

The American Board of Radiology: MOC

Diagnostic Radiologic Physics SDEP

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Example 1: Regulatory

■ Title: Understand HIPAA, the privacy regulations that emanate from it, and how the practice of radiology in a hospital must be altered to accommodate the regulations.

■ Category: Regulatory

■ Date Initiated:

■ Date Completed:

■ A. Significance:

I have been asked by the director of radiology to assume responsibility for ensuring that the practice of radiology in my institution meets all requirements for compliance with the HIPAA privacy regulations. This responsibility includes conducting educational seminars on the HIPAA regulations for department employees and physicians. I have also been asked to represent the department on a new privacy board established by the hospital to ensure HIPAA compliance.

■ B. Approach:

To fulfill these new responsibilities, I have designed a self-directed educational project consisting of the following steps:

- Meet with the new privacy officer in the hospital's general counsel office to identify (1) information that I should read to become familiar with the HIPAA regulations; (2) hospital policy guidelines that have been developed to address HIPAA compliance; and (3) individuals from other clinical services who have been assigned HIPAA responsibilities similar to mine.
- Download information on HIPAA and its implementation from the American Hospital Association, the American College of Radiology, and other sources of pertinent information identifiable through an online search.
- With these materials and individuals, pursue a program of reading and discussion with the objective of becoming knowledgeable about HIPAA and its impact on a clinical radiology service.
- Schedule an information series for (1) physicians and (2) departmental employees to explain HIPAA, its ramifications to radiology, and individual responsibilities to ensure compliance with privacy regulations.
- Ensure that adequate awareness and procedures are in place in the department to deidentify radiological images before they are presented in educational conferences or for other nonclinical purposes either within or outside the hospital.

- f. Before implementation, review all procedures and educational materials with the hospital's privacy officer to ensure their suitability for dissemination.

■ C. Evaluation of Achievement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

I will use three measures to ensure that my self-directed educational project is meeting my needs and those of the department. These measures are:

- a. Does the privacy officer agree that the materials and procedures I have developed about HIPAA meet the needs of the institution?
- b. Are my educational seminars well received, and do they meet the needs of the audience without requiring excessive time of the attendees?
- c. Are the procedures I have established to deidentify images being well received and used?

2. FINAL STATEMENT (provided at the date SDEP is completed):

An educational series for 1) physicians and 2) departmental employees was developed to explain HIPAA, its ramifications to radiology, and individual responsibilities to ensure compliance with privacy regulations. This series resulted from studies of several information sources, including both printed and electronic information identified at the start of the project as well as information uncovered during the project. The educational series and the information presented therein were reviewed in detail with the institutional privacy officer, who was a superb resource for review of the material and guidance of the entire project.

■ D. Impact on Practice/Outcome Statement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

I have been designated as the individual responsible for ensuring compliance of the department with HIPAA privacy regulations. This is an important and necessary role, and its assignment to me as a radiologic physicist reflects well on my role in the department. My objective is to establish an educational program and procedures for deidentifying images that are effective without being burdensome to physicians and departmental staff. If I am successful, the department will meet all compliance requirements with a minimum "hassle factor."

2. FINAL STATEMENT (provided at the date SDEP is completed):

The department has benefited in a substantive manner through initiation of the educational series on the Privacy Act and HIPAA regulations. The knowledge level about the need for confidentiality of patient information has increased, and the care that physicians and employees take to ensure the maintenance of confidentiality has been enhanced. I have been asked to help other departments initiate similar educational series and have been invited to speak about HIPAA to the physicians and staff of some departments as well. I am a member of the Institutional Information Security Committee and am often complimented about my knowledge of the Privacy Act and HIPAA regulations. I believe I have helped my department and institution maintain compliance with the HIPAA regulations and improve the respect that many hold for patients' right to privacy.



Example 2: Education

■ Title: Improve my knowledge and understanding of molecular imaging and its potential applications to biology and genetics.

■ Category: Education

■ Date Initiated:

■ Date Completed:

■ A. Significance:

I am increasingly being approached by basic scientists in my academic institution to explore how the Department of Radiology can help initiate and contribute to a core molecular imaging facility containing an animal PET scanner, a micro-CT scanner, optical scanning equipment, and other molecular imaging devices. It is clear that I am the principal person to identify the appropriate role and contribution of radiology to this endeavor.

■ B. Approach:

This is primarily a self-education project that will include the following efforts:

- a. Taking an introductory course in molecular biology/genetics offered to first-year graduate students in the biomedical interdisciplinary program of our graduate school. This is a one-semester course that meets 3 hours/week. As a faculty member of the institution, I can take the course without charge and have been admitted as a student in the course.
- b. Read several seminal articles on molecular imaging, including:
 - T Budinger, D Benaron, A Koretsky: "Imaging transgenic animals." *Ann Rev Biomed Eng*, 1999; 1: 611-648.
 - H Herschman, D MacLaren, M Iyer et al.: "Seeing is believing: noninvasive, quantitative, and repetitive imaging of reporter gene expression in living animals, using positron emission tomography." *J. Neurosci Res*, 2000; 59: 699-705.
 - M Phelps: "PET: the merging of biology and imaging into molecular imaging." *J Nucl Med*, 2000; 41: 661-681.

