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May 26, 2009

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RECEIVED

Ms. Michelle Simmons
Medical Branch, Division of Nuclear Materials Safety
U.S. Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

29-30606-01
03035600/2008001

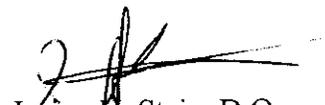
Dear Ms. Simmons:

With reference to the recent inspection of the nuclear medicine department at Central Jersey Radiologists, 2128 Kings Highway, Oakhurst, NJ, our inspection response letter and your reply to our referenced letter, please note the following:

1. To comply with the educational requirements of NURED-1556, Vol. 9, Rev. 2 (1/08) we have prepared dose specific instruction sheets for patients receiving Iodine-131 in the treatment of hyperthyroidism and cancer ablation. Copies of these instructions are attached.
2. Each patient receiving Iodine-131 treatment will be monitored with a radiation survey meter, at a distance of 3 feet. The results of this survey will be recorded on the dose calculation spreadsheet. An example copy of attached for your review.
3. Each patient receiving Iodine-131 treatment will have an estimated dose to caregivers and family members calculated. An example copy is attached for your review.
4. The dose calculation report will be made part of the patient's permanent medical record.

If any additional information is required, please do not hesitate to contact us.

Sincerely,


Irving H. Stein, D.O.
Radiation Safety Officer

IHS/pm
Attachments

NMSS/RGNI MATERIALS-004

**Central Jersey Radiologists
 Department of Nuclear Medicine
 I-131 NaI Hyperthyroid Therapy
 Patient Instructions-Reducing External Exposure
 5 – 15 mCi**

Instructions to Reduce Exposure

	Duration		Duration
Avoid mouth to mouth contact	5d	Sleep in a separate bed (~ 7 foot separation)	5 d
Do not share items that contact the mouth (toothbrushes and eating utensils)	5d	Refrain from sexual activity	5 d
		Avoid prolonged contact with children and pregnant women	5 d
Use separate (or disposable) eating utensils and wash them separately	5d	Maintain a safe distance from others (~ 3 feet)	2 d
		Drink plenty of fluids	2-3 d
Use a separate bathroom. Keep the toilet especially clean and flush it two or three times after each use	5d	Delay return to work	1 d
		Limit time spent in public places	1 d
		Limit private travel (~ 3 foot separation, > 4 hour trip)	0 d
Men should sit during urination	5d		
Shower frequently	5d	Do not travel by airplane or mass transportation	0 - 1 d
Wash hands (especially after using the toilet) frequently	5d	Do not travel on a prolonged automobile trip with others	2 d
Use separate wash cloths and towels	5d	Rinse bathroom sink and bathtub after each use	5 d
Wash all laundry separately from other household laundry	5d	Suck on sour candies/fruit ~ once every hour	2 - 3 d
		Postpone conception	6mos-1yr

Patient signature: _____

Date: _____

**Central Jersey Radiologists
 Department of Nuclear Medicine
 I-131 NaI Hyperthyroid Therapy
 Patient Instructions-Reducing External Exposure
 15 - 33 mCi**

Instructions to Reduce Exposure

	Duration		Duration
Avoid mouth to mouth contact	5d	Sleep in a separate bed (~ 7 foot separation)	2 - 3 d
Do not share items that contact the mouth (toothbrushes and eating utensils)	5d	Refrain from sexual activity	2 - 3 d
		Avoid prolonged contact with children and pregnant women	2 - 3 d
Use separate (or disposable) eating utensils and wash them	5d	Maintain a safe distance from others (~ 6 feet)	2 d
		Drink plenty of fluids	2 d
Use a separate bathroom. Keep the toilet especially clean and flush it two or three times after each use	5d	Delay return to work	1 d
		Limit time spent in public places	1 d
		Limit private travel (~ 3 foot separation, > 4 hour trip)	0 d
Men should sit during urination	5d		
Shower frequently	5d	Do not travel by airplane or mass transportation	1 d
Wash hands (especially after using the toilet) frequently	5d	Do not travel on a prolonged automobile trip with others	1 d
Use separate wash cloths and towels	5d	Rinse bathroom sink and bathtub after each use	5 d
Wash all laundry separately from other household laundry	5d	Suck on sour candies/fruit ~ once every hour	2 - 3 d
		Postpone conception	6mos-1yr

