NAS Reports on Non-HEU Medical Isotopes

The National Academies on January 14 released a report on *Medical Isotope Production Without Highly Enriched Uranium* (HEU). The report was a product of a congressionally mandated study that focused on 5 main objectives assessing: (1) the feasibility of procuring supplies of medical isotopes from commercial sources that do not use HEU; (2) current and projected demand and availability of medical isotopes in regular current domestic use; (3) progress being made by the Department of Energy (DOE) and others to eliminate all use of HEU in reactor fuel, reactor targets, and medical isotope production facilities; (4) potential cost differentials in medical isotope production in reactors and target processing facilities if the products were derived from production systems that do not involve fuels and targets with HEU; and (5) additional steps that could be taken by the DOE and medical isotope producers to improve the feasibility of such conversions. In part, the report concluded that "eliminating HEU—a key ingredient in nuclear weapons—from the production of medical isotopes, which are used for medical imaging, is technically and economically feasible. . .. The conversion to LEU will take several years and could require additional research and development."

In a press release issued on January 15, SNM expressed support for the long-term objectives outlined in the report but cautioned that the authors minimized both economic considerations and current challenges in securing a reliable domestic supply of clinical and research isotopes.

The National Academies

SNM MI Summit Introduces Clinical Trials Network

On February 8 and 9, SNM held its annual Molecular Imaging Summit in Clearwater, FL. One highlight of the meeting was the formal introduction of requirements for participation in the Clinical Trials Network, which was designed to facilitate cost-effective drug development through the integration of imaging biomarkers into Phase 1, 2, 3, and 4 therapeutic clinical trials. In addition, the summit workshop explored key issues involved with imaging participation in multicenter trials. Attendees included representatives from clinical centers, pharmaceutical manufacturers, and others interested in participation in the new network.

The goal of SNM's Clinical Trials Network is to bring together the pharmaceutical industry, the imaging community, biomarker manufacturers, and regulatory agencies to provide processes, standards, and protocols to streamline the use of imaging in development and testing processes for new pharmaceuticals. The use of imaging in clinical trials can help pharmaceutical developers determine earlier in the development process whether a new product is clinically promising—accelerating the development of promising compounds and eliminating those without apparent patient benefit. However, including these investigational imaging biomarkers in clinical trials for investigational therapeutics poses challenges for drug development, including a lack of standardized imaging methods and challenging regulatory approval and paperwork requirements for imaging biomarkers.

Several discussions between the U.S. Food and Drug Administration (FDA) and SNM have focused on the issue of limited harmonization of imaging protocols between multiple imaging centers. The use of a consistent methodology and protocol is key to quality data generation and ultimate FDA approval of investigational therapeutics and was highlighted at the meeting. "It is important that interested imaging centers, drug manufacturers, and other facilities get involved at this time as there are steps to be taken to ensure imaging standardization and to maintain imaging quality control across multiple sites," said Robert W. Atcher, PhD, MBA, president of SNM.

SNM

NRC Issues Licensing Regs for SLN Biopsy

The Nuclear Regulatory Commission (NRC) in December issued a Regulatory Issue Summary (RIS; 2008-31) to inform all licensees who perform sentinel lymph node (SLN) biopsy procedures that if the excised tissue contains no more than 100 μCi (3.7 MBq) of ^{99m}Tc, the surgical removal of lymph nodes does not require an NRC byproduct material license. The NRC provided this RIS to its Agreement States for distribution to appropriate medical licensees.

After the 2006 publication in the *Office of Nuclear Material Safety and Safeguards Quarterly Newsletter* of an article summarizing licensing issues in SLN biopsy, the NRC received several inquiries from surgical facilities that perform only the surgical excisions. In addition, stakeholders expressed opposition to licensing these surgical facilities, citing the significant medical benefits provided by SLN biopsy procedures combined with the fact that the type of byproduct material used in the procedures is very low risk and that the dosage initially administered is quite small compared with most nuclear medicine diagnostic procedures. As noted by stakeholders, the radiation risk in handling the excised radioactive tissue is minimized further by the fact that only a fraction of the ^{99m}Tc localizes in the excised lymph node(s) and that the activity is significantly reduced by radioactive decay by the time of the surgery. In 2007, the NRC's Advisory Committee on the Medical Uses of Isotopes provided input on this issue and recommended by a unanimous vote that the NRC consider surgical removal of an SLN as a separate procedure from administration of the radionuclide in order to exempt surgical facilities from requirements for a license.

