

Appendix XV

COEFFICIENT OF VARIATION FOR TRI-LEVEL CONTROLS

Control values were analyzed on 15 different laboratory tests for the period from January 14 thru December 13, 1982. Triplicate values were collected on each laboratory test at each of three different ranges (I, II, and III) except for triglyceride and alcohol which each had only ranges II & III. These control data were received from 91 groups of study participants reporting for physical examination (usually 2 groups per week). A total of 91 sets of control values were received for II & III and a total of 78 for I.

A one-way analysis of variance procedure was used on each trilevel laboratory test to determine whether or not the data varied significantly among the 91 (or 78) groups. The error term used was the pooled variance ($\hat{\sigma}_e^2$) from the triplicate values recorded for each group. The group means differed significantly at the 0.01 level on nearly all of the analyses (40 out of 42). Hence, the variability among the groups was significantly more than can be explained by the variability among the triplicate readings.

A variance component for the group-to-group variability ($\hat{\sigma}_g^2$) was estimated from the one-way analysis of variance and the standard deviation of a single measurement/group was estimated as:

$$\sigma = \sqrt{\hat{\sigma}_e^2 + \hat{\sigma}_g^2}$$

Each coefficient of variation given in the table below was computed as:

$$CV\% = \frac{\hat{\sigma} \times 100}{\bar{x}}$$

where the $\bar{x}$ is the mean of the control values for each trilevel/laboratory test. Ninety-five percent confidence limits were computed as follows:

$$\sqrt{\frac{N(N-1)v^2}{x^2 \cdot .025, N-1 [N+(N-1)v^2]}} \leq \frac{\sigma}{\mu} \leq \sqrt{\frac{N(N-1)v^2}{x^2 \cdot .975, N-1 [N+(N-1)v^2]}}$$

where v^2 is the square of the observed CV, $N = 91$ or 78 (depending on the trilevel of interest) and σ and μ are the population parameters associated with σ and $\bar{x}$ respectively.

The interval for the CV%'s marked with an asterisk in the table below did not contain the USAFSAM required CV%, implying that the estimated CV% differed significantly from the required at the 5% level. The estimate exceeded the required on 12 of the 40 trilevel sets. The average CV% was not tested.

SAMPLE MEAN, STANDARD DEVIATION AND COEFFICIENT OF VARIATION
FOR TRI-LEVEL CONTROLS USED FOR 15 BIOCHEMICAL ASSAYS

Test	I		II		III		I	II	III	Average	USAFSAM Require- ment CV%
	$\bar{x}$	σ^*	$\bar{x}$	σ	$\bar{x}$	σ	CV%	CV%	CV%		
BUN	6.6	0.296	16.6	0.415	45.9	0.702	4.50*	2.50*	1.53	2.84	2.00
Creati- nine	0.602	-	1.697	0.024	5.637	0.053	-	1.40	0.93	1.16	2.50
Glucose	49.4	0.719	100.2	1.408	212.6	1.457	1.46	1.41	0.69	1.19	3.50
Choles- terol	104.2	2.236	115.8	2.357	151.7	2.257	2.15*	2.04*	1.49	1.89	1.50
Triglyc- erides	-	-	72.39	1.869	177.4	2.464	-	2.58*	1.39	1.98	2.10
HDL	20.5	1.111	31.6	0.786	37.8	1.535	5.42*	2.48	4.06*	3.99	3.50
Total Bili- rubin	0.930	0.040	1.437	0.045	5.470	0.133	4.34*	3.12*	2.42*	3.29	1.50
Conju- gated Bili- rubin	0.400	0.043	0.811	0.043	2.383	0.110	10.74*	5.33	4.60	6.89	6.00
Alk Phos	5.274	0.203	9.855	0.273	28.37	.438	3.85*	2.77	1.54	2.72	2.70
SGOT	38.32	1.18	56.73	1.41	171.2	2.18	3.08	2.48	1.27	2.28	4.00
SGPT	28.16	2.697	26.65	0.999	101.6	1.133	2.70	3.75	1.12	2.52	5.00
GGPT	31.97	0.985	43.68	1.033	186.79	2.20	3.08	2.37	1.18	2.21	5.00
LDH	147.9	1.997	165.8	2.612	441.7	4.104	1.35	1.57	0.93	1.28	2.20
CPK	65.5	1.362	139.1	5.559	440.9	11.34	2.08	4.00	2.57	2.88	5.00
Alco- hol	-	-	48.5	0.749	99.2	1.518	-	1.54	1.53	1.54	-

