# 0. Confirm prior study

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

**data** zio.bfc\_0815\_c;

set user.bfc\_2008\_c user.bfc\_2009\_c user.bfc\_2010\_c user.bfc\_2011\_c user.bfc\_2012\_c user.bfc\_2013\_c user.bfc\_2014\_c user.bfc\_2015\_c;

**run**;

**data** zio.bfc\_0815\_m;

set user.bfc\_2008\_m user.bfc\_2009\_m user.bfc\_2010\_m user.bfc\_2011\_m user.bfc\_2012\_m user.bfc\_2013\_m user.bfc\_2014\_m user.bfc\_2015\_m;

**run**;

**data** zio.bfc\_0715\_m;

set user.bfc\_2007\_m user.bfc\_2008\_m user.bfc\_2009\_m user.bfc\_2010\_m user.bfc\_2011\_m user.bfc\_2012\_m user.bfc\_2013\_m user.bfc\_2014\_m user.bfc\_2015\_m;

**run**;

\* count unique babies in bfc, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.bfc\_0815\_c;

**quit**; \* 3,155,071;

\* count unique mothers in bfc, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.bfc\_0815\_m;

**quit**; \* 2,672,234;

\* count unique mothers in bfc, 2007-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.bfc\_0715\_m;

**quit**; \* ;

\* inner join with mother-child list;

**proc** **sql**;

create table zio.bfc\_0815\_c\_m as

select p.\*, q.\*

from zio.bfc\_0815\_c as p inner join user.target\_req202202517\_mother\_child as q

on p.indi\_dscm\_no = q.child\_id;

**quit**;

\* count unique mother id with child;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0815\_c\_m;

**quit**; \* 2,316,865;

\* count unique child id with mother;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0815\_c\_m;

**quit**; \* 2,316,865; \* 1:1 matched;

\* count unique mother in mother-child list;

**proc** **sql**;

select count(unique mother\_id)

from user.target\_req202202517\_mother\_child;

**quit**; \* 2,680,092;

\* count unique child in mother-child list;

**proc** **sql**;

select count(unique child\_id)

from user.target\_req202202517\_mother\_child;

**quit**; \* 3,794,031;

**data** zio.g1eq\_0815\_m;

set user.g1eq\_2008\_m user.g1eq\_2009\_m user.g1eq\_2010\_m user.g1eq\_2011\_m user.g1eq\_2012\_m user.g1eq\_2013\_m user.g1eq\_2014\_m user.g1eq\_2015\_m;

**run**;

\* count unique mother in g1eq, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0815\_m;

**quit**; \* 1,433,701; \* ...??;

**data** zio.g1eq\_0815\_c;

set user.g1eq\_2008\_c user.g1eq\_2009\_c user.g1eq\_2010\_c user.g1eq\_2011\_c user.g1eq\_2012\_c user.g1eq\_2013\_c user.g1eq\_2014\_c user.g1eq\_2015\_c;

**run**;

\* t20 concat - mother;

**data** zio.t20\_0815\_m;

set user.t20\_200801\_m user.t20\_200802\_m user.t20\_200803\_m user.t20\_200804\_m user.t20\_200805\_m user.t20\_200806\_m user.t20\_200807\_m user.t20\_200808\_m user.t20\_200809\_m user.t20\_200810\_m user.t20\_200811\_m user.t20\_200812\_m

user.t20\_200901\_m user.t20\_200902\_m user.t20\_200903\_m user.t20\_200904\_m user.t20\_200905\_m user.t20\_200906\_m user.t20\_200907\_m user.t20\_200908\_m user.t20\_200909\_m user.t20\_200910\_m user.t20\_200911\_m user.t20\_200912\_m

user.t20\_201001\_m user.t20\_201002\_m user.t20\_201003\_m user.t20\_201004\_m user.t20\_201005\_m user.t20\_201006\_m user.t20\_201007\_m user.t20\_201008\_m user.t20\_201009\_m user.t20\_201010\_m user.t20\_201011\_m user.t20\_201012\_m