Patient signature: _____

Date: _____

**Central Jersey Radiologists
Department of Nuclear Medicine
I-131 NaI Postthyroidectomy Therapy
Patient Instructions-Reducing External Exposure
34 – 100 mCi**

Instructions to Reduce Exposure

	Duration		Duration
Avoid mouth to mouth contact	5d	Sleep in a separate bed (~ 7 foot separation)	3 - 4 d
Do not share items that contact the mouth (toothbrushes and eating utensils)	5d	Refrain from sexual activity	3 - 4 d
		Avoid prolonged contact with children and pregnant women	3 - 4 d
Use separate (or disposable) eating utensils and wash them separately	5d	Maintain a safe distance from others (~ 6 feet)	2 - 3 d
		Drink plenty of fluids	2 d
Use a separate bathroom. Keep the toilet especially clean and flush it two or three times after each use	5d	Delay return to work	1 - 2 d
		Limit time spent in public places	1 - 2 d
		Limit private travel (~ 3 foot separation, > 4 hour trip)	1 d
Men should sit during urination	5d		
Shower frequently	5d	Do not travel by airplane or mass transportation	1 - 2 d
Wash hands (especially after using the toilet) frequently	5d	Do not travel on a prolonged automobile trip with others	2 - 3 d
Use separate wash cloths and towels	5d	Rinse bathroom sink and bathtub after each use	5 d
Wash all laundry separately from other household laundry	5d	Suck on sour candies/fruit ~ once every hour	2 - 3 d
		Postpone conception	6mos-1yr

Patient signature: _____

Date: _____

**Central Jersey Radiologists
Department of Nuclear Medicine
I-131 NaI Postthyroidectomy Therapy
Patient Instructions-Reducing External Exposure
100 – 150 mCi**

Instructions to Reduce Exposure

	Duration		Duration
Avoid mouth to mouth contact	5d	Sleep in a separate bed (~ 7 foot separation)	4 - 5 d
Do not share items that contact the mouth (toothbrushes and eating utensils)	5d	Refrain from sexual activity	4 - 5 d
		Avoid prolonged contact with children and pregnant women	4 - 5 d
Use separate (or disposable) eating utensils and wash them separately	5d	Maintain a safe distance from others (~ 6 feet)	3 - 4 d
		Drink plenty of fluids	2 - 3 d
Use a separate bathroom. Keep the toilet especially clean and flush it two or three times after each use	5d	Delay return to work	2 - 3 d
		Limit time spent in public places	2 - 3 d
		Limit private travel (~ 3 foot separation, > 4 hour trip)	1 - 2 d
Men should sit during urination	5d		
Shower frequently	5d	Do not travel by airplane or mass transportation	2 d
Wash hands (especially after using the toilet) frequently	5d	Do not travel on a prolonged automobile trip with others	3 - 4 d
Use separate wash cloths and towels	5d	Rinse bathroom sink and bathtub after each use	5 d
Wash all laundry separately from other household laundry	5d	Suck on sour candies/fruit ~ once every hour	2 - 3 d
		Postpone conception	6mos-1yr

Patient signature: _____

Date: _____

**Central Jersey Radiologists
Department of Nuclear Medicine
I-131 NaI Postthyroidectomy Therapy
Patient Instructions-Reducing External Exposure
150 – 200 mCi**

Instructions to Reduce Exposure

	Duration		Duration
Avoid mouth to mouth contact	5d	Sleep in a separate bed (~ 7 foot separation)	5 - 7 d
Do not share items that contact the mouth (toothbrushes and eating utensils)	5d	Refrain from sexual activity	5 - 7 d
		Avoid prolonged contact with children and pregnant women	5 - 7 d
Use separate (or disposable) eating utensils and wash them separately	5d	Maintain a safe distance from others (~ 6 feet)	4 - 5 d
		Drink plenty of fluids	2 d
Use a separate bathroom. Keep the toilet especially clean and flush it two or three times after each use	5d	Delay return to work	3 d
		Limit time spent in public places	3 d
		Limit private travel (~ 3 foot separation, > 4 hour trip)	2 - 3 d
Men should sit during urination	5d		
Shower frequently	5d	Do not travel by airplane or mass transportation	3 d
Wash hands (especially after using the toilet) frequently	5d	Do not travel on a prolonged automobile trip with others	4 - 5 d
Use separate wash cloths and towels	5d	Rinse bathroom sink and bathtub after each use	5 d
Wash all laundry separately from other household laundry	5d	Suck on sour candies/fruit ~ once every hour	2 - 3 d
		Postpone conception	6mos-1yr

