accounted for using simulated unrestricted behavior to reasonably quantify the total effective dose received, as required by regulation (2). Once the patient is released from restrictions, he or she may feel compelled to compensate for lost quality time by spending initially an unusual amount of time in close contact and later returning to close-contact behavior as normal (10). After a 2-day daytime restriction and an 8-day sleeping restriction for a patient with 50% 24-hour uptake and a 15 mCi dosage, exposure rates from the thyroid using a more realistic effective half-life of 6 days are sufficient for the dose to an infant to accumulate to >7.5 mSv from unrestricted behavior. The dose from sleeping 8 hours per day with the child after the 8-day restriction period can by itself substantially exceed 5 mSv. It is very important that the parent not sleep or nap with the child for at least 2 weeks. Even 4 weeks may be appropriate to be conservative about the dose from this activity. Should the dosage to the patient exceed 15 mCi, the circumstances become even more problematic.

We recognize that practical issues related to implementing postiodine treatment guidelines and the ALARA principle are substantial when small children are in the home. We also recognize that clinically important effects of relatively low levels of radiation exposure are controversial. However, if the goal, as stated in the article, is to comply with NRC public/family exposure guidelines, we believe that the task force's recommendations as summarized in their Table 2A of the article do not provide adequate guidance to practicing physicians who may counsel these patients before or after I-131 treatment for hyperthyroidism.

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Response to Beasley CW, Moore WH, and Wagner LK

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Dear Editor:

My co-authors and I appreciate the interest of Drs. Beasley, Moore, and Wagner in our publication, "Radiation Safety in the Treatment of Patients with Thyroid Diseases by Radioiodine ^{131}I: Practice Recommendations of the American Thyroid Association" (1). They importantly emphasize the obligation to protect young and vulnerable children from

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radiation exposure when others receive ^{131}I treatment for hyperthyroidism.

In response to the assertion that we did not fully address the in-depth counseling required for infants' exposure, we offer the following.

1) We agree that dosages greater than 15 mCi are often administered. In Tables 2A-1 and 2B-1, the list of dosages included: 10, 15, 20, and 30 mCi as examples.
2) Uptakes of ^{131}I by hyperthyroid glands may exceed 50% of the administered activity, but how frequently depends upon, among other variables, the geographic region in which treatment is provided.
3) The effective half-life of ^{131}I in hyperthyroid glands has varied in different investigations. The reference cited by Beasley *et al.* (2) recorded a mean effective half life of 6.2 ± 1.2 days in 18 patients. However, in our paper (1) we reference a report on 224 patients in which the subgroups had mean effective half lives of 4.8–5.2 days (3). Moreover, effective half-lives of thyroidal ^{131}I have varied when the disease was Graves' or toxic nodular goiter and whether anti-thyroid drugs had been administered (4,5).
4) We agree that exposure after the restriction period should be taken into account. See following text for discussion of our guiding principles.
5) Whether our recommendations insufficiently address the protection of the class of vulnerable very young children is a matter of opinion and depends upon the overall goals of the communication. Our report (1) aimed to cover major concerns in radiation protection. In Table 3, under *Information gathering for radiation safety precaution planning* and the subtitle *Home*, there is a line: "Special Household Situations…provide appropriate information and make an alternate arrangement" which is followed by "[when] Patient is responsible for the care of an infant or young child."

We could not be all-inclusive in our recommendations, but we expressed broad principles (1). Thus, on pg 338, under *Results and Discussion*, the last sentence of the first paragraph reads: "Individualization is stressed in predicting, calculating, and measuring the retained activity in each patient." And, at the beginning of Table 3, "It is incumbent upon the Radiation Treatment Team and the patient to agree upon a plan that, by environmental population assessments and by calculation, will not put others at risk of radiation exposure as identified in the NRC regulations (in a correction Thyroid **21:**689, the following was added) and ICRP recommendations."

Also, the title of Table 2 states, "Examples of Precaution Requirements and Recommendations After Treatments with ^{131}I." Again, we could not be all-inclusive, but examples demonstrate individual-specific calculations. When available, data specific to the patient undergoing treatment should be used.

Of minor note, Beasley *et al.* refer to a report (6) describing children of ages 1 and 3 years who received doses of 3.3 and 7.2 mSv. Actually in that publication, 6 of 17 children under age 3 received greater than 1 mSv, but the maximum was 5.8 mSv.

Again, we welcome the reminder by Drs. Beasley, Moore and Wagner that, in designing protection from hazards of radiation, children, and especially those less than 3 years of age, require particular attention.

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