* $P < 0.05$, reject the hypothesis that the sample CV% came from the population with required CV%

Appendix XVI

SPECIFIC RULES FOR ENTRY INTO THE MORBIDITY STUDY

<u>CIRCUMSTANCES</u>	<u>RULES</u>
Ranch Hander (RH) Dies Following Initial Data Collection	Control Followed Throughout and Replaced as Necessary
RH Dies of Combat Cause	Medical Records Reviewed; No Control Set Formed
RH Dies of Noncombat Cause Prior to Initial Data Collection	1st Order Surrogate Interview Accomplished; Control Selected and Followed Throughout; as Necessary
RH Noncompliant for Baseline Questionnaire and Physical	Control Followed Throughout the Study; Replaced as Necessary
RH Compliant for Questionnaire Noncompliant for Baseline Physical Examination	Control Followed Throughout the Study; Replaced as Necessary
RH Noncompliant During Follow-up	Control Followed Throughout the Study; Replaced as Necessary
Control Dies Following Initial Data Collection	Not Replaced in the Prospective Study of Morbidity
Control Dies of Combat Cause	Medical Records Reviewed; Excluded from Further Study
Control Dies of Noncombat Cause Prior to Initial Data Collection	Included in Mortality and Retro- spective Morbidity Studies; Sur- rogate Interview Accomplished. Not Included in Prospective Morbidity Study and Replaced by a Living Compliant Control.
Control Noncompliant for Baseline Physical Examination	Control Followed Throughout Study Replace as Necessary
Control Noncompliant During Follow-up	Control Followed Throughout Study Replace as Necessary
Noncompliant Control Returns to Study	Both Primary and Replacement Controls will be Continued in Study

Appendix XVII

PERCENT COMPLIANCE BY FLYING CODE AND MILITARY STATUS OF THE RANCH HAND AND COMPARISON POPULATION NON-BLACK OFFICERS

Military Status** and Flying Code*	Participation			Total
	Fully Compliant	Partially Compliant	Non- Compliant	
Ranch Hand				
AF	77.4	19.4	3.2	100
RF	86.2	10.3	3.5	100
SVF	51.9	36.5	11.6	100
AN	96.2	3.8	0.0	100
RN	93.5	4.8	1.6	100
SVN	<u>87.0</u>	<u>11.1</u>	<u>1.9</u>	<u>100</u>
TOTAL	84.7	12.1	3.2	100
Comparison Original				
AF	58.9	32.2	8.9	100
RF	86.0	14.0	0.0	100
SVF	39.3	21.4	39.3	100
AN	75.0	15.0	10.0	100
RN	86.6	11.1	2.3	100
SVN	<u>62.9</u>	<u>28.6</u>	<u>8.5</u>	<u>100</u>
TOTAL	72.9	17.8	9.3	100
Comparison Shifted				
AF	87.5	0.0	12.5	100
RF	100.0	0.0	0.0	100
SVF	37.5	62.5	0.0	100
AN	75.0	25.0	0.0	100
RN	96.0	0.0	4.0	100
SVN	<u>61.5</u>	<u>38.5</u>	<u>0.0</u>	<u>100</u>
TOTAL	78.0	18.6	3.4	100
Comparison Replaced				
AF	57.9	34.2	7.9	100
RF	83.3	16.7	0.0	100
SVF	32.4	24.3	43.3	100
AN	88.9	0.0	11.1	100
RN	77.1	12.5	10.4	100
SVN	<u>63.0</u>	<u>19.6</u>	<u>17.4</u>	<u>100</u>
TOTAL	61.4	20.7	17.9	100