The NRC determined that a surgeon's excision of the tissue does not amount to a "medical use," because the surgeon is not administering the byproduct material. The NRC's position with regard to the pathology of excised SLN tissue continues to be that this tissue may be transferred to a nonlicensed facility for pathology analysis as long as it does not contain more than 100 μCi (3.7 MBq) of ^{99m}Tc, which is based on the exemption criteria in 10 *Code of Federal Regulations* 30.18. Because the surgical facility may not have the necessary equipment to measure activity in a tissue sample, the NRC noted that such facilities may rely on data provided by the administering institution.

Nuclear Regulatory Commission

Web Site on Emerging Medical Therapeutics

An educational Web site introduced on January 6 offers expert perspectives, advice, and guidance on drugs, biological products, and medical devices from the Agency for Healthcare Research and Quality's (AHRQ) Centers for Education and Research on Therapeutics (CERTs), a federally sponsored network of more than a dozen leading research centers. The Clinician–Consumer Health Advisory Information Network (CHAIN) (www.chainonline.org) links clinicians and consumers with therapeutics information to assist in clinical practice and health care decision making in areas in which evidence is undergoing significant and rapid changes.

The site also provides access to educational and informational resources developed from research conducted by CERTs and intended for use in improving health care quality, safety, and effectiveness. Clinical topics included on the Web site address the management of blood clot prevention with drug-eluting stents and expert opinions about topics on which evidence is uncertain, such as restarting antiplatelet therapy when it has been interrupted. The site's educational section includes materials to assist consumers with clinician–patient conversations and decision making as well as an online medication record. Resources for clinicians include a slide library that can be adapted to educate clinical audiences and used for continuing medical education credit.

Agency for Healthcare Research and Quality

Report on Medical Resident Fatigue

According to an Institute of Medicine (IOM) report released in December and funded by the U.S. Department of Health and Human Services and the Agency for Healthcare Research and Quality, fatigued medical residents need protected sleep periods and increased supervision of work hour limits to improve patient safety and the training environment. The report was the result of a 15-mo study by an IOM committee that reviewed the relationship between residents' work schedules, their performance, and the quality of care they provide. The study confirmed previous evidence that acute and chronically fatigued residents are more likely to make mistakes.

The IOM committee recommended several changes to the existing 80-h/wk limit on work hours, including protected sleep periods for residents. The Accreditation Council for Graduate Medical Education's current rules allow residents to work a maximum 30-h shift. During this time, they may treat patients for 24 h and engage in training or transition activities for the other 6 h. The IOM recommends a change to require residents who complete a 30-h shift to treat patients for no more than 16 h. They must then have a 5-h protected sleep period between 10 PM and 8 AM during which time other nonsleeping residents or additional staff members could take over patient care.

Other recommendations in the report, *Resident Duty Hours: Enhancing Sleep, Supervision, and Safety*, include: increased supervision of work hours and independent reviews to ensure compliance; stronger restrictions on moonlighting; guaranteed days off after long shifts; reasonable on-call periods; safe, institutionally provided transportation after long shifts; and increased training on patient handovers, patient safety, and adverse event reporting.

The full report is available at: www.ahrq.gov/news/press/pr2008/iomrespr.htm.

U.S. Department of Health and Human Services

Bill Proposes Gift Disclosure

Legislation first offered in the U.S. Congress in 2007, the Physician Payment Sunshine Act, is now being supported by 2 U.S. senators who describe the measure as "likely to pass" in this session of Congress. Under the rules of the bill, drug and medical device manufacturers would be required to publicly disclose all payments and gifts to physicians and associates exceeding $100/y. A previous version of the legislation, which required public reporting of amounts more than $500/y, did not advance in the last congressional session. The current legislation was reintroduced on January 22 by Senators Charles Grassley (R-IA) and Herb Kohl (D-WI).

The legislation would apply to any payment, including those for consulting and speaking fees, and companies would be required to post the names of recipients and amounts on a publicly accessible Web site. "The goal of our legislation is to lay it all out, make the information available for everyone to see, and let people make their own judgments about what the relationships mean or don't mean," Grassley said in a statement. Companies would face penalties of up to $1 million for failing to report payments. Grassley added that he is considering whether reporting requirements should also extend to industry payments to medical and professional organizations, hospitals, pharmacy benefit managers, pharmacists and pharmacies, continuing medical education groups, and medical schools.

The full text of the bill is available at: http://policymed.typepad.com/files/physician-payment-sunshine-act-2009-1-22-09.pdf.

Senate of the United States