user.t20\_201101\_m user.t20\_201102\_m user.t20\_201103\_m user.t20\_201104\_m user.t20\_201105\_m user.t20\_201106\_m user.t20\_201107\_m user.t20\_201108\_m user.t20\_201109\_m user.t20\_201110\_m user.t20\_201111\_m user.t20\_201112\_m

user.t20\_201201\_m user.t20\_201202\_m user.t20\_201203\_m user.t20\_201204\_m user.t20\_201205\_m user.t20\_201206\_m user.t20\_201207\_m user.t20\_201208\_m user.t20\_201209\_m user.t20\_201210\_m user.t20\_201211\_m user.t20\_201212\_m

user.t20\_201301\_m user.t20\_201302\_m user.t20\_201303\_m user.t20\_201304\_m user.t20\_201305\_m user.t20\_201306\_m user.t20\_201307\_m user.t20\_201308\_m user.t20\_201309\_m user.t20\_201310\_m user.t20\_201311\_m user.t20\_201312\_m

user.t20\_201401\_m user.t20\_201402\_m user.t20\_201403\_m user.t20\_201404\_m user.t20\_201405\_m user.t20\_201406\_m user.t20\_201407\_m user.t20\_201408\_m user.t20\_201409\_m user.t20\_201410\_m user.t20\_201411\_m user.t20\_201412\_m

user.t20\_201501\_m user.t20\_201502\_m user.t20\_201503\_m user.t20\_201504\_m user.t20\_201505\_m user.t20\_201506\_m user.t20\_201507\_m user.t20\_201508\_m user.t20\_201509\_m user.t20\_201510\_m user.t20\_201511\_m user.t20\_201512\_m

;

**run**; \* 08.29 3:50 start; \* 08.29 3:59 end;

\* count unique mother in t20, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0815\_m;

**quit**; \* 2,670,220;

\* t20 concat - child;

**data** zio.t20\_0815\_c;

set user.t20\_200801\_c user.t20\_200802\_c user.t20\_200803\_c user.t20\_200804\_c user.t20\_200805\_c user.t20\_200806\_c user.t20\_200807\_c user.t20\_200808\_c user.t20\_200809\_c user.t20\_200810\_c user.t20\_200811\_c user.t20\_200812\_c

user.t20\_200901\_c user.t20\_200902\_c user.t20\_200903\_c user.t20\_200904\_c user.t20\_200905\_c user.t20\_200906\_c user.t20\_200907\_c user.t20\_200908\_c user.t20\_200909\_c user.t20\_200910\_c user.t20\_200911\_c user.t20\_200912\_c

user.t20\_201001\_c user.t20\_201002\_c user.t20\_201003\_c user.t20\_201004\_c user.t20\_201005\_c user.t20\_201006\_c user.t20\_201007\_c user.t20\_201008\_c user.t20\_201009\_c user.t20\_201010\_c user.t20\_201011\_c user.t20\_201012\_c

user.t20\_201101\_c user.t20\_201102\_c user.t20\_201103\_c user.t20\_201104\_c user.t20\_201105\_c user.t20\_201106\_c user.t20\_201107\_c user.t20\_201108\_c user.t20\_201109\_c user.t20\_201110\_c user.t20\_201111\_c user.t20\_201112\_c

user.t20\_201201\_c user.t20\_201202\_c user.t20\_201203\_c user.t20\_201204\_c user.t20\_201205\_c user.t20\_201206\_c user.t20\_201207\_c user.t20\_201208\_c user.t20\_201209\_c user.t20\_201210\_c user.t20\_201211\_c user.t20\_201212\_c

user.t20\_201301\_c user.t20\_201302\_c user.t20\_201303\_c user.t20\_201304\_c user.t20\_201305\_c user.t20\_201306\_c user.t20\_201307\_c user.t20\_201308\_c user.t20\_201309\_c user.t20\_201310\_c user.t20\_201311\_c user.t20\_201312\_c

