

Radiopharmaceutical Shortage Leads to Reduced Nuclear Radiology Scheduling at ARA Through the Summer

Nuclear medicine imaging is currently facing a worldwide shortage of Technetium (Tc-99m), the radiopharmaceutical used in approximately 80% of diagnostic nuclear medicine exams.

No nuclear reactors in the United States manufacture the isotope which is used as the basis for Tc-99m generators. Currently the majority of the raw material for these generators comes from Europe.

The two largest capacity generators, located in Canada and the Netherlands, are both shut down for repairs. Three smaller European reactors, located in France, Belgium, and Poland, and one more in South Africa, have been struggling to supply the world with Molybdenum-99 (Mo-99), the base material for Tc-99m generators.

In recent days, the shortage has been exacerbated by the airspace closures in Europe due to the volcanic eruptions of Eyjafjallajökull in Iceland since mid-April, which has resulted in multiple distribution delays.

Outlook: The two primary reactors in Canada and the Netherlands will remain shut-down for repair until July-August this year. Once these two reactors are back on-line, nuclear medicine imaging is expected to return to normal capacity, at least for the near future. All six reactors are 40–50+ years old and will need to be replaced in the next several years. The U.S. Department of Energy has awarded grants to two companies to explore the establishment of a reactor in the United States. However, it will be at least 5-7 years before they would actually be able to produce medical isotopes for nuclear medicine imaging.

In the mean time, without a steady supply of Tc-99m generators, ARA is only able to perform certain exams on certain days, based on the amount of Tc-99m available on any given day. Some exams use a smaller amount of the radiopharmaceutical, which allows us to perform these exams most days of the week. Other exams—including Bone scans, MUGA scans, and Parathyroid exams—require a larger dose of Tc-99m and are only being performed 1-2 days per week. The recent shipping problems mean we don't know when new generators will be delivered, which has resulted in multiple exam reschedules for many patients.

For the near term, we expect the problem to continue until sometime in August. We are often forced to adjust our exam schedule on a day-by-day basis. Additionally, we expect the month of May to be very difficult as the Belgium reactor is scheduled to shut down for a week of maintenance.

More information:

[Covidien](#) and [Lantheus](#) are the two Tc-99m generator manufacturers – they use the [Mo-99](#) created by the reactors.

Covidien: <http://www.covidien.com/Campaigns/pageBuilder.aspx?topicID=181700&page=Mo99:Main>



Lantheus Medical Imaging: <http://www.radiopharm.com/SupplyUpdate/index.html>

NRG reactor, Netherlands: <http://www.nrg.eu/hfr-repair/hfr-updates/>

National Research Universal (NRU), Canada:
<http://www.nrucanada.ca/en/home/projectrestart/statusupdates/default.aspx>