■ C. Evaluation of Achievement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

As a student in the introductory course, I will take and pass examinations along with the other students. This will provide an objective appraisal of my understanding of fundamental molecular biology and genetics. With respect to the goal of increasing my understanding of imaging applications to molecular biology and genetics, my ability to comprehend presentations on this topic at national and regional meetings, and to engage meaningfully in discussions with my basic science colleagues, will tell me whether I have gained an adequate understanding of the topic.

2. FINAL STATEMENT (provided at the date SDEP is completed):

I have completed my self-education project on molecular imaging, including participating in an introductory course on molecular biology/genetics and reading several articles on the topic. The

reading extended well beyond the list of references compiled at the beginning of the project and has resulted in my feeling comfortable in discussions about molecular imaging, biology, and genetics with basic scientists in my institution.

■ D. Impact on Practice/Outcome Statement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

My department expects me to be the contact person for basic scientists interested in developing a molecular imaging core facility in support of research in molecular biology and genetics. In addition, my department wishes to play a major role in the initiation and development of the facility and wants me to lead that effort for the department. This reflects the department's view that molecular imaging is a challenging opportunity for radiology in the future and wants to explore this opportunity for the department.

2. FINAL STATEMENT (provided at the date SDEP is completed):

The institution is investing \$5 million in a core molecular imaging facility, and I have been asked to oversee this facility and its equipment and personnel (one senior and one junior technician). This request has been made by the institution's senior administration, and half of my time is being purchased from the Department of Radiology to fulfill this new responsibility. This commitment of my time is a service to the institution and hopefully has enhanced its research productivity in molecular biology and genetics. My contribution will be possible only because of the self-education program I initiated about a year ago to learn more about molecular imaging and its potential contributions to molecular and genetics research.



Example 3: Equipment/QA

■ Title: Improve my knowledge of multislice computed tomography (MSCT) and the quality assurance (QA) procedures appropriate for it.

■ Category: Equipment/Quality Assurance

■ Date Initiated:

■ Date Completed:

■ A. Significance:

MSCT is gaining widespread acceptance and presents new challenges for performance evaluation. My department has ordered and will be installing a new General Electric LightSpeed Pro MSCT. I will be responsible for acceptance testing and QA of this unit. To fulfill this responsibility, I must educate myself on the technical challenges of MSCT and the procedures recommended for acceptance testing and QA.

■ B. Approach:

I know the technical specifications of the LightSpeed Pro unit because I have been involved in the decision about the vendor and the unit to be installed. To acquire knowledge about acceptance testing and QA, I will study the following reports and articles:

- American Association of Physicists in Medicine. Quality Control in Diagnostic Radiology. AAPM Report No. 74. 2002.
- J. Hsieh. Analytical models for multi-slice helical CT performance parameters. Med Phys. 30, 2003. 169-178.
- C. McCollough, F. Zink. Performance evaluation of a multislice CT system. Med Phys. 26, 1999. 2223-2230.
- G. Wang, C. Crawford, W. Kalender. Multirow detector and cone-beam spiral/helical CT. IEEE Trans. Med. Imaging 19, 2000. 817-821.

I will also perform a comprehensive literature search to identify other helpful references related to QA in MSCT. I have also negotiated a two-day trip to <location>, to be mentored by medical physicists who have three MSCT units in operation.

■ C. Evaluation of Achievement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

My objective is to gain knowledge and mentored hands-on experience sufficient to conduct a comprehensive acceptance and QA program for the GE LightSpeed Pro unit to be installed in my department. My ability to accomplish these tasks will serve as an evaluation of the degree to which I have met my objective.

2. FINAL STATEMENT (provided at the date SDEP is completed):

An educational program was initiated to improve my knowledge of multislice computed tomography (MSCT) and the dosimetric and quality control procedures associated with it. Those program required me to read several publications about MSCT, including and going beyond those identified at the onset of the educational program. I recently returned from a three-day trip to the Medical College of Wisconsin where I was able to operate and perform quality control measurements on a 64-slice General Electric LightSpeed Pro MSCT unit. I am now highly engaged in acceptance testing of a similar unit in my own institution.

■ D. Impact on Practice/Outcome Statement:

1. PROSPECTIVE STATEMENT (provided at the date SDEP is initiated):

MSCT is expected to become a routine clinical service in my department. The quality of this service will depend on the adequacy of the acceptance testing and QA program I will institute and conduct. Consistent with my responsibilities to assure quality performance of all imaging equipment, my ability to provide this assurance in MSCT will be essential to the use of this service.

2. FINAL STATEMENT (provided at the date SDEP is completed):

Both my institution and I have benefited from my engagement with the educational program related to MSCT. With the acquisition of a MSCT, my responsibility is to perform acceptance tests and to maintain a quality-control program to ensure that the unit functions satisfactorily on a day-by-day basis. I am able to meet this responsibility because I am now knowledgeable about MSCT and skilled in the testing procedures associated with it.