user.t20\_201401\_c user.t20\_201402\_c user.t20\_201403\_c user.t20\_201404\_c user.t20\_201405\_c user.t20\_201406\_c user.t20\_201407\_c user.t20\_201408\_c user.t20\_201409\_c user.t20\_201410\_c user.t20\_201411\_c user.t20\_201412\_c

user.t20\_201501\_c user.t20\_201502\_c user.t20\_201503\_c user.t20\_201504\_c user.t20\_201505\_c user.t20\_201506\_c user.t20\_201507\_c user.t20\_201508\_c user.t20\_201509\_c user.t20\_201510\_c user.t20\_201511\_c user.t20\_201512\_c

;

**run**; \* 09.11 5:42 start; \* end 9.15;

\* count unique child in t20, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0815\_c;

**quit**; \* 3,152,979;

\* t40 concat - mother;

**data** zio.t40\_0815\_m;

set user.t40\_200801\_m user.t40\_200802\_m user.t40\_200803\_m user.t40\_200804\_m user.t40\_200805\_m user.t40\_200806\_m user.t40\_200807\_m user.t40\_200808\_m user.t40\_200809\_m user.t40\_200810\_m user.t40\_200811\_m user.t40\_200812\_m

user.t40\_200901\_m user.t40\_200902\_m user.t40\_200903\_m user.t40\_200904\_m user.t40\_200905\_m user.t40\_200906\_m user.t40\_200907\_m user.t40\_200908\_m user.t40\_200909\_m user.t40\_200910\_m user.t40\_200911\_m user.t40\_200912\_m

user.t40\_201001\_m user.t40\_201002\_m user.t40\_201003\_m user.t40\_201004\_m user.t40\_201005\_m user.t40\_201006\_m user.t40\_201007\_m user.t40\_201008\_m user.t40\_201009\_m user.t40\_201010\_m user.t40\_201011\_m user.t40\_201012\_m

user.t40\_201101\_m user.t40\_201102\_m user.t40\_201103\_m user.t40\_201104\_m user.t40\_201105\_m user.t40\_201106\_m user.t40\_201107\_m user.t40\_201108\_m user.t40\_201109\_m user.t40\_201110\_m user.t40\_201111\_m user.t40\_201112\_m

user.t40\_201201\_m user.t40\_201202\_m user.t40\_201203\_m user.t40\_201204\_m user.t40\_201205\_m user.t40\_201206\_m user.t40\_201207\_m user.t40\_201208\_m user.t40\_201209\_m user.t40\_201210\_m user.t40\_201211\_m user.t40\_201212\_m

user.t40\_201301\_m user.t40\_201302\_m user.t40\_201303\_m user.t40\_201304\_m user.t40\_201305\_m user.t40\_201306\_m user.t40\_201307\_m user.t40\_201308\_m user.t40\_201309\_m user.t40\_201310\_m user.t40\_201311\_m user.t40\_201312\_m

user.t40\_201401\_m user.t40\_201402\_m user.t40\_201403\_m user.t40\_201404\_m user.t40\_201405\_m user.t40\_201406\_m user.t40\_201407\_m user.t40\_201408\_m user.t40\_201409\_m user.t40\_201410\_m user.t40\_201411\_m user.t40\_201412\_m

user.t40\_201501\_m user.t40\_201502\_m user.t40\_201503\_m user.t40\_201504\_m user.t40\_201505\_m user.t40\_201506\_m user.t40\_201507\_m user.t40\_201508\_m user.t40\_201509\_m user.t40\_201510\_m user.t40\_201511\_m user.t40\_201512\_m

;

**run**; \* 08.29 04:13 start; \* 4:24 end;

\* t20에서 id 가져와서 t40에 붙이기;

**proc** **sql**;

create table zio.t40\_0815\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key

from zio.t40\_0815\_m as p left join zio.t20\_0815\_m as q

on p.cmn\_key = q.cmn\_key;

