor 9. Formal lecture 10. Dry Run Simulation
Critical Care	1. Coronary anatomy and physiology review 2. Overview of new procedures 3. Immediate post procedure care 4. Potential complications post procedure & TX. 5. Sheath removal and closure devices 6. Post procedure pharmacologic interventions	Begin 1–2 month(s) prior to implementation	1. Self Learning Module 2. Formal lecture 3. Formal lecture 4. Formal lecture 5. Formal lecture & Vendor 6. Formal lecture
Intermediate Care Units	1. Coronary anatomy and physiology review 2. Overview of new procedures 3. Immediate post procedure care 4. Potential complication post procedure & TX. 5. Sheath removal and closure devices 6. Post procedure pharmacologic interventions	Begin 1–2 month(s) prior to implementation	1. Self Learning Module 2. Formal lecture 3. Formal lecture 4. Formal lecture 5. Formal lecture 6. Formal lecture
Emergency Department	1. New treatment protocol – primary angioplasty 2. Cath lab call in procedures 3. Overview of new procedures	Begin 1–2 month(s) prior to implementation	1. Formal lecture 2. Formal lecture 3. Formal lecture 4. Involve in emergent dry run
Physician's Office Staff	1. Review registration & pre-procedure preparations for new services of elective and primary angioplasty	1–2 month(s) prior to implementation	1. Meeting with office staff 2. Involve in elective case dry run
Registration	1. Review registration & pre-procedure preparations for new services of elective and primary angioplasty	1–2 month(s) prior to implementation	1. Meeting with registration staff 2. Brown bag lecture 3. Involve in elective case dry run
Pre-admission Testing	1. Review pre-procedure preparations for new services of elective angioplasty	1–2 month(s) prior to implementation	1. Meeting with office staff 2. Brown bag lecture 3. Involve in elective dry run
Case Management	1. New treatment protocols – elective and primary angioplasty *Should be invited to all formal lectures*	1–2 month(s) prior to implementation	1. Formal meetings with Case Management 2. Brown bag lecture
Respiratory Therapy	1. Protocol for Emergent Cath Lab Patient to CVOR	1–2 month(s) prior to implementation	1. Meetings with RT staff 2. Brown bag lecture
Lab/Blood Bank	1. Order set review	1–2 month(s) prior to implementation	1. Meetings with management staff of lab and blood bank 2. Brown bag lecture 3. Involve in elective and emergent dry run
Pharmacy	1. Order set review 2. New Drugs	2-3 months prior to implementation	1. Meetings with Department 2. Brown bag lecture

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The implementation of advanced cardiovascular interventions is a major undertaking for the entire organization. A detailed educational plan is the first step toward accomplishing a successful start-up. It ensures appropriate personnel receive the needed information to provide these new services. The plan's second step is to incorporate methods to maintain on-going education.

A detailed education plan also serves as a method to document and validate the provided education opportunities. This documentation is valuable for any future regulating agency reviews. Thorough record-keeping, including sign-in sheets with outlines of the presented education topics, should be a part of every in-service. These records should be kept with the education plan for validation.

An organized approach outlining each department's involvement minimizes delays and answers the who, what, when and how.

The suggestions and examples in this article provide an overview of a recommended education plan for your facility before beginning interventional cardiac procedures. An organized approach outlining each department's involvement minimizes delays and answers the who, what, when and how. Educating personnel ensures your organization is safely and thoroughly prepared, and it is essential for the successful start of a patient-centered interventional program.

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Article Commentary

The article **"Moving into Interventional Cardiac Procedures: A Foundation for an Education Plan"** brought a neighboring city's experience to mind. About fifteen years ago, their hospital decided to start a diagnostic lab. Under an agreement with my hospital, they sent new staff for training and soon hired our lab's supervisor to finish getting the lab operational. The moral of this story is that knowing how to get a lab going — knowing things like what supplies to get and from whom — needs experience. Expecting it to be done by "bean counters" or in-house nursing staff (with the perspective that a 'nurse is a nurse is a nurse') is a mistake. These people most likely do not have the skills or knowledge necessary for this new sub-specialty.

The Powers That Be may not have a sufficiently clear plan on how to get things done. They may either macro-manage (I don't care how you do it. Let's plan on doing our first case next month) or micro-manage (How much are those catheters going to cost apiece? Why can't we use existing catheters?). I liked the authors' plan for a training program, but I'm concerned about properly stressing the importance and potential difficulty of getting all these different departments in line for a training program.

Departments involved should be determined by a committee that includes an experienced interventional cardiologist and hopefully, acquired experienced interventional staff who know what departments need to be included in the planning and training. Experienced people would catch problems early in an interventional program and correct them before they might become major issues.

The best example I can think of is requiring staff to acquire their Registered Cardiovascular Invasive Specialist (RCIS) credential.

Physicians also need a strong sense of hospital support. The invasive cardiologist(s) who will be utilizing the lab should have his or her concerns fully addressed up front and be involved (or at the very least, informed and included) in the process from the beginning.

One thing the authors do not make clear is who they are addressing as the person in charge of implementing this program. A hospital administrator who has no clue about patient care and therefore no reference point of what kind of staff education is needed? A committee made up of different department heads who have or have never had experience with interventional cardiac patients (but may have read a book on the subject) and now are expected to be experts on what needs to be done?

The authors note: "In today's increasingly complex health care environment with staffing shortages and budget constraints it is difficult for institutions to approve non productive time for education. Hospitals can be successful by looking beyond the traditional classroom settings for opportunities that can be offered during unplanned down time in departments."

The best example I can think of is requiring staff to acquire their Registered Cardiovascular Invasive Specialist (RCIS) credential. Offer the inducement of an increase in pay — or perhaps the highest test score gets a weekend at a bed & breakfast, for example. This approach would have the staff studying on their own and on material that would prepare them for their new future.

While the authors have presented a good plan, they should have highlighted the importance of choosing who will make up the committees involved in the educational process, and who will determine when the hospital departments are ready to accept their new duties (or if the departments involved have any say-so in their own sense of preparedness).

The most important thing is to have staff trained and prepared to use the devices, medications and tools necessary to help keep a patient (a human being) alive. If the hospital can spend millions preparing their facility for a new procedure, then there needs to be money and time made available for serious and thorough staff education. It is responsibility of the hospital involved to make sure their staff is trained properly.

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