

National Nuclear Security Administration
Office of Material Management and Minimization
Mo-99 Stakeholders Meeting

NTP Processing Suspension
UPPI Experience

Mo-99 Stakeholders Meeting

Arlington, VA.

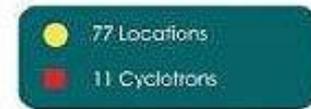
May 16, 2018



Overview UPPI LLC.

- UPPI is an alliance of small business and university owned radiopharmacies.
- Formed in 1998, it has 77 low energy and 11 high energy radiopharmacies.
- UPPI represents 8,000 of the approximately 50,000 unit doses dispensed every day in the U.S.

United Pharmacy Partners



UPPI LEU Member Pharmacies



50,000 ft. View of NTP Processing Issue

- Some market churn...
- “Communications” sometimes out-of-sync with the actual return to service of NTP.
- Most UPPI members “have experienced shortages before”.
- Members already knew how to respond internally with their client’s unit dose needs.

Summation of the NTP Processing Issue

- **Compliment to Lantheus Medical Imaging for extraordinary measures to alleviate some supply issues.**
- Worst pinch points were between the year-end holidays 2017 and toward the middle of January 2018.
- Overall estimate: 10% cancellation of patient orders lost to rescheduling and/or other imaging modalities.

Summation of the NTP Processing Issue

- Mo-99 generators eluted every two hours in busy nuclear pharmacies. Eluted until expiration time on label.
- Bulk Tc-99m orders curtailed.
- Reduction in dose size for high activity imaging studies: cardiac and bone.
- Doses reduced 10-20% resulted in longer imaging times with patient on the camera table. Discomfort for elderly patient.
- Increased dose deliveries to imagers from 1-2 per day to 4-5 per day.

Summation of the NTP Processing Issue

- Thallium 201 substituted but most facilities complained of sub-optimal studies versus Tc-99m cardiac products.
- Physicians worried over study outcomes with Thallium 201.
- Cardiology centers would shift patient load to early in the week due to greater overall Tc-99m activity available versus late in the week.
- Many cardiology centers extended work hours early in week to accommodate work load shift.

Summation of the NTP Processing Issue

- Added communication challenges when the nuclear pharmacy received notice late Thursday, Friday or Saturday on Mo-99 generator sizes to be shipped for following Monday regarding client notification.
- Nuclear pharmacy members pushed service quotient to do everything possible to supply imaging centers' Tc-99m needs.

Conclusions: UPPI Point of View

- Mo-99 supply chain challenges/disruptions likely to happen into the future.
- A pinch point in Mo-99 processing was a surprise and Outage Reserve Capacity would not have alleviated the issue.
- Did reactor maintenance schedules, during the shortage, affect outcomes of Mo-99 supplies? Need improved communications on such factors.
- High-level communications helped, but a better means to reach out to the nuclear imaging community seems necessary.