**run**;

\* count unique mother in t40, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_m;

**quit**; \* 2,670,220;

\* t40 concat - child;

**data** zio.t40\_0815\_c;

set user.t40\_200801\_c user.t40\_200802\_c user.t40\_200803\_c user.t40\_200804\_c user.t40\_200805\_c user.t40\_200806\_c user.t40\_200807\_c user.t40\_200808\_c user.t40\_200809\_c user.t40\_200810\_c user.t40\_200811\_c user.t40\_200812\_c

user.t40\_200901\_c user.t40\_200902\_c user.t40\_200903\_c user.t40\_200904\_c user.t40\_200905\_c user.t40\_200906\_c user.t40\_200907\_c user.t40\_200908\_c user.t40\_200909\_c user.t40\_200910\_c user.t40\_200911\_c user.t40\_200912\_c

user.t40\_201001\_c user.t40\_201002\_c user.t40\_201003\_c user.t40\_201004\_c user.t40\_201005\_c user.t40\_201006\_c user.t40\_201007\_c user.t40\_201008\_c user.t40\_201009\_c user.t40\_201010\_c user.t40\_201011\_c user.t40\_201012\_c

user.t40\_201101\_c user.t40\_201102\_c user.t40\_201103\_c user.t40\_201104\_c user.t40\_201105\_c user.t40\_201106\_c user.t40\_201107\_c user.t40\_201108\_c user.t40\_201109\_c user.t40\_201110\_c user.t40\_201111\_c user.t40\_201112\_c

user.t40\_201201\_c user.t40\_201202\_c user.t40\_201203\_c user.t40\_201204\_c user.t40\_201205\_c user.t40\_201206\_c user.t40\_201207\_c user.t40\_201208\_c user.t40\_201209\_c user.t40\_201210\_c user.t40\_201211\_c user.t40\_201212\_c

user.t40\_201301\_c user.t40\_201302\_c user.t40\_201303\_c user.t40\_201304\_c user.t40\_201305\_c user.t40\_201306\_c user.t40\_201307\_c user.t40\_201308\_c user.t40\_201309\_c user.t40\_201310\_c user.t40\_201311\_c user.t40\_201312\_c

user.t40\_201401\_c user.t40\_201402\_c user.t40\_201403\_c user.t40\_201404\_c user.t40\_201405\_c user.t40\_201406\_c user.t40\_201407\_c user.t40\_201408\_c user.t40\_201409\_c user.t40\_201410\_c user.t40\_201411\_c user.t40\_201412\_c

user.t40\_201501\_c user.t40\_201502\_c user.t40\_201503\_c user.t40\_201504\_c user.t40\_201505\_c user.t40\_201506\_c user.t40\_201507\_c user.t40\_201508\_c user.t40\_201509\_c user.t40\_201510\_c user.t40\_201511\_c user.t40\_201512\_c

;

**run**; \* 9.15 end.;

\* t20에서 id, mdcare\_strt\_dt 가져와서 t40에 붙이기;

**proc** **sql**;

create table zio.t40\_0815\_c as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t40\_0815\_c as p left join zio.t20\_0815\_c as q

on p.cmn\_key = q.cmn\_key;

**run**; \* 9.15 end;

\* count unique child in t40, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c;

**quit**; \* ;

\* t20에서 주상병 or 부상병 1이 다태아인 엄마 뽑기;

**data** zio.t20\_0815\_m\_mp;

set zio.t20\_0815\_m;

if sick\_sym1 in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450")

or

sick\_sym2 in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450");

**run**;

\* count unique mother in t20\_multiple pregnancy, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0815\_m\_mp;

**quit**; \* 58,900;

\* t40에서 주상병이 다태아인 엄마 뽑기;

**data** zio.t40\_0815\_m\_mp;

set zio.t40\_0815\_m;

if mcex\_sick\_sym in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450") ;

**run**;

\* count unique mother in t40\_multiple pregnancy, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_m\_mp;

