### Letter to the Editor

# The Thinking Technologist and Technologist Acquired Patient Histories

By participating in the practice of acquiring preliminary patient histories, the technologist has a chance to more fully understand the medical indications for scans and apply that information to upgrading the technical nature of scans. At the same time, increased communication with the patient leads to better patient-technologist rapport, and a more reassured patient.

Although not restricted to use by technologists, prepared history forms allow both physicians and technologists to have developed specific questions relative to each type of scan for guiding the technologist towards appropriate clinical information for each patient. Additional "history" space can be provided to allow both the technologist and the physician to individualize the information for both inpatients and outpatients. Relevant laboratory information may also be included when available. Fig. 1 is an example of a history form used in our department.

Before technologists begin acquiring preliminary patient histories, the technologists and physicians must be aware of the advantages and disadvantages of such a practice. While there may be many advantages, there are five worthy of mention: 1) the patient is reassured by the technologist's interest in their problem; 2) the history may direct the technologist to acquire non-routine images; 3) time delays waiting for physicians to complete the histories may be reduced with improvement in scheduling and scanning efficiency; 4) the work is more interesting for the technologists; and, 5) the practice frees physicians for other duties. Disadvantages of having technologists obtain patient histories include: 1) more work may result for technologists; 2) patients may not see the physician; 3) physicians may become lazy and inadequate clinical information might result; and, 4) the question of improper delegation of a physician function is raised.

Anything done to increase communication with the patient can only provide reassurance that treatment is done on an individual basis and not as just another "liver scan" or "bone scan." If technologists are to be technologists and not technicians, it is every bit as appropriate for technologists to obtain non-routine images that are prompted by the history before having the physician review the study. For example, caudal and lateral views of the sacrum may not be necessary as routine images. If a patient's history indicates previous trauma to the sacrum/coccyx the technologist would know to obtain views of these additional areas.

Of the disadvantages that might be realized by having technologists acquire patient histories, numbers 2, 3, and 4 listed above are all interrelated and raise the most concern. It is my feeling, however, that those physicians who appropriately see patients will not be less likely to do so because technologists

are obtaining preliminary historical information. In addition, a physician's training will almost always enable the physician to add to the preliminary information obtained by the technologist.

In order to complete the history form, all sources of necessary information should be explored. For inpatients, histories may most often be obtained from the charts and talking with the patient. The sections of a chart that might be helpful are the order sheet (to confirm the scan request), the admission history and physician examination, one of the last of several progress notes, consultation notes, and any abnormal lab results. For non-communicative inpatients (young or old) with inadequate chart information, or for outpatients who have little or no accompanying information from the referring physician, talking with the patient's relatives or calling the referring physician's secretary might provide valuable information.

Unanswered form questions are to be avoided. Completely

#### FIGURE 1

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#### BONE SCAN

PATIENT'S NAME	AGE		DATE
DIAGNOSIS			
TRAUMA	BODY SITE	WHEN	
FRACTURES	WHERE	WHEN	
SURGERY	BODY SITE		
PAIN	BODY SITE		
PREVIOUS OSTEOMYELITIS	BODY SITE	WHEN	
SUSPECTED OSTEOMYELITIS	BODY SITE	WHEN _	
RADIATION THERAPY	CHEMOTHERAPY		
KNOWN CARCINOMA	AREA		
RIGHT HANDED	LEFT HANDED		
HISTORY:			
	• •	-	
DOSE			
INJECTION SITE			
TECH SCANNING			

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blank answers, or answer spaces with lines (—) or circles (o) or checks ( $\checkmark$ ) through them do not indicate whether the answer is "no" or "none," whether the patient can't remember, or simply that the question was overlooked. During malpractice litigation and hospital inspections (e.g., by JCAH) medical records are of increasing use to evaluate self-imposed standards. Unanswered questions may suggest that a physician or technologist was not meeting the department's self-imposed standard for history evaluation. Therefore, if a question is important enough to be on a form, it should be answered to the best of the ability of the person taking the history.

