

EDUCATION, SCIENCE AND TRAINING

SENATE LEGISLATION COMMITTEE - QUESTIONS ON NOTICE 2004-2005 BUDGET ESTIMATES HEARING

DEST Question No. E168_05

Senator Carr asked on 2 June 2004, EWRE Hansard page 23.

Question:

Can you identify by way of a list the isotopes and their uses that are not available by importation?

Answer:

ANSTO – Importation of Medical Radioisotopes

ANSTO has provided the following response:

Theoretically, radioisotopes can be imported where sufficient material can be carried to account for radioactive decay during transport. This would entail ordering extra material at significant extra cost to allow for the decay. However, some radioisotopes are not imported during major HIFAR shutdowns because their short half-lives make it impractical to do so, and they would therefore almost certainly be unavailable in the absence of a research reactor in Australia. The radioisotopes which were not imported at all during the most recent HIFAR major shutdown were:

- Samarium-153, which is used in the production of Quadramet, used to relieve the pain caused by tumour deposits in the bone. The drug is taken up particularly strongly in injured bone, which is often where the tumour is located. The radioactive component of the drug gives off radiation, which reduces tumour activity and associated pain.
- Chromium-51, which is a diagnostic pharmaceutical used to determine the amount of fluid flowing through a patient's kidneys (glomerular filtration rate) and to assess the function of the kidneys.

Apart from those radioisotopes, the supply of other radioisotopes was subject to delays or interruptions to supply during the most recent HIFAR major shutdown (see answer to question E169_05). On the basis of ANSTO's experiences in this and previous shutdowns, it could fairly be assumed that similar problems would arise if Australia were to be totally reliant upon imports for supplies of radioisotopes. The supply problems arise from a range of causes, such as weather, aviation regulations relating to radioisotopes being carried with other goods (e.g. food, animals), documentation problems, pilot preferences and so on. Importation of significant total activity may also result in transport index difficulties (each flight has a limit on the total amount of radioactivity which it is allowed to carry). In any case, processing of the material still needs to be done at ANSTO in the radiopharmaceutical production facility.

The International Atomic Energy Agency has identified the "growing problem of refusal by carriers, ports and handling facilities to transport radioactive material" as a significant problem, and has initiated processes intended to identify ways in which it can be overcome. A number of airlines – such as British Airways – no longer carry radioactive material, and others have imposed tight restrictions. Unless a way can be found to reverse this trend, importation of radioisotopes into Australia will become increasingly problematic. Additionally, Australia would not have access to new therapeutics without its own facility.