**quit**; \* 60,968;

\* multiple pregnancy list 만들기;

**data** tmp;

set zio.t20\_0815\_m\_mp;

keep indi\_dscm\_no;

**run**;

**data** tmp2;

set zio.t40\_0815\_m\_mp;

keep indi\_dscm\_no;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sort** data=tmp2 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t2040\_mp\_list;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.t2040\_mp\_list nodupkey;

by indi\_dscm\_no;

**run**;

\* count unique mother in t20+t40\_multiple pregnancy, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t2040\_mp\_list;

**quit**; \* 60,968;

\* target list에서 multiple pregnancy인 mother만 count;

\* inner join with mother-child list;

**proc** **sql**;

create table tmp as

select p.\*, q.\*

from user.target\_req202202517\_mother\_child as p inner join zio.t2040\_mp\_list as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp;

**quit**; \* 60,968;

\* exclude multiple pregnancy from mother-child list;

**proc** **sql**;

create table zio.mother\_child\_excludeMP as

select \*

from user.target\_req202202517\_mother\_child

where mother\_id not in (select indi\_dscm\_no from zio.t2040\_mp\_list);

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.mother\_child\_excludeMP;

**quit**; \* 2,619,124;

\* BFC + mother-child list에서 multiple pregnancy인 mother만 count;

\* inner join with BFC + mother-child list;

**proc** **sql**;

create table tmp as

select p.\*, q.\*

from zio.bfc\_0815\_c\_m as p inner join zio.t2040\_mp\_list as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from tmp;

**quit**; \* 57,776;

\* exclude multiple pregnancy from BFC + mother-child list, 2008-2015;

**proc** **sql**;

create table zio.bfc\_0815\_c\_m\_excludeMP as

select \*

from zio.bfc\_0815\_c\_m

where mother\_id not in (select indi\_dscm\_no from zio.t2040\_mp\_list);

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0815\_c\_m\_excludeMP;

**quit**; \* 2,259,089;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0815\_c\_m\_excludeMP;

**quit**; \* 3,035,086;

\* t20 concat, 2005-2015 for SLE definition;

\* SLE definition: recorded within 4 years prior to pregnancy;

**data** zio.t20\_0515\_m;

set

user.t20\_200501\_m user.t20\_200502\_m user.t20\_200503\_m user.t20\_200504\_m user.t20\_200505\_m user.t20\_200506\_m user.t20\_200507\_m user.t20\_200508\_m user.t20\_200509\_m user.t20\_200510\_m user.t20\_200511\_m user.t20\_200512\_m

user.t20\_200601\_m user.t20\_200602\_m user.t20\_200603\_m user.t20\_200604\_m user.t20\_200605\_m user.t20\_200606\_m user.t20\_200607\_m user.t20\_200608\_m user.t20\_200609\_m user.t20\_200610\_m user.t20\_200611\_m user.t20\_200612\_m

user.t20\_200701\_m user.t20\_200702\_m user.t20\_200703\_m user.t20\_200704\_m user.t20\_200705\_m user.t20\_200706\_m user.t20\_200707\_m user.t20\_200708\_m user.t20\_200709\_m user.t20\_200710\_m user.t20\_200711\_m user.t20\_200712\_m

user.t20\_200801\_m user.t20\_200802\_m user.t20\_200803\_m user.t20\_200804\_m user.t20\_200805\_m user.t20\_200806\_m user.t20\_200807\_m user.t20\_200808\_m user.t20\_200809\_m user.t20\_200810\_m user.t20\_200811\_m user.t20\_200812\_m

user.t20\_200901\_m user.t20\_200902\_m user.t20\_200903\_m user.t20\_200904\_m user.t20\_200905\_m user.t20\_200906\_m user.t20\_200907\_m user.t20\_200908\_m user.t20\_200909\_m user.t20\_200910\_m user.t20\_200911\_m user.t20\_200912\_m