Patient signature: _____

Date: _____

**Department of Nuclear Medicine
Record of Patient Release
I-131 Therapy - Graves Disease**

Date: April 23, 2009

Patient Identifier: 1234567

Patient's Name: XXXX XXXXXXXX

Date of Administration: 4/23/2009

Exposure rate @ 3-feet : mR per hour

Radiopharmaceutical: I-131 **Proposed Date of Release:** April 23, 2009
Proposed Time of Release: After dose administration

Proposed Activity: 15.6 mCi

Calculated EDE: 140.0 mrem

Is the calculated EDE < 500 mrem? YES

The calculated dose to persons exposed to the patient is **140.0** mrem based on patient specific factors. This number is less than the maximum exposure of 500 mrem stipulated in NRC Regulatory Guide 8.39. Therefore, it is acceptable to release this patient based on this calculation and applicable patient instructions.

NRC Reg. Guide 8.39 Calculation - Hyperthyroid Factors

$$D(t) = 34.6TQ/r^2\{[(0.75)(8.04)(0.8)(1-e^{-(0.693)(0.33)/8.04})] + [(OF)(F1)(T1)(e^{-(0.693)(0.33)/8.04})] + [(OF)(F2)(T2)(e^{-(0.693)(0.33)/8.04})]\}$$

$D_{ext} = 137.9$ mrem (external dose)

$D_{int} = 2.1$ mrem (internal dose)

Assumptions:

$T = (R\text{-cm}^2/\text{mCi-hr}) = 2.2$
 $r \text{ (cm)} = 100$
 $Q \text{ (mCi)} = \text{Administered Dosage}$

Care Given: OF
 $E1 = 0.75$
 $E2 = 0.25$

Reg Guide 8.39 Uptake Fraction and T_{eff}

$F1 = 0.2$ Table U.6 - Page U-21
 $T1 = 0.32$
 $F2 = 0.8$
 $T2 = 5.2$

**Department of Nuclear Medicine
Record of Patient Release
I-131 Therapy - Ablation Dose**

Date: April 27, 2009

Patient Identifier: xxxxxxx

Patient's Name: Xxxx Xxxxxxx

Date of Administration: 4/27/2009

Exposure rate @ 3-feet : mR per hour

Radlopharmaceutical: I-131 **Proposed Date of Release:** April 27, 2009
Proposed Time of Release: After dose administration

Proposed Activity: 150.0 mCi

Calculated EDE: 359.9 mrem

Is the calculated EDE < 500 mrem? YES

The calculated dose to persons exposed to the patient is **359.9** mrem based on patient specific factors. This number is less than the maximum exposure of 500 mrem stipulated in NRC Regulatory Guide 8.39. Therefore, it is acceptable to release this patient based on this calculation and applicable patient instructions.

NRC Reg. Guide 8.39 Calculation - Thyroid Cancer Factors

$$D(t) = 34.6TQ/r^2 \{ (0.75)(8.04)(0.8)(1 - e^{-(0.693)(0.33)/8.04}) + (OF)(F1)(T1)(e^{-(0.693)(0.33)/8.04}) + (OF)(F2)(T2)(e^{-(0.693)(0.33)/8.04}) \}$$

$D_{ext} = 340.1$ mrem (external dose)

$D_{int} = 19.9$ mrem (internal dose)

Assumptions:

$T = (R \cdot cm^2 / mCi \cdot hr) = 2.2$

$r (cm) = 100$

$Q (mCi) = \text{Administered Dosage}$

Care Given: OF

E1 = 0.75

E2 = 0.25

Reg Guide 8.39 Uptake Fraction and T_{eff}

F1 = 0.95

T1 = 0.32

F2 = 0.05

T2 = 7.3