\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*crude HAI rates;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**proc** **sort** data=cohort0; by patient\_id;**run**;

**data** patientlevel; set cohort0; by patient\_id;

logn=log(allcensortime);

**run**;

**proc** **genmod** data=patientlevel;

model infect\_count= /offset=logn dist=poisson;**run**;

**proc** **genmod** data=patientlevel;

class ctr\_cd\_index;

model infect\_count =ctr\_cd\_index/offset=logn dist=poisson;**run**;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

\*adjusted HAI rates;

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*;

**proc** **phreg** data=data\_analysis covs(aggregate) covm;

class

rhfail

EVENT\_HOSP\_COMBINE\_SURG

EVENT\_HOSP\_DIALYSIS\_FILTRAT

EVENT\_HOSP\_INTUB\_VENTILAT

EVENT\_HOSP\_MAJOR\_INFEC\_PBC

EVENT\_HOSP\_OTHER

EVENT\_HOSP\_ECMO

EVENT\_HOSP\_IABP

EVENT\_HOSP\_LVAD

INTERVENTION\_COMBINE\_SURG

INTERVENTION\_48\_HRS\_DIALY\_FILT

INTERVENTION\_48\_HRS\_ECMO

INTERVENTION\_48\_HRS\_FEED\_TUBE

INTERVENTION\_48\_HRS\_IABP

INTERVENTION\_48\_HRS\_LVAD

INTERVENTION\_48\_HRS\_VENTILAT

IV\_INO\_THERAPY\_AGENTS\_COMBINE

IV\_INO\_THERAPY\_AGENTS\_EPINEPH

IV\_INO\_THERAPY\_AGENTS\_NOREPI

IV\_INO\_THERAPY\_AGENTS\_OTHER

IV\_INO\_THERAPY\_AGENTS\_UNK

PREV\_CARDIAC\_OPER\_COMBINE

PREV\_CARDIAC\_OPER\_CON\_CAR\_SUR

PREV\_CARDIAC\_OPER\_LVAD

PREV\_CARDIAC\_OPER\_OTHER

PREV\_CARDIAC\_OPER\_PREV\_ECMO

PREV\_CARDIAC\_OPER\_TVR

BLOOD\_TYPE

DEVICE\_STRATEGY

TIME\_CARD\_DGN

PRIMARY\_DGN

ADMISSION\_REASON

CURRENT\_ICD

PX\_PROFILE

MODIFIER\_A

ETHNICITY

race\_new

EDUC\_LEVEL

MED\_PRE\_IMP\_COMBINE

MED\_PRE\_IMP\_AMIODARONE

MED\_PRE\_IMP\_BETA\_BLOCKERS

MED\_PRE\_IMP\_NITRIC\_OXIDE

MED\_PRE\_IMP\_INOTROPE\_INFUSION

MED\_PRE\_IMP\_DIURETICTYPE\_FUROS

MED\_PRE\_IMP\_DIURETICTYPE\_TORSE

MED\_PRE\_IMP\_DIURETICTYPE\_BUMET

MED\_PRE\_IMP\_DIURETICTYPE\_OTHER

ECG\_RHYTHM

MITRAL\_REGURG

TRICUSPID\_REGURG

AORTIC\_REGURG

LVEF

RVEF

NYHA

SEX

PRES\_COMBINE\_CAT

MODIFIER\_TCS

INTERVENTION\_48\_HRS\_

RVAD ;