Another important aspect of form completion is the actual art of asking the patient questions. Since some patients may be embarrassed or insulted by questions regarding cigarette smoking or alcohol use, it often helps to precede the questions with a statement that these are routine questions asked of all patients and that the answers will better enable the nuclear medicine physician to interpret their test results.

Appropriately phrasing a question avoids ambiguous answers and saves time, both essential to professional practice standards. Have you ever tried to obtain a history from a patient and asked "What brought you to the hospital today?" If you have asked that question then you have probably been told "I came by car." As silly as this sounds, asking a question that results in meaningless information only wastes time which can be significant when dealing with large numbers of patients. Another question asked of patients is "Why are you having this test?" The answer may be"... because my doctor ordered it." A better way to ask this question might be "What problem do you have that made your doctor order this test?"

In order to intelligently discuss the content of the form, the reason for having historical information must be understood. It is not uncommon for a referring physician to say that he wants the test interpreted without history for a non-biased interpretation. This approach ignores the major role of the nuclear physician as a consultant. In order to be a consultant, the nuclear medicine physician should maximize the value of scan information and advise the referring physician. The nuclear physician often utilizes a probability scheme for test significance. The clinical probability of a diagnosis must be compared with the test probability of a diagnosis with a resulting final probability of a diagnosis. The clinical probability is often based on historical information, examination findings, or abnormal laboratory results. An example of how the probability algorithm can be used for determining the presence of pulmonary emboli in a patient is one such example. When clinical suspicion that a patient has had pulmonary emboli is low in the opinion of the referring physician and the lung scan is highly suspicious, an angiogram may be appropriate to resolve the discrepancy. Conversely, if the clinical suspicion and scan suspicion of pulmonary emboli are both high or both low, additional pulmonary angiography may not be necessary. The nuclear physician is often asked to advise the referring physician as to the necessity of pulmonary angiography after the above probability algorithm has been considered.

The next area for consideration regarding history content relates to differentiation between diagnosis(es) responsible for the patient's hospital admission and the diagnosis(es) or problem(s) to be evaluated by the scan. For example, if a patient whose admitting diagnosis is congestive heart failure due to hypertension is found to have prostate cancer, it is not necessary for the bone scan history to discuss congestive heart failure or hypertension, but the report must note the suspected or proven prostate cancer.

Laboratory values often influence the probability of a diagnosis and should be included on a pre-prepared history form when appropriate. An equivocal bone scan abnormality might be considered more significant if the patient has an elevated bone alkaline phosphatase level. Similarly, a better thyroid scan interpretation might be rendered if results of thyroid function studies and thyroid antibody levels are made available.

Saving previous histories serves to provide valuable historical information at the time of the next scan. Repeat histories add nothing, however, if they are stamped "see old history." If a woman with breast carcinoma has periodic bone scans, the most important new information relates to the time interval since the previous scan. The question is not, "Has the patient had chemotherapy or radiation?" but, "Has the patient had chemotherapy or radiation since the previous scan?, Has the patient developed pain since the previous scan? and, Has something changed for the better or worse since the previous scan?"

Conscientious nuclear physicians will want to continue obtaining supplementary histories and performing appropriate examinations. Physicians have the responsibility of continuing appropriate patient contact and avoiding the mappropriate delegation of total "history taking" to technologists.

Technologists need to perform history taking to the best of their ability, keeping in mind the importance of historical information and using the historical information for selecting nonroutine image views. The technologist's other responsibilities should not suffer because of time committed to obtaining histories.

During the three years in which technologists have acquired preliminary patient history information on prepared history forms in our department, technologists have become professionally as well as technically more sophisticated and thorough. Nuclear physicians have continued appropriate patient contact, and patients seem pleased and reassured by the additional interest afforded them by the technologists concerning their medical problems.

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