NIB 03 - Briefing – Radioactive Medicinal Product Shortage

- In late 2008, there was a world-wide shortage of the radioisotopes (molybdenum-99 (\(^{99}\text{Mo}\)/ technetium 99m (\(^{99m}\text{Tc}\))) widely used in nuclear medicine procedures worldwide (used in about 80% of all nuclear medicine diagnostics).

- The UK National Health Service (NHS) successfully minimised disruption to patient care with local work around - including reducing wastage, maximising activity to fit in with the supply of radioisotopes and undertaking alternatives procedures where possible. Supplies to the UK returned to near normal in early 2009.

- However, a shutdown of the Chalk River reactor in Canada and another shutdown for the HFR reactor in the Netherlands during July, may lead to further worldwide shortage of supplies during 2009.

- The supply situation is not expected to return to normal until late 2009.

- Communication channels are open with the three suppliers of \(^{99}\text{Mo}\) and \(^{99m}\text{Tc}\) to the UK market to ensure that we maximise patient access during this time of limited supply. The three suppliers continue to ensure equity of supply to their NHS customers and keep them updated on a regular basis.

- The UK does not produce the raw material for these products, so we have limited options to resolve this ourselves - apart from ‘work around’ solutions that trusts will put in place locally e.g. in the short term, treating priority patients and rescheduling non urgent patients. We are reliant upon our European colleagues, in particular, France, Belgium and Holland for the material.

- The Department of Health has reintroduced weekly situation reports via Strategic Health Authorities from all hospitals that may be impacted by this further shortage of isotopes. We will closely monitor these reports and the NHS is making the adaptations needed to continue to provide patient care. The UK Departments of Health will continue to work together to monitor the situation closely.

- The radioisotope supply shortage is a worldwide problem and the Department of Health is working with key stakeholders such as the Health Protection Agency (HPA), British Nuclear Medicine Society (BNMS) and NHS hospitals to find short/long-term solutions.

**Background:**

1. There are only five reactors worldwide that produce \(^{99}\text{Mo}\). \(^{99m}\text{Tc}\) is the most widely used radioisotope for nuclear medicine procedures worldwide (used in about 80% of all nuclear medicine diagnostics). \(^{99m}\text{Tc}\)
decays rapidly and cannot be stockpiled. This shortage means that some patients may be delayed in being imaged and therefore diagnosed.

2. In late 2008, the shortage of $^{99}$Mo occurred when, because of a number of different reasons, the European reactors (France, Belgium and Holland) that produce $^{99}$Mo were out of action or in the case of Canada and South Africa were at full capacity.

3. It has come to our attention that the ‘Chalk River’ reactor in Canada has had a leak and will not return to operation for at least 3 months and the HFR reactor in the Netherlands has shutdown for maintenance. The ‘Chalk River’ reactor is the biggest producer worldwide of $^{99}$Mo and the only producer of $^{99}$Mo in North America, the region where the greatest volume of nuclear medicine procedures in the world is carried out. As a consequence, some $^{99}$Mo supplies produced by the South African reactor destined for Europe are being diverted to the United States.

4. It is inevitable that problems with supplies will keep reoccurring as the five reactors are ageing and will need more breaks in operation for maintenance.

**Next Steps**

5. We have re-introduced Situation Reports from Strategic Health Authorities and we will continue to monitor these on a weekly basis.

6. In parallel, we will continue to work with the British Nuclear Medicine Society (BNMS) to support the communication and networking between radio pharmaceutical services in NHS Trusts.

7. We will also maintain contact with Scotland, Wales, Northern Ireland and other European countries to join up efforts to find a co-ordinated solution to this worldwide $^{99}$Mo supply issue.

8. We have asked the Administration of Radioactive Substances Advisory Committee (ARSAC) is a governmental body, which sits within the Health Protection Agency (HPA) to:
   - Provide advice on sustainable service delivery models for Nuclear Medicine Examinations using different isotopes and scanning systems. This will increase options particularly for lung and bone scan patients.
   - Produce a report for the Department on the future requirements for $^{99m}$Tc imaging to inform discussions on the longer term supply options.
   - We expect ARSAC to report to the Department in 2010.
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