model (Tstart,Tend)\*count(**0**)=

elix

rhfail

EVENT\_HOSP\_COMBINE\_SURG

EVENT\_HOSP\_DIALYSIS\_FILTRAT

EVENT\_HOSP\_INTUB\_VENTILAT

EVENT\_HOSP\_MAJOR\_INFEC\_PBC

EVENT\_HOSP\_OTHER

EVENT\_HOSP\_ECMO

EVENT\_HOSP\_IABP

EVENT\_HOSP\_LVAD

INTERVENTION\_COMBINE\_SURG

INTERVENTION\_48\_HRS\_DIALY\_FILT

INTERVENTION\_48\_HRS\_ECMO

INTERVENTION\_48\_HRS\_FEED\_TUBE

INTERVENTION\_48\_HRS\_IABP

INTERVENTION\_48\_HRS\_LVAD

INTERVENTION\_48\_HRS\_VENTILAT

IV\_INO\_THERAPY\_AGENTS\_COMBINE

IV\_INO\_THERAPY\_AGENTS\_EPINEPH

IV\_INO\_THERAPY\_AGENTS\_NOREPI

IV\_INO\_THERAPY\_AGENTS\_OTHER

IV\_INO\_THERAPY\_AGENTS\_UNK

PREV\_CARDIAC\_OPER\_COMBINE

PREV\_CARDIAC\_OPER\_CON\_CAR\_SUR

PREV\_CARDIAC\_OPER\_LVAD

PREV\_CARDIAC\_OPER\_OTHER

PREV\_CARDIAC\_OPER\_PREV\_ECMO

PREV\_CARDIAC\_OPER\_TVR

BLOOD\_TYPE

DEVICE\_STRATEGY

TIME\_CARD\_DGN

PRIMARY\_DGN

ADMISSION\_REASON

CURRENT\_ICD

PX\_PROFILE

MODIFIER\_A

ETHNICITY

race\_new

EDUC\_LEVEL

MED\_PRE\_IMP\_COMBINE

MED\_PRE\_IMP\_AMIODARONE

MED\_PRE\_IMP\_BETA\_BLOCKERS

MED\_PRE\_IMP\_NITRIC\_OXIDE

MED\_PRE\_IMP\_INOTROPE\_INFUSION

MED\_PRE\_IMP\_DIURETICTYPE\_FUROS

MED\_PRE\_IMP\_DIURETICTYPE\_TORSE

MED\_PRE\_IMP\_DIURETICTYPE\_BUMET

MED\_PRE\_IMP\_DIURETICTYPE\_OTHER

ECG\_RHYTHM

MITRAL\_REGURG

TRICUSPID\_REGURG

AORTIC\_REGURG

LVEF

RVEF

NYHA

SEX

PRES\_COMBINE\_CAT

MODIFIER\_TCS

INTERVENTION\_48\_HRS\_RVAD

AGE

ALBUMIN\_G\_DL

BILI\_TOTAL\_MG\_DL

BMI

BSA

BUN\_MG\_DL

CREAT\_MG\_DL

DIA\_BP

HEMOGLOBIN\_G\_DL

HGT\_CM

HR\_RATE

INR

PLATELET\_X10\_3\_UL

POTASSIUM\_MEQ\_L

SGOT\_AST

SGPT\_ALT

SODIUM\_MEQ\_L

SYS\_BP

WBC\_X10\_3\_UL

WGT\_KG

SODIUM\_MMOL\_L

PUL\_DIA\_PRES

PUL\_SYS\_PRES

PUL\_WEDGE\_PRES/selection=stepwise slentry=**0.25** slstay=**0.1**;

output out=linearpred xbeta=xbeta resmart=Mart\_strt;

id patient\_id;

strata ctr\_cd\_index;

**run**;

**proc** **phreg** data=linearpred covs(aggregate) covm;

model (Tstart,Tend)\*count(**0**)=/offset=xbeta;

output out=Outp resmart=Mart;

id patient\_id;

**run**;

**data** Outp; set Outp;expected=count-Mart;**run**;

**proc** **sort** data=outp; by patient\_id tstart;**run**;

**data** outp1; set outp; by patient\_id notsorted;

if first.patient\_id then

expected\_count=**0**;

expected\_count+expected;

**run**;

**proc** **sort** data=outp1; by patient\_id tstart;**run**;

**data** OE; set outp1; by patient\_id;

if last.patient\_id;

logn=log(expected\_count);

**run**;

**proc** **means** data=OE mean std min max sum;

class ctr\_cd\_index;

var count\_total expected\_count;

output out=OEcenter sum=;

**run**;

**data** OEcenter; set OEcenter;

if ctr\_cd\_index='' then delete;**run**;

**data** OEcenter; set OEcenter;

OtoE=count\_total/expected\_count;

adjInfectionRate=**17.01**\*count\_total/expected\_count;

centerid=\_n\_;

ARRAY dummy {\*} centerdummy1-centerdummy120;

DO i = **1** TO **120**;

dummy(i) = (centerid=i);

END;

InfectionRate=**17.01**;

**run**;

**proc** **sort** data=OEcenter; by OtoE;**run**;

**proc** **print** data=OEcenter(drop=centerdummy1-centerdummy120); **run**;