**Program 8.3 Quintile-Specific Treatment Effectiveness Analyses**

/\* Analysis for Grouped-Time Survival – QUINTILE-SPECIFIC ANALYSES \*/

/\* Binary Complementary Log-Log RANDOM-INTERCEPT MODEL with censoring \*/

**PROC** **SORT**; BY QUINT ID;

**PROC** **NLMIXED**;

PARMS b0=**0** b1=**0** sd=**1** t2=**1** t3=**1.25** t4=**1.5** t5=**1.75** t6=**2** t7=**2.25**;

ODS OUTPUT ParameterEstimates=estb;

z = b0 + b1\*tx + sd\*u;

IF (event = **1**) THEN

DO; /\* event occurred \*/

IF (surv2=**1**) THEN

p = **1** - EXP(**0** - EXP(**0**+z));

ELSE IF (surv2=**2**) THEN

p = (**1** - EXP(**0** - EXP(t2+z))) - (**1** - EXP(**0** - EXP(**0**+z)));

ELSE IF (surv2=**3**) THEN

p = (**1** - EXP(**0** - EXP(t3+z))) - (**1** - EXP(**0** - EXP(t2+z)));

ELSE IF (surv2=**4**) THEN

p = (**1** - EXP(**0** - EXP(t4+z))) - (**1** - EXP(**0** - EXP(t3+z)));

ELSE IF (surv2=**5**) THEN

p = (**1** - EXP(**0** - EXP(t5+z))) - (**1** - EXP(**0** - EXP(t4+z)));

ELSE IF (surv2=**6**) THEN

p = (**1** - EXP(**0** - EXP(t6+z))) - (**1** - EXP(**0** - EXP(t5+z)));

ELSE IF (surv2=**7**) THEN

p = (**1** - EXP(**0** - EXP(t7+z))) - (**1** - EXP(**0** - EXP(t6+z)));

END;

IF (event = **0**) THEN

DO; /\* event did not occur - censored \*/

IF (surv2=**1**) THEN

p = **1** - (**1** - EXP(**0** - EXP(**0**+z)));

ELSE IF (surv2=**2**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t2+z)));

ELSE IF (surv2=**3**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t3+z)));

ELSE IF (surv2=**4**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t4+z)));

ELSE IF (surv2=**5**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t5+z)));

ELSE IF (surv2=**6**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t6+z)));

ELSE IF (surv2=**7**) THEN

p = **1** - (**1** - EXP(**0** - EXP(t7+z)));

END;

like = LOG(p);

MODEL surv2 ~ GENERAL(like);

RANDOM u ~ NORMAL(**0**,**1**) SUBJECT=id;

ESTIMATE 'ICC' sd\*sd/((((ATAN(**1**)\***4**)\*\***2**)/**6**)+sd\*sd);

BY QUINT;

**RUN**;