

The NMTCB acknowledges that our profession remains in a constant state of evolution. In recent years, the rapid growth of PET technologies, cyclotron produced radioisotopes, and the hybridization of many of the formerly stand-alone imaging modalities have all greatly expanded the boundaries of nuclear medicine technology. In addition, the often-scarce availability of reactor-produced isotopes has and will continue to push the profession toward change. To remain relevant we must be inventive and adapt to contemporary trends. As an organization, the NMTCB remains committed to the challenge of keeping pace with changes that affect the knowledge and skill requirements for technologists entering the field. The process by which the content for the NMTCB entry-level examination is periodically updated through is referred to as "task analysis". In the spring 2009 edition of the NMTCB newsletter, preliminary findings of the task analysis survey were discussed. This fall 2009 publication will serve as the announcement of pending content changes to the entry-level nuclear medicine technology examination. Educators preparing students for the examination are being given a one-year notice of the new material to be incorporated into examination content. Prospective certificants can expect to see the proposed new content on the examination beginning January 1, 2011.

As a refresher, a brief synopsis of the task analysis process will follow. The task analysis procedure has three main components, which ultimately manifest in changes to the content of the entry-level nuclear medicine technology examination the NMTCB offers. First, the NMTCB develops an instrument, and a random survey is conducted. Second, the results of the survey are analyzed and assessed for their criticality in current practice of nuclear medicine technology. Finally the results of the data analysis are incorporated into the documents that outline the content of the examination. There are three main documents that the NMTCB uses the information from the task analysis to update. They are the task list (TL), the detailed equipment and procedures list (DEPL), and the components of preparedness statement (COPS).

During the spring 2009 NMTCB Board meeting, the results of the survey were presented by the task analysis committee. A discussion was held by the full Board as to the changes to be made to the examination content. A set nominal cutoff was not used in determination of changes to be made to the examination content. The task analysis committee rather relied on a combination of usage of numerical parameters to identify items to be considered for modification. Items on the current examination falling below 15% on the survey were all reviewed for their criticality in current practice of nuclear medicine technology. Items not currently on the examination that scored above 15% were taken into consideration for addition to the examination. From there, expert opinion of the task analysis committee, and other Board members further guided the decision of whether items were to be added to, or removed from examination content.

The survey instrument that was used to conduct the task analysis was developed based on the content of the current TL, DEPL, and COPS. It also incorporated items that were considered to be possible additions to the content base. The original survey draft form was sent to a small number of certified nuclear medicine technologists. The questions on the survey required respondents to rate the frequency with which they performed each task. Participants were also asked to indicate the equipment, pharmaceuticals, and procedures that were routinely utilized at their facilities. Equipment, pharmaceuticals, and procedures were not subjected to a frequency scale due to the fact that many, by nature, are not performed with great frequency, such as I123 MIBG, red cell mass, and others. Once problem areas on the survey were addressed, a revised instrument was sent out to 1200 randomly selected CNMTs. Of the 1200 surveys sent out, 572 were completed and returned by the specified deadline. This yielded an acceptable response rate of 47.7%. The data was analyzed and sorted by the NMTCB psychometric consultant, and the results were forwarded to the NMTCB task analysis committee for review.

The components of preparedness statement (COPS) document can be most useful to educators and candidates preparing for the examination. The COPS is a detailed description of the basic tasks involving the items listed in the more concise task list (TL). This includes nuclear medicine equipment, procedures, and pharmaceuticals that a nuclear medicine technologist working in a variety of settings could likely be exposed to. Once in publication the new COPS will

be sent to all known nuclear medicine technology educational programs. New programs or those that have had recent changes in location or accreditation should contact the NMTCB directly to ensure timely delivery of updated information. The most current iterations of these documents will also be available on the NMTCB website at www.NMTCB.org as of Jan 1, 2010.

Items that will be removed from the entry-level examination include: hemocytometer, wet film, venogram, schillings test, I125 serum albumin/RISA, I125 lothalamate. The task data results were also discussed and the only active items falling below 15% were the dose calibrator geometry test, red cell mass, and plasma volume studies. It was decided based on criticality that the items would remain on the exam. At the fall 2009 NMTCB Board meeting the task analysis data was reviewed again. Final changes were discussed, including the deletion of several items that are no longer available. The following items have been added to the list of items to be deleted since the spring 2009 publication: P32 chromic phosphate colloid, P32 sodium phosphate, B12, and Tc99m gluceptate.

Items to be added to the examination content were in the area of computed tomography (CT). Since the advent of the hybrid/fusion imaging technology, our field has become increasingly intertwined with other modalities. The foremost of these is obviously CT. Based on the responses given via the task analysis survey roughly 25% of nuclear medicine technologists surveyed are already performing CT examinations. Many of these are low-dose CT scans, being used solely for attenuation correction or localization in conjunction with a PET or SPECT nuclear medicine imaging system. There are however a significant number of nuclear medicine technologists already performing diagnostic quality CT examinations that may involve the use of contrast agents. For the NMTCB's examination to remain relevant, this trend must certainly be reflected in upcoming nuclear medicine technology certification examinations.

It initially was the consensus of the NMTCB Board of Directors to retain the integrity of the groupings of tasks within the task list. Upon review of recent exam data by the NMTCB psychometric consultant, a change was deemed necessary. With proposed additional content in the area of non-radioactive pharmacologic agents, more exam exposure will be needed for this category of examination items. Items in the current task list item 40 will be moved from subgroup III clinical procedures to subgroup IV radiopharmacy. Subgroup IV will be renamed radioactive and non-radioactive pharmacologic agents. Due to the aforementioned changes, the numbers assigned to several tasks will have to be reassigned. The former task 40 will have Oral/IV contrast added to it, and numbered as task 42 in subgroup IV. The former tasks 41 and 42 will be changed to 40 and 41 respectively. It was decided to also make the following alterations to the task list (TL). Tasks 22 and 23 will be combined into one task 22. The new task 23 will be to Perform and evaluate quality control on the CT imaging system.

The detailed equipment and procedures (DEPL) list will have CT specific content added to include quality control, equipment, computers, procedures, contrast agents, and interventional pharmaceuticals. The components of preparedness statement (COPS) will be altered to reflect the aforementioned changes in the task list. In addition, significant additions will be made in task 28 with regard to patient care items that are unique to CT. The other area that will be affected is task 36, where an entire new section will be integrated to include equipment preparation and image acquisition for CT.

In conclusion, the NMTCB has made a good faith effort to explain the upcoming examination content modifications. It is imperative that entry-level nuclear medicine technologists have a thorough understanding of all facets of the practice of nuclear medicine technology. Technologists should also be prepared for the integration of computed tomography into our everyday practice. Based on the results of the most recent task analysis survey, there is an ever increasing likelihood that nuclear medicine technologist's professional practice will involve performing some variety of CT scanning at some point. The NMTCB strives to produce a comprehensive examination that demonstrates our certificants ability to keep pace as the field of nuclear medicine technology continues to move forward.

Revised November 2009