*F = Flying
 *N = Nonflying
 **A = Active
 **R = Retired
 **SV = Separated/Reserve

Appendix XVIII

RELATIVE RISKS FOR SELECTED CLINICAL END POINTS

CLINICAL PARAMETERS	Percent*		Relative Risk	95% Confidential Interval	
	RH	C		Exact	Normal Approx
Self Perception of Poorer Health ≤40 yrs	19.3	10.6	1.82	(1.18,2.10)	(1.17,2.87)
Self Perception of Poorer Health >40 yrs	21.4	15.8	1.35	(1.05,1.76)	(1.05,1.75)
Older Than Stated Age	0.8	0.1	5.92	(.80,262.37)	(.76,126.11)
Lean by Body Fat	1.2	0.9	1.37	(.51,4.043)	(.51,3.78)
Obese by Body Fat	19.8	20.3	0.97	(.80,1.18)	(.80,1.18)
Sed Rate ≤40	0.5	4.2	0.13		
Sed Rate >40	5.8	5.4	1.07	(.66,1.78)	(.66,1.77)
Skin Cancer	3.35	1.42	2.35	(1.18,5.11)	(1.16,4.90)
Systemic Cancer	1.24	1.03	1.20	(.46,3.33)	(.47,3.15)
Childless Marriages	20.9	19.5	1.07	(.93,1.23)	(.93,1.23)
Not Having Desired Children	18.3	19.9	0.92	(.76,1.10)	(.76,1.10)
Abnormal Sperm	4.6	4.6	0.99	(.54,1.86)	(.54,1.83)
Miscarriage	15.9	13.6	1.17	(.95,1.45)	(.95,1.45)
Stillbirth	1.3	0.8	1.60	(.65,4.30)	(.65,4.06)
Induced Abortion	5.2	6.8	0.76	(.54,1.087)	(.54,1.09)
Non-live Birth	23.0	22.1	1.04	(.89,1.22)	(.88,1.22)
Learning Disability	8.4	6.9	1.22	(.86,1.75)	(.86,1.75)
Physical Handicaps	13.8	11.4	1.21	(.93,1.58)	(.93,1.58)
Infant Death	0.5	0.4	1.35	(.26,8.67)	(.28,7.09)
Birth Defects	8.7	6.5	1.35	(.94,1.95)	(.95,1.94)
Neonatal Death	1.5	0.4	3.78	(1.06,20.45)	(1.03,16.50)
Reported Neuro Disease	4.59	5.18	.89	(.58,1.37)	(.58,1.37)
Smell, Left	1.82	1.56	1.17	(.54,2.63)	(.55,2.55)
Smell, Right	1.63	1.43	1.14	(.51,2.68)	(.51,2.59)
Visual Fields, Left	0.29	.26	1.12	(.13,13.28)	(.15,9.46)
Visual Fields, Right	0.19	.39	.49	(.041,4.31)	(.06,3.60)
Light Reaction	0.77	.52	1.48	(.40,6.68)	(.41,5.80)
Ocular Movement	34.8	35.3	.99	(.86,1.12)	(.86,1.13)
Sensation, Left	.67	.52	1.29	(.33,6.03)	(.34,5.25)
Sensation, Right	.38	.39	.99	(.17,6.74)	(.19,5.54)
Corneal Reflex	.19	.13	1.48	(.077,87.25)	(.11,41.17)
Jaw Clench	.096	0			
Smile	.38	.26	1.48	(.21,16.35)	(.24,11.59)
Palpebral Fissure	5.65	5.43	1.04	(.70,1.57)	(.70,1.56)
Balance	19.9	19.5	1.04	(.86,1.27)	(.86,1.26)
Gag Reflex	1.44	1.68	.86	(.38,1.94)	(.39,1.89)
Speech	.28	0			
Tongue in Midline	.45	.30	1.50	(.22,16.60)	(.24,11.78)
Palate and Uvula	.29	.13	2.22	(.18,116.45)	(.21,55.29)
Neck Motion	3.92	3.23	1.21	(.73,2.06)	(.73,2.04)
Pin Prick	9.41	9.56	.98	(.73,1.33)	(.73,1.33)

*Categorical values displayed as % abnormal with relative risk.