user.t20\_201001\_m user.t20\_201002\_m user.t20\_201003\_m user.t20\_201004\_m user.t20\_201005\_m user.t20\_201006\_m user.t20\_201007\_m user.t20\_201008\_m user.t20\_201009\_m user.t20\_201010\_m user.t20\_201011\_m user.t20\_201012\_m

user.t20\_201101\_m user.t20\_201102\_m user.t20\_201103\_m user.t20\_201104\_m user.t20\_201105\_m user.t20\_201106\_m user.t20\_201107\_m user.t20\_201108\_m user.t20\_201109\_m user.t20\_201110\_m user.t20\_201111\_m user.t20\_201112\_m

user.t20\_201201\_m user.t20\_201202\_m user.t20\_201203\_m user.t20\_201204\_m user.t20\_201205\_m user.t20\_201206\_m user.t20\_201207\_m user.t20\_201208\_m user.t20\_201209\_m user.t20\_201210\_m user.t20\_201211\_m user.t20\_201212\_m

user.t20\_201301\_m user.t20\_201302\_m user.t20\_201303\_m user.t20\_201304\_m user.t20\_201305\_m user.t20\_201306\_m user.t20\_201307\_m user.t20\_201308\_m user.t20\_201309\_m user.t20\_201310\_m user.t20\_201311\_m user.t20\_201312\_m

user.t20\_201401\_m user.t20\_201402\_m user.t20\_201403\_m user.t20\_201404\_m user.t20\_201405\_m user.t20\_201406\_m user.t20\_201407\_m user.t20\_201408\_m user.t20\_201409\_m user.t20\_201410\_m user.t20\_201411\_m user.t20\_201412\_m

user.t20\_201501\_m user.t20\_201502\_m user.t20\_201503\_m user.t20\_201504\_m user.t20\_201505\_m user.t20\_201506\_m user.t20\_201507\_m user.t20\_201508\_m user.t20\_201509\_m user.t20\_201510\_m user.t20\_201511\_m user.t20\_201512\_m

;

**run**; \* 08.30 2:20 start; \* 08.30 2:34 end;

\* count unique mother in t20, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0515\_m;

**quit**; \* 2,670,349;

\* t40 concat;

**data** zio.t40\_0515\_m;

set

user.t40\_200501\_m user.t40\_200502\_m user.t40\_200503\_m user.t40\_200504\_m user.t40\_200505\_m user.t40\_200506\_m user.t40\_200507\_m user.t40\_200508\_m user.t40\_200509\_m user.t40\_200510\_m user.t40\_200511\_m user.t40\_200512\_m

user.t40\_200601\_m user.t40\_200602\_m user.t40\_200603\_m user.t40\_200604\_m user.t40\_200605\_m user.t40\_200606\_m user.t40\_200607\_m user.t40\_200608\_m user.t40\_200609\_m user.t40\_200610\_m user.t40\_200611\_m user.t40\_200612\_m

user.t40\_200701\_m user.t40\_200702\_m user.t40\_200703\_m user.t40\_200704\_m user.t40\_200705\_m user.t40\_200706\_m user.t40\_200707\_m user.t40\_200708\_m user.t40\_200709\_m user.t40\_200710\_m user.t40\_200711\_m user.t40\_200712\_m

user.t40\_200801\_m user.t40\_200802\_m user.t40\_200803\_m user.t40\_200804\_m user.t40\_200805\_m user.t40\_200806\_m user.t40\_200807\_m user.t40\_200808\_m user.t40\_200809\_m user.t40\_200810\_m user.t40\_200811\_m user.t40\_200812\_m

user.t40\_200901\_m user.t40\_200902\_m user.t40\_200903\_m user.t40\_200904\_m user.t40\_200905\_m user.t40\_200906\_m user.t40\_200907\_m user.t40\_200908\_m user.t40\_200909\_m user.t40\_200910\_m user.t40\_200911\_m user.t40\_200912\_m

