```
****************** Final models for reporting  ***************;


proc sort data= work.inhibcontrasts;
by Pcateg Icateg producer indicator;
run;


title 'full model CF vs nonCF';
Proc glimmix data=work.INHIBcontrasts method=laplace;
where producer ne indicator and;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = producer group=Pcateg;
random intercept / subject= indicator group=Icateg;
random intercept / subject= producer*indicator group=Pcateg*Icateg;
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;
** model 1 set producer*indicator(Pcateg*Icateg) to have single variance
estimate' ;
*** building off of submodel 1, I switched the producer & indicator
statements to nested effects for submodels 2 &3;

title "reduced model 1 (test var of interaction) set
producer*indicator(Pcateg*Icateg) to have single variance estimate";

proc glimmix data=work.INHIBcontrasts method=laplace;
where producer ne indicator and Pcateg ne CU and Icateg ne NUR;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = producer group=Pcateg;
random intercept / subject= indicator group=Icateg;
*random intercept / subject=producer*indicator group=Pcateg*Icateg;
random intercept / subject= producer*indicator (Pcateg*Icateg);
covtest / wald;
lsmeans pcateg Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;

title "reduced model 1B (test mean of interaction) by dropping it";
proc glimmix data=work.INHIBcontrasts method=laplace;
where producer ne indicator;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = producer group=Pcateg;
random intercept / subject= indicator group=Icateg;
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;

title "reduced model 2 (test var Indicator) leave interaction off, take out
uneq var indicator" ;
proc glimmix data=work.INHIBcontrasts method=laplace;
where producer ne indicator;
```

```
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = producer group=Pcateg;
random intercept / subject= indicator(Icateg);
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;

title "reduced model 2B (test mean Indicator) leave interaction off drop
indicator too" ;
proc glimmix data=work.INHIBcontrasts method=laplace;
where producer ne indicator;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = producer group=Pcateg;
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;

title "reduced model 3 (test var Producer) leave interaction off, take out
uneq var producer" ;
proc glimmix data=work.INHIBcontrasts  method=laplace;
where producer ne indicator;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = indicator group=Icateg;
random intercept / subject= producer(Pcateg);
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;

title "reduced model 3B (test mean producer) leave interaction off drop
producer too" ;
proc glimmix data=work.INHIBcontrasts  method=laplace;
where producer ne indicator;
class producer    indicator   Phouse      Pcateg      Ihouse      Icateg;
model outcome (event='1') = Pcateg|Icateg / ddfm=bw link=logit dist=binary;
random intercept / subject = indicator group=Icateg;
covtest / wald;
lsmeans  Pcateg*Icateg / pdiff OR adjust=tukey ilink CL;
nloptions tech=nrridg maxiter=500;
run;
```