

# PUBLIC SUBMISSION

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Reporting Nuclear Medicine Injection Extravasations as Medical Events

**Comment On:** NRC-2022-0218-0004

Reporting Nuclear Medicine Injection Extravasations as Medical Events

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## General Comment

Reporting nuclear medicine extravasations as medical events is a proposed rule that can do a lot of good. High doses of radiation exposure can lead to severe tissue damage and necrosis. Extravasation of these radionuclides results in tissue retention of these radiopharmaceuticals, which leads to an extended local radiation exposure. A systematic review conducted by van der Pol et al. (2017) found a lack of clinical follow-up following diagnostic nuclear medicine scans, as well as significant under-reporting of complications related to nuclear medicine extravasations. Extravasation of radiopharmaceuticals can lead to severe soft tissue lesions and disperse intervention, dosimetry, and follow-up is advised in these patients (van der Pol et al., 2017).

Reporting these instances as medical events can help identify any pitfalls with regard to the safe use of radioactive material. In doing so, corrective action can be taken to prevent recurrence and mitigate risk. Your suggestion that NRC medical staff “should require licensees to develop, implement, and maintain written procedures to provide high confidence that radiation safety-significant extravasations will be detected and reported” is a good one. This would reduce the reliance on patient self-reporting and place more of an onus on clinicians to treat and monitor patients when the injury occurs.

Reference

van der Pol, J., Vöö, St., Bucieris, J., & Mottaghy, F. M. (2017). Consequences of radiopharmaceutical extravasation and therapeutic interventions: A systematic review. *European Journal of Nuclear Medicine and Molecular Imaging*, 44(7), 1234-1243. <https://doi.org/10.1007/s00259-017-3675-7>