user.t40\_201001\_m user.t40\_201002\_m user.t40\_201003\_m user.t40\_201004\_m user.t40\_201005\_m user.t40\_201006\_m user.t40\_201007\_m user.t40\_201008\_m user.t40\_201009\_m user.t40\_201010\_m user.t40\_201011\_m user.t40\_201012\_m

user.t40\_201101\_m user.t40\_201102\_m user.t40\_201103\_m user.t40\_201104\_m user.t40\_201105\_m user.t40\_201106\_m user.t40\_201107\_m user.t40\_201108\_m user.t40\_201109\_m user.t40\_201110\_m user.t40\_201111\_m user.t40\_201112\_m

user.t40\_201201\_m user.t40\_201202\_m user.t40\_201203\_m user.t40\_201204\_m user.t40\_201205\_m user.t40\_201206\_m user.t40\_201207\_m user.t40\_201208\_m user.t40\_201209\_m user.t40\_201210\_m user.t40\_201211\_m user.t40\_201212\_m

user.t40\_201301\_m user.t40\_201302\_m user.t40\_201303\_m user.t40\_201304\_m user.t40\_201305\_m user.t40\_201306\_m user.t40\_201307\_m user.t40\_201308\_m user.t40\_201309\_m user.t40\_201310\_m user.t40\_201311\_m user.t40\_201312\_m

user.t40\_201401\_m user.t40\_201402\_m user.t40\_201403\_m user.t40\_201404\_m user.t40\_201405\_m user.t40\_201406\_m user.t40\_201407\_m user.t40\_201408\_m user.t40\_201409\_m user.t40\_201410\_m user.t40\_201411\_m user.t40\_201412\_m

user.t40\_201501\_m user.t40\_201502\_m user.t40\_201503\_m user.t40\_201504\_m user.t40\_201505\_m user.t40\_201506\_m user.t40\_201507\_m user.t40\_201508\_m user.t40\_201509\_m user.t40\_201510\_m user.t40\_201511\_m user.t40\_201512\_m

;

**run**; \* 08.30 2:35 start; \* 08.30 end;

\* t20에서 id, mdcare\_strt\_dt 가져와서 t40에 붙이기;

**proc** **sql**;

create table zio.t40\_0515\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t40\_0515\_m as p left join zio.t20\_0515\_m as q

on p.cmn\_key = q.cmn\_key;

**run**;

\* count unique mother in t40, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m;

**quit**; \* 2,670,349;

\* t20에서 주상병 or 부상병 1이 SLE인 엄마 뽑기;

\* substr (1,3);

**data** zio.t20\_0515\_m\_SLE;

set zio.t20\_0515\_m;

if substr(sick\_sym1, **1**, **3**) in ("M32")

or

substr(sick\_sym2, **1**, **3**) in ("M32");

\* or sick\_sym3 in ("M32") or sick\_sym4 in ("M32") or sick\_sym5 in ("M32");

**run**;

\* count unique mother in t20\_SLE, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0515\_m\_SLE;

**quit**; \* 6,777;

\* t40에서 주상병이 SLE인 엄마 뽑기;

**data** zio.t40\_0515\_m\_SLE;

set zio.t40\_0515\_m;

if substr(mcex\_sick\_sym, **1**, **3**) in ("M32") ;

**run**;

\* count unique mother in t40\_SLE, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m\_SLE;

**quit**; \* 15,684;

\* SLE list 만들기;

**data** tmp;

set zio.t20\_0515\_m\_SLE;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**data** tmp2;

set zio.t40\_0515\_m\_SLE;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sort** data=tmp2 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t2040\_SLE\_list;

set tmp;

**run**;

**proc** **sort** data=zio.t2040\_SLE\_list nodupkey;

by indi\_dscm\_no;

**run**;

\* count unique mother in t20+t40\_SLE, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t2040\_SLE\_list;

**quit**; \* 15,684;

**data** zio.t2040\_SLE\_list;

set zio.t2040\_SLE\_list;

SLE = **1**;

