

การสำรวจรังสีที่ปลดปล่อยออกมาจากผู้ป่วยที่ได้รับการรักษาด้วยรังสีไอโอดีน-131

A survey of radiation released from patients treated with radioiodine-131 therapy

ช่วงเวลาดำเนินการ ปี พ.ศ. 2564

ผู้รับผิดชอบ ดร. วิฑิต ฝั่งกัน

ตำแหน่ง รักษาการผู้เชี่ยวชาญเฉพาะด้านการประเมินค่ากัมมันตภาพรังสี

Email: vithit.p@oap.go.th

รายละเอียดสรุป

Background: Radioactive iodine 131 (I-131) is used as an alternative to treat thyroid cancer. Patients receiving I-131 must be separated in provided hospital rooms until radiation level falls below the specified threshold. The knowledge of the amount of radiation in patient rooms along with outlying areas, together with the building's sewer systems will help monitoring and controlling the radiation hazard.

Objectives: This study was conducted to investigate the radiation exposure from ward of patients treated with I-131, and the effects upon general public. Materials and methods: OSL devices were placed on the outer surface of sewer line and external walls of patient rooms. Accumulated radiation was measured for a period of one month.

Results: The results showed that radiation exposure from I-131 patient rooms located on the 5th floor of Srinagarind Hospital was 7.24 $\mu\text{Sv/hr}$. However, the radiation detected from both sides of drainage pipe were unequal. Radiations on the 2nd, 3rd, 4th, and 5th floors were 1.70, 1.28, 2.97, and 7.24 $\mu\text{Sv/hr}$, respectively.

Conclusion: It could be concluded that accumulated radiation in a single year exceeded the ICRP specified limit and poses a safety hazard for staff and general public. Recommendations to rectify the problem included increasing awareness of staff and public through warning signs, as well as adding of lead shields surrounding the patient rooms. Nonetheless, further measurements should be performed again after reconstruction.

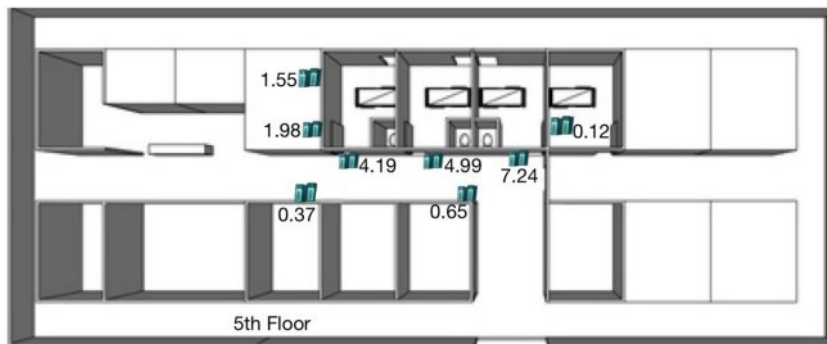


Figure 3. Placement of OSL plates used to measure radiation on the 5th floor.

