



ACMUI's Position on Patient Release

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“Patient Release Report”

- **Medical use of radionuclides**
 - **Widely recognized health benefits**
 - **Public doses \approx Background levels**
 - **Avoid burdensome regulatory control**

- **Doses to other individuals can be safely controlled**
 - **Current 10 CFR 35.75 dose-based release criteria: 5-mSv (500-mrem) dose limit per event**
 - **Patient and caregiver post-release instructions adapted to individual circumstances**

- **10 CFR 35.75 release criteria consistent with national and internal dose-constraint standards**

10 CFR 35.75

“30-mCi Rule”



Dose- vs Activity-Based Release Criteria

- **Dose: A more meaningful and direct metric of radiation risk than activity**
- **Patient activity does not predict dose to other individuals**
- **ACMUI endorses current 10 CFR 35.75 dose-based release criteria**

Dose-Based Release Criteria: Issues Associated with Outpatient Therapy

- **Negligible (<10%) dose contribution of internalized contamination**
- **Patient release to non-residence locales**
 - **Hotels**
- **Patient transportation post-treatment**
 - **Public vs private**
- **Patient vomiting post-treatment**
 - **Frequency uncertain**
- **Clarity and consistency of post-release precautions**
 - **NCRP Report 155**

Dose Contribution of Internalized Contamination

- **Significant peer-reviewed literature**
 - **>20 papers**
 - **Thyroid uptake measurements**
 - **Range of precautions**

- **Results consistent with minimal internal-dose contribution**

Patient Release to Non-Residence Locales: Hotels

- Activity for thyroid cancer: 175 mCi ¹³¹I
- Internal dose negligible
- Attenuation factors: Patient, 0.60; Walls, 0
- Total-Body time-activity function: 95%, 8-hr T_e; 5%, 7-day T_e

*Illustrative
Analysis*

	<u>Conservative</u>	<u>Realistic</u>
Activity excreted into bed linens	50 %/day	5 %/day
Time workers hold linens (@ 0.3 m)	30 min/day	10 min/day
Time workers/other guests @ 1 m from Patient	3 hr/day	1 hr/day
Time patient and adjoining-room guests in respective beds (@ 2 m)	12 hr/day	8 hr/day

Patient Release to Non-Residence Locales: Hotels *cont*

*Results of
Illustrative Analysis*

Conservative

Realistic

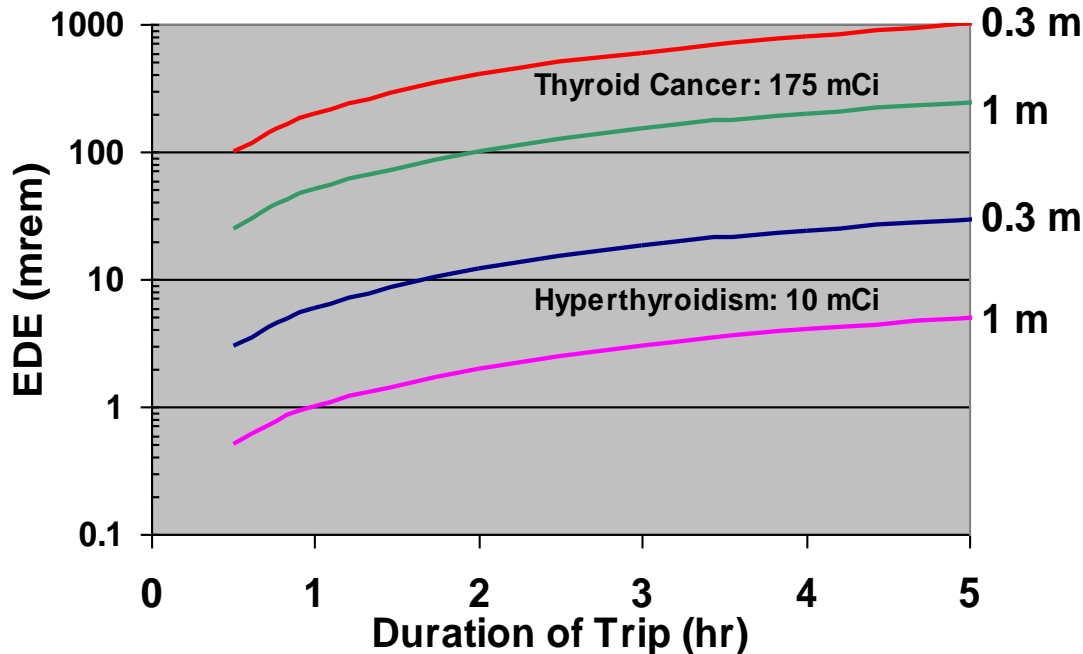
EDE (mrem)

<i>Days at hotel immediately post-therapy</i>	<u>1</u> <u>2</u> <u>3</u>			<u>1</u> <u>2</u> <u>3</u>		
	Hotel Housekeeper	69	83	91	0.9	1.1
Hotel Laundry Worker	39	47	52	0.08	0.09	0.1
Guests in Adjoining Rooms	54	65	71	17	21	22
Other Hotel Workers / Other Guests	30	36	39	0.8	1.0	1.1

< 100 mrem

Post-Therapy Transportation from Hospital (not included in Sub-Committee Report)

Doses from ^{131}I -Treated Patients Immediately Post-Therapy



Culver and Dworkin. *J Nucl Med* 33: 1402, 1992
NCRP Report No 124, 1996

- **Patients treated with >100 mCi**
 - **Avoid public transportation**
 - **Avoid long (>1 hr) trips**
 - **Travel in car seated alone in back seat**
 - **Driver other than household member**
- **Patients treated with <100 mCi**
 - **No restrictions on modes of travel**

ACMUI's Position on Patient Release

- **Medical use of radionuclides safely serves public interest and should not be burdened by excessive regulatory controls**
- **Doses to other individuals from released radioactive patients can be safely controlled by current dose-based 10 CFR 35.75 release criteria**

Abbreviations and Acronyms

- **ACMUI:** **Advisory Committee on Medical Uses of Isotopes**
- **CFR:** **Code of Federal Regulations**
- **EDE:** **Effective dose equivalent**
- **hr:** **hour**
- **NCRP:** **National Council on Radiation Protection and Measurements**
- **T_e:** **Effective half-life**