

(b) DOL will select the site producing the highest estimate for probability of causation to adjudicate the claim.

**§ 81.24 Guidelines for leukemia.**

(a) For claims involving leukemia, DOL will calculate one or more probability of causation estimates from up to three of the four alternate leukemia risk models included in NIOSH-IREP, as specified in the NIOSH-IREP Operating Guide. These include: "Leukemia, all types except CLL" (ICD-9 codes: 204-208, except 204.1), "acute lymphocytic leukemia" (ICD-9 code: 204.0), and "acute myelogenous leukemia" (ICD-9 code: 205.0).

(b) For leukemia claims in which DOL calculates multiple probability of causation estimates, as specified in the NIOSH-IREP Operating Guide, the probability of causation estimate DOL assigns to the claim will be based on the leukemia risk model producing the highest estimate for probability of causation.

**§ 81.25 Guidelines for claims including two or more primary cancers.**

For claims including two or more primary cancers, DOL will use NIOSH-IREP to calculate the estimated probability of causation for each cancer individually. Then DOL will perform the following calculation using the probability of causation estimates produced by NIOSH-IREP:

EQUATION 1

Calculate:  $1 - \{1 - PC_1\} \times \{1 - PC_2\} \times \dots \times$

$\{1 - PC_n\}$  =  $PC_{total}$ , where  $PC_1$  is the probability of causation for one of the primary cancers identified in the

claim,  $PC_2$  is the probability of causation for a second primary cancer identified in the claim, and  $PC_n$  is the probability of causation for the nth primary cancer identified in the claim.  $PC_{total}$  is the probability that at least one of the primary cancers (cancers 1 through "n") was caused by the radiation dose estimated for the claim when Equation 1 is evaluated based on the joint distribution of  $PC_1, \dots, PC_n$ .<sup>4</sup> DOL will use the probability of causation value calculated for  $PC_{total}$  to adjudicate the claim.

[67 FR 22309, May 2, 2002; 67 FR 62096, Oct. 3, 2002]

**§ 81.30 Non-radiogenic cancers**

The following cancers are considered non-radiogenic for the purposes of EEOICPA and this part. DOL will assign a probability of causation of zero to the following cancers:

- (a) Chronic lymphocytic leukemia (ICD-9 code: 204.1)
- (b) [Reserved]

<sup>4</sup>Evaluating Equation 1 based on the individual upper 99th percentiles of  $PC_1, \dots, PC_n$  approximates the upper 99th percentile of  $PC_{total}$  whenever  $PC_1, \dots, PC_n$  are highly related, e.g., when a common dose-reconstruction is the only non-negligible source of uncertainty in the individual  $PC_i$ 's. However, this approximation can overestimate it if other sources of uncertainty contribute independently to the  $PC_1, \dots, PC_n$ , whereas treating the joint distribution as fully independent could substantially underestimate the upper 99th percentile of  $PC_{total}$  whenever the individual  $PC_i$ 's are positively correlated.

APPENDIX A TO PART 81—GLOSSARY OF ICD-9 CODES AND THEIR CANCER DESCRIPTIONS<sup>1</sup>

ICD-9 code	Cancer description
140 .....	Malignant neoplasm of lip.
141 .....	Malignant neoplasm of tongue.
142 .....	Malignant neoplasm of major salivary glands.
143 .....	Malignant neoplasm of gum.
144 .....	Malignant neoplasm of floor of mouth.
145 .....	Malignant neoplasm of other and unspecified parts of mouth.
146 .....	Malignant neoplasm of oropharynx.
147 .....	Malignant neoplasm of nasopharynx.
148 .....	Malignant neoplasm of hypopharynx.
149 .....	Malignant neoplasm of other and ill-defined sites within the lip, oral cavity, and pharynx.
150 .....	Malignant neoplasm of esophagus.
151 .....	Malignant neoplasm of stomach.
152 .....	Malignant neoplasm of small intestine, including duodenum.
153 .....	Malignant neoplasm of colon.
154 .....	Malignant neoplasm of rectum, rectosigmoid junction, and anus.