American Pharmacists Association

Ronald T. Piervincenzi, Ph.D.
The Homer Building
601 Thirteenth St, NW, Suite 740
Washington D.C., 20005, USA

RE: Recommendation to establish a dedicated radiopharmaceutical expert committee at USP

Dear Dr. Piervincenzi:

APhA's Radiopharmaceuticals Community writes to urge USP to re-establish a dedicated radiopharmaceutical expert committee in the 2025–2030 revision cycle.

The mission of the Radiopharmaceuticals Community is to support its members through APhA educational programming, communication, and legislative activities in order to uphold and promote radiopharmaceuticals/ nuclear pharmacy practice, to advance pharmaceutical care, and to recognize practice excellence. This community serves pharmacists involved in the specialty practice of nuclear pharmacy by providing its stakeholders with an avenue in which to fulfill individual professional goals and support the goals of APhA.

Radiopharmaceuticals are a unique class of drug products due to their use of radioactive isotopes, handling requirements, short half-lives, and specific manufacturing standards. Recent advances in nuclear medicine have accelerated the growth of the radiopharmaceutical industry over the last decade, particularly in the areas of positron emission tomography (PET) imaging and targeted theranostic applications. This has ushered in a new era in what has recently been dubbed the global "radiopharma" industry, and this segment is expected to double in size to $6 billion by 2029. The purpose of this letter is to highlight these changes and to encourage the USP to adopt new approaches for radiopharmaceutical standards that will ensure patient access to the next generation of radiopharma medicinal products.

Background

The first USP monographs and general chapters for radiopharmaceuticals appeared in 1955. Within ten years, the USP established a dedicated radiopharmaceutical expert committee (EC) consisting of six members with academic, industry, and government backgrounds. This was the first EC in the world dedicated to radiopharmaceuticals. Although the size of the EC fluctuated from cycle to cycle, the USP maintained this committee until 2010. During this time, the USP developed a series of general chapters and monographs that catalyzed the evolution of radiopharmaceuticals from research curiosities into safe medicinal products prepared according to pharmacy and medical practice standards. Importantly, the USP's innovative efforts predated

FDA approvals for both PET and non-PET radiopharmaceuticals. As a result, countless millions of patients benefited from USP standards associated with radiopharmaceuticals.

With the 2010 revision cycle, the EC for radiopharmaceuticals was eliminated, and the number of USP volunteers with radiopharmaceutical expertise was reduced to two individuals. Since then, the number of volunteers with radiopharmaceutical experience on an EC has remained at this level. The basis for this change remains unknown, but it may reflect perceived stagnation in the radiopharmaceutical market in the 1990s and the turmoil associated with FDA jurisdiction over PET drugs during that time. Since 2010, USP has employed a series of expert panels (EPs) to manage standards for radiopharmaceuticals. The EPs have been charged with revision and development of general chapters and monographs. This targeted approach has resulted in some short-term success stories, particularly in the development of a new USP General Chapter <825> Radiopharmaceuticals – Preparation, Compounding, Dispensing, and Repackaging for handling radiopharmaceuticals under the practice of pharmacy and medicine. However, the targeted EP approach is limited in the long term. This is highlighted in the current cycle of revision, which employs an EP charged with revisions to general chapters <823> and <1823>. Due to the limited size and expertise of this EP, work on these revisions remains incomplete as the current cycle draws to a close. Beyond a doubt, the level of output during the current USP revision cycle is insufficient to support the predicted growth described earlier for the global radiopharma industry.

Comparison to the European Pharmacopeia (Ph. Eur.)

The USP's targeted EP strategy contrasts starkly with the approach taken by the European Pharmacopeia (Ph. Eur.) over the same timeframe. During this time, Ph. Eur. has maintained a dedicated group of experts (Group No. 14) for radiopharmaceuticals. This Group is analogous to an EC at the USP. Importantly, Group No. 14 is a permanent committee, and the Chair of Group No. 14 is a member of the working group analogous to the USP Council of Experts. In addition to Group No. 14, Ph. Eur. has two working parties dedicated to radiopharmaceutical topics. These working parties are analogous to USP EPs. Thus, Ph. Eur. has employed three expert groups to support more than 70 monographs and at least 8 general chapters for radiopharmaceuticals in Ph. Eur. For comparison, the current USP structure includes the EP described earlier and one EC with three members who have direct, but narrowly scoped, experience in radiopharmaceuticals. The remaining members of this EC all have voting authority, but none have direct experience in radiopharmaceuticals. This raises serious concerns about the integrity of USP standards in general for radiopharmaceuticals and especially in terms of the revisions to <823> and <1823> noted above. Ph. Eur.. may have already overtaken the USP's global leadership in radiopharmaceutical public standards but will certainly do so by 2030 if these trends continue and no changes are made.

Recommendations

To support the new era in radiopharma, the USP must respond quickly with the deployment of a dedicated radiopharma EC in the 2025–2030 revision cycle. The EC must have expertise in radiochemistry synthesis, formulation, quality control, validation, microbiology, radiation

dosimetry, regulatory affairs, and quality assurance. Furthermore, to ensure vigorous debate and rigorous standards, the EC must have voting authority on USP standards related to radiopharmaceuticals.

We hope these observations and recommendations are received in a spirit of support for the USP. The USP's innovative ethos layed the groundwork for the development of sub-specialties in nuclear pharmacy and radiopharmaceutical manufacturing, long before FDA approvals of these products. We hope that the USP maintains its leadership, and stand ready to help. When established, APhA would be willing to supply individuals (pharmacists) for consideration of appointment to the EC. We believe USP public standards have the potential to seed new growth in radiopharma and the nuclear pharmacy community, and to catalyze new areas of personalized patient care. Please contact Michael Baxter at mbaxter@aphanet.org with any updates to this request or if you need any additional information.

Sincerely,

APhA's Radiopharmaceuticals Community

Kara Weatherman, PharmD, BCNP, FAPhA, Chair

Nic Mastascusa, PharmD, Chair-elect

cc: Jaap Venema, Ph.D., Chief Science Officer & EVP; Chair, Council of Experts, Officer, USP Convention