Appendix XVIII (Cont)

RELATIVE RISKS FOR SELECTED CLINICAL END POINTS

CLINICAL PARAMETERS	Percent*		Relative Risk	95% Confidential Interval	
	RH	C		Exact	Normal Approx
Light Touch	7.08	7.46	.95	(.67,1.35)	(.67,1.35)
Muscle Status	3.56	3.62	.98	(.59,1.65)	(.59,1.64)
Vibration	7.56	8.76	.86	(.62,1.20)	(.62,1.20)
Patellar Reflex	0.385	0.649	.59	(.12,2.75)	(.14,2.53)
Achilles Reflex	3.77	3.37	1.12	(.67,1.90)	(.67,1.88)
Biceps Reflex	0.771	0.519	1.49	(.40,6.72)	(.41,5.84)
Babinski	0.871	0.259	3.36	(.70,31.96)	(.69,22.50)
Tremor	5.29	4.01	1.32	(.84,2.10)	(.84,2.08)
Coordination	4.62	3.88	1.89	(.75,1.93)	(.74,1.91)
Romberg	19.9	19.2	1.04	(.86,1.26)	(.86,1.26)
Gait	2.31	1.83	1.27	(.64,2.65)	(.64,2.58)
Psychological Illness	3.45	2.07	1.67	(.91,3.20)	(.90,3.12)
Isolation (≥ 14)	4.62	2.34	1.97	(1.14,3.58)	(1.13,3.50)
Halstead-Reitan	33.5	33.5	1.00	(.85,1.17)	(.86,1.17)
SGOT	13.9	14.8	.93	(.74,1.18)	(.74,1.18)
SGPT	7.8	8.6	.91	(.66,1.26)	(.66,1.26)
GGPT	10.8	10.3	1.053	(.79,1.40)	(.79,1.40)
Alk Phos	17.3	16.9	1.020	(.83,1.26)	(.83,1.26)
T Bill	1.8	2.0	.90	(.43,1.90)	(.44,1.87)
D Bill	29.0	29.7	.98	(.84,1.13)	(.84,1.13)
LDH	1.7	2.1	.80	(.38,1.67)	(.39,1.65)
Chol	26.0	27.7	.94	(.80,1.10)	(.80,1.097)
Trig	34.7	36.1	.96	(.85,1.10)	(.85,1.097)
Uroporphyrins	6.5	6.8	.94	(.58,1.55)	(.58,1.54)
Coproporphyrins	0.2	0.0			
d-Aminolevulinic Acid	0.0	0.0			
Verified Hepatitis	3.83	4.14	.93	(.57,1.51)	(.57,1.50)
Jaundice	4.21	4.53	.93	(.59,1.48)	(.59,1.47)
Cirrhosis	.38	.39	.99	(.17,6.72)	(.19,5.52)
Other Hepatic Verified	1.53	.39	3.93	(1.13,21.07)	(1.09,16.99)
Reported Hepatomegaly	1.75	1.71	1.02	(.48,2.26)	(.48,2.20)
Observed Hepatomegaly	1.56	0.78	2.00	(.75,6.21)	(.74,5.69)
Skin Patches, etc.,					
Reported	44.2	36.0	1.23	(1.09,1.40)	(1.09,1.39)
Reported Acne (Post SEA)	17.3	14.7	1.18	(.67,2.18)	(.67,2.15)
Reported Acne Severity	41.4	33.3	1.24	(.74,2.21)	(.74,2.20)
Reported Chloracne	36	45	.80	(.55,1.21)	(.55,1.21)
Comedones	21.7	20.7	1.050	(.87,1.26)	(.87,1.26)
Acneiform Lesions	18.3	17.5	1.047	(.85,1.29)	(.85,1.29)
Acneiform Scars	11.2	10.4	1.082	(.82,1.43)	(.82,1.43)
Cysts	11.6	10.5	1.11	(.84,1.46)	(.84,1.46)
Hyperpigmentation	8.3	7.1	1.17	(.84,1.65)	(.84,1.64)
Other Abnorms	12.6	16.3	.78	(.61,.98)	(.61,.98)
Any Abnormality	45.0	44.9	1.00	(.90,1.11)	(.90,1.11)

