

 Report from a French incident**Loss of an iridium wire (Report No. 1)****Description of the incident**

In a hospital brachytherapy department, five iridium-192 wires were being removed from a patient (after being placed for 5 days), when it was discovered that one of the wires was missing. It was a soft, 7 cm long wire; 37 MBq/cm (259 MBq total activity).

A search was undertaken using a radiation meter: first in the patient's bed, then in his room, and then throughout the department until it was eventually found in a soiled clothing bag just prior to its departure for the laundry. The wire was immediately placed in storage by the physicist who was also the person competent in radiation protection.

Following this incident, regular meetings on radiation protection between the personnel were introduced, and a written procedure for dealing with incidents was produced.

**Radiological consequences**

Only one person was exposed (a nurse's aide). She was irradiated during the replacement of the pillow case on which the iridium wire fell. The dose received by the whole body was estimated to be 35  $\mu$ Sv, assuming that the person was exposed for a period of one hour at one metre.

**Lessons to be learned from the incident**

The method of fastening the iridium could be improved. In the past, the fastening was a simple clamping technique (wire clamped at one end), whereas now double-clamping is used (wire clamped at both ends).

Where the treatment lasts several days, daily verification of the presence of each wire is necessary.

The presence of a fixed radiation detector at the exit to the brachytherapy area would have prevented this incident.

The nurse's aide was not wearing a dosimeter, even though this was a requirement of the job. If the nurse's aide had worn a real-time dosimeter (also a requirement in this case) she would have immediately noticed the presence of iridium wire in the pillowcase.

It is essential that all staff involved, including nurse's aides, receive appropriate training in radiation protection. Also, short-notice replacement of staff, with people who have received no training in radiation protection, should not be allowed in this type of department.

The procedures to be followed in case of an incident must be effectively distributed (and should be specific to each department, and include the person competent in radiation protection).