Appendix XVIII (Cont)

RELATIVE RISKS FOR SELECTED CLINICAL END POINTS

CLINICAL PARAMETERS	Percent*		Relative Risk	95% Confidential Interval	
	RH	C		Exact	Normal Approx
Systolic Blood Pressure <40 yrs	10.4	14.3	.73	(.46,1.18)	(.46,1.17)
Systolic Blood Pressure ≥40 yrs	23.1	24.6	.94	(.73,1.20)	(.73,1.20)
Diastolic Blood Pressure <40 yrs	5.2	5.4	.97	(.45,1.28)	(.46,2.12)
Diastolic Blood Pressure ≥40 yrs	11.6	13.9	.84	(.58,1.21)	(.58,1.21)
ECG Findings <40 yrs	20.1	23.1	.87	(.62,1.23)	(.62,1.22)
ECG Findings ≥40 yrs	30.2	28.4	1.061	(.86,1.32)	(.86,1.32)
ECG Δ <40 yrs	4.2	6.4	.66	(.05,8.73)	(.068,6.43)
ECG Δ ≥40 yrs	8.1	8.5	.95	(.49,1.88)	(.49,1.86)
Eye gnds <40 yrs	2.3	2.7	.86	(.27,2.97)	(.28,2.76)
Eye gnds ≥40 yrs	8.7	8.4	1.038	(.65,1.67)	(.65,1.66)
Peripheral Pulses	12.8	9.5	1.35	(.99,1.88)	(.99,1.88)
Reported Heart Disease	17.3	17.6	.98	(.80,1.21)	(.80,1.21)
Reported Heart Attack	.96	.52	1.85	(.54,8.05)	(.54,6.97)
Verified Heart Disease	14.06	14.10	1.00	(.79,1.27)	(.79,1.27)
Verified Heart Attack	.670	.390	1.73	(.40,10.32)	(.41,8.39)
RBC	7.43	6.28	1.18	(.82,1.71)	(.82,1.71)
WBC	12.45	11.65	1.069	(.82,1.40)	(.82,1.39)
HGB	3.28	3.27	1.003	(.59,1.74)	(.59,1.72)
HCT	8.30	7.59	1.094	(.78,1.53)	(.78,1.53)
MCU	3.76	3.40	1.11	(.66,1.90)	(.66,1.86)
MCH	46.24	39.66	1.17	(1.043,1.30)	(1.043,1.31)
MCHC	9.46	10.47	.90	(.68,1.21)	(.68,1.21)
PLT	1.16	1.97	.59	(.25,1.34)	(.26,1.32)
Occult Blood in Urine	1.341	1.293	1.037	(.43,2.60)	(.44,2.50)
Protein in Urine	1.3	2.6	.50	(.24,1.07)	(.25,1.067)
Reported Kidney Disease	5.6	3.5	1.60	(1.00,2.59)	(1.00,2.56)
T3+	.87	.26	3.34	(.69,31.77)	(.68,22.37)
T3+	5.72	8.47	.68	(.47,.96)	(.47,.96)
T4+	.77	.39	1.98	(.48,11.55)	(.48,9.38)
T4+	.10	.39	.25	(.005,3.08)	(1.13,2.64)
FTI+	.29	0			
FTI+	0	.26			
GLU	15.19	17.27	.88	(.71,1.09)	(.71,1.094)
TEST+	.48	.52	.93	(.20,4.67)	(.22,4.098)
TEST+	4.93	6.37	.77	(.52,1.16)	(.52,1.15)

Appendix XVIII (Cont)

MEAN SHIFTS FOR SELECTED CLINICAL END POINTS

CLINICAL PARAMETERS	MEAN VALUE		MEAN SHIFT
	RH	C	
Conceptions per			
Participants	2.80	2.79	.0036
Mean Number of Marriages	1.24	1.22	.0164
Ulnar Nerve Cond (Above)	55.89	56.12	-0.004
Ulnar Nerve Cond (Below)	60.52	60.71	-0.003
Peroneal	48.23	48.93	-0.014
Fatigue Score (HS ed)	15.33	13.64	.1239
Anger Score (HS ed)	11.27	9.99	.1281
Erosion (HS ed)	22.34	20.00	.1170
Anxiety (HS ed)	24.62	21.91	.1237
Depression (HS ed)	5.79	5.30	.0925
Fatigue (Coll ed)	12.79	12.83	-.0031
Anger (Coll ed)	9.55	9.46	.0095
Erosion (Coll ed)	20.19	19.90	.0146
Anxiety (Coll ed)	21.23	20.51	.0351
Depression (Coll ed)	5.22	4.46	.1704
Cornell Index (HS ed)	9.21	6.44	.4301
Cornell Index (Coll ed)	3.66	3.44	.0640
MMPI Validity Scale (HS ed)	1.85	1.73	.0694
MMPI Defensiveness Scale (HS ed)	51.99	52.03	-.0008
MMPI Consistency (HS ed)	51.95	50.65	.0257
MMPI Denial (HS ed)	53.95	55.63	-.0302
MMPI Hypochondria (HS ed)	59.74	57.22	.0440
MMPI Depression (HS ed)	60.47	58.39	.0356
MMPI Hysteria (HS ed)	60.12	58.90	.0207
MMPI Psychopathic (HS ed)	56.38	55.89	.0088
MMPI Masc/Fem (HS ed)	55.94	54.85	.0199
MMPI Paranoia (HS ed)	51.72	50.68	.0205
MMPI Anxiety (HS ed)	57.27	55.59	.0302
MMPI Schizo (HS ed)	57.53	55.97	.0279
MMPI Mania (HS ed)	56.03	54.49	.0283
MMPI Social (HS ed)	52.31	50.80	.0297
MMPI Validity (Coll ed)	1.48	1.95	-.241
MMPI Defensiveness (Coll ed)	50.26	50.33	-.0014
MMPI Consistency (Coll ed)	48.74	48.44	.0062
MMPI Denial (Coll ed)	58.46	58.41	.0009
MMPI Hypochondria (Coll ed)	55.42	54.65	.0141
MMPI Depression (Coll ed)	55.34	54.57	.0141
MMPI Hysteria (Coll ed)	59.75	59.32	.0072
MMPI Psychopathic (Coll ed)	55.21	55.66	-.0081
MMPI Masc/Fem (Coll ed)	59.15	57.87	.0221
MMPI Paranoia (Coll ed)	53.62	53.26	.0068
MMPI Anxiety (Coll ed)	53.62	54.18	-.0103
MMPI Schizo (Coll ed)	54.70	54.89	-.0035
MMPI Mania (Coll ed)	55.22	54.05	.0216
MMPI Social Introversion			
(Coll ed)	46.83	47.50	-.0141
Verbal IQ (HS ed)	110.61	101.73	.0873
Verbal IQ (Coll ed)	117.00	116.84	.0014
Perf IQ (HS ed)	102.40	104.14	-.0167
Perf IQ (Coll ed)	113.70	112.37	.0118

Appendix XVIII (Cont)

MEAN SHIFTS FOR SELECTED CLINICAL END POINTS

CLINICAL PARAMETERS	MEAN VALUE		MEAN SHIFT
	RH	C	
Full Scale IQ (HS ed)	101.18	102.74	-.0152
Full Scale IQ (Coll ed)	117.30	116.59	.0061
SGOT	33.0	33.1	-.0030
SGPT	20.3	20.5	-.0098
GGPT	40.1	39.3	.0204
Alk Phos	7.69	7.52	.0226
T Bill	.57	.58	-.0172
D Bill	.23	.24	-.0417
LDH	142.1	141.7	.0028
Chol	212.2	216.6	-.0203
Trig	121.9	124.1	-.0177
Uroporphyrins	30.2	30.8	-0.0195
Coproporphyrins	30.8	30.8	0.0
d-Aminolevulinic Acid	2337.1	2371.4	-0.0145

Appendix XIX

SPOUSE AND PARTICIPANT REPORTED BIRTH DEFECTS
NOT MEETING STUDY CRITERIA

ICD	NAME	Original		Total
		Ranch	Hand Comparison	Comparison
140-239	Neoplasms Malignant melanoma-skin Uncertain behavior of skin Unspecified nature, ovarian	1	2	2
240-279	Endocrine-Metabolic-Nutritional-Immune Gout Cystic fibrosis Hypogammaglobulinemia Albinism(ocular)	4	1	3
280-289	Blood & Blood-Forming Chronic lymphadenitis	0	1	2
290-319	Mental Hyperkinetic syndrome Dyslexia Learning disability Mental retardation	8	2	8
320-389	Nervous System & Sense Organs Epilepsy Meningitis Unspecified brain damage Polyneuropathy Visual disturbance Lagophthalmos Esotropia Cerebral palsy Congenital deafness Endophthalmitis Amblyopia Acoustic nerve disorder Hearing loss Chronic otitis media	21	16	23
390-459	Heart Disease Unspecified	1	0	2
460-519	Respiratory Allergy Asthma Pulmonary congestion & hypostasis Unspecified disease of respiratory system	7	4	6
520-579	Digestive Tooth disorders Esophagitis Unspecified hernia Ruptured rectum	5	4	6
580-629	Genitourinary Kidney disorders	3	2	2
680-709	Skin and Subcutaneous Tissue Eczema Unspecified skin disorders	8	0	2

Appendix XIX (continued)

SPOUSE AND PARTICIPANT REPORTED BIRTH DEFECTS
NOT MEETING STUDY CRITERIA

ICD	NAME	Original		Total
		Ranch Hand	Comparison	
710-739	Musculoskeletal & Connective Tissue	2	3	6
	Arthralgia			
	Juvenile osteochondrosis of spine			
	Scoliosis			
	Arthrogryposis			
	Foot Deformity			
760-779	Conditions Originating in the Perinatal Period	32	31	42
	Premature			
	Hyaline membrane disease			
	Birth trauma			
	Atelectasis			
	Perinatal infection			
	RH ISO immunization			
	Neonatal jaundice			
	Transient neonatal electrolyte disturbance			
	Unspecified hematological disorder			
	Complications of labor & delivery			
	ABO ISO immunization			
	Fetal hemorrhage			
780-799	Symptoms, Signs, and Ill-Defined Conditions	26	15	18
	Sudden death syndrome			
	Functional & undiagnosed cardiac murmurs			
	Enlarged lymph glands			
	Others			
	Jaundice, not of newborn			
	Rash			
	Other umbilical hernia			
	Swelling or lump			
	Lack of physiological development			
	Billuria			
TOTAL		120	81	122

Appendix XX

OBSERVED CANCER VERSUS SEER* DATA EXPECTED IN 1174 RANCH HANDERS (RH) AND 956 ORIGINAL COMPARISONS (COM) (QUESTIONNAIRE COMPLIANT)

<u>Group</u>	<u>Cancer Type</u>	<u>Expected</u>	<u>Observed</u>	<u>Probability of Observed</u>	<u>Probability of Observed or Larger</u>
RH	Testicle	1.09656	2	.2009	.2997
RH	Bladder	1.05838	2	.1945	.2857
RH	Digestive	4.00809	0	.0180	1.0000**
RH	Lip and Oral	1.31739	4	.0336	.0448***
RH	Genitourinary	3.59195	6	.0822	.1545
COM	Testicle	.912751	0	.4012	1.0000
COM	Bladder	.927593	1	.3671	.6047
COM	Digestive	3.52238	4	.1898	.4684
COM	Lip and Oral	1.15221	2	.2099	.3201
COM	Genitourinary	3.11509	2	.2154	.8179

*Surveillance, Epidemiology, and End Results (SEER)

**Statistically significant deficit

***Statistically significant excess