**run**;

\* bfc+mother\_child list에 SLE list 붙이기;

**proc** **sql**;

create table zio.bfc\_0815\_c\_m\_excludemp\_sle as

select p.\*, q.\*

from zio.bfc\_0815\_c\_m\_excludemp as p left join zio.t2040\_SLE\_list as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* count SLE mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0815\_c\_m\_excludemp\_sle

where sle = **1**;

**quit**; \* 13,331;

**data** zio.bfc\_0815\_c\_m\_excludemp\_sle;

set zio.bfc\_0815\_c\_m\_excludemp\_sle;

if mdcare\_strt\_dt ^= **.** then sle\_year = substr(mdcare\_strt\_dt, **1**, **4**); else sle\_year = **.**;

if sle = **1** then gap = byear - sle\_year;

if gap <= **4** and sle = **1** then sle\_before\_preg = **1**;

else sle\_before\_preg = **0**;

**run**;

\* count SLE mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0815\_c\_m\_excludemp\_sle

where sle\_before\_preg = **1**;

**quit**; \* 4460;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0815\_c\_m\_excludemp\_sle

where sle\_before\_preg = **1**;

**quit**; \* 5464;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0815\_c\_m\_excludemp\_sle;

**quit**; \* 2,259,089;

\* indi\_dscm\_no (child id) 기준 drop dup 해도 됨;

\* 이때, std\_yyyy는 bfc table의 변수임. 큰 의미 x;

**proc** **sort** data=zio.bfc\_0815\_c\_m\_excludemp\_sle;

by indi\_dscm\_no std\_yyyy;

**run**;

**proc** **sort** data=zio.bfc\_0815\_c\_m\_excludemp\_sle nodupkey;

by indi\_dscm\_no;

**run**;

\* t30 concat;

**data** zio.t30\_0515\_m;

set

user.t30\_200501\_m user.t30\_200502\_m user.t30\_200503\_m user.t30\_200504\_m user.t30\_200505\_m user.t30\_200506\_m user.t30\_200507\_m user.t30\_200508\_m user.t30\_200509\_m user.t30\_200510\_m user.t30\_200511\_m user.t30\_200512\_m

user.t30\_200601\_m user.t30\_200602\_m user.t30\_200603\_m user.t30\_200604\_m user.t30\_200605\_m user.t30\_200606\_m user.t30\_200607\_m user.t30\_200608\_m user.t30\_200609\_m user.t30\_200610\_m user.t30\_200611\_m user.t30\_200612\_m

user.t30\_200701\_m user.t30\_200702\_m user.t30\_200703\_m user.t30\_200704\_m user.t30\_200705\_m user.t30\_200706\_m user.t30\_200707\_m user.t30\_200708\_m user.t30\_200709\_m user.t30\_200710\_m user.t30\_200711\_m user.t30\_200712\_m

user.t30\_200801\_m user.t30\_200802\_m user.t30\_200803\_m user.t30\_200804\_m user.t30\_200805\_m user.t30\_200806\_m user.t30\_200807\_m user.t30\_200808\_m user.t30\_200809\_m user.t30\_200810\_m user.t30\_200811\_m user.t30\_200812\_m

user.t30\_200901\_m user.t30\_200902\_m user.t30\_200903\_m user.t30\_200904\_m user.t30\_200905\_m user.t30\_200906\_m user.t30\_200907\_m user.t30\_200908\_m user.t30\_200909\_m user.t30\_200910\_m user.t30\_200911\_m user.t30\_200912\_m

user.t30\_201001\_m user.t30\_201002\_m user.t30\_201003\_m user.t30\_201004\_m user.t30\_201005\_m user.t30\_201006\_m user.t30\_201007\_m user.t30\_201008\_m user.t30\_201009\_m user.t30\_201010\_m user.t30\_201011\_m user.t30\_201012\_m

user.t30\_201101\_m user.t30\_201102\_m user.t30\_201103\_m user.t30\_201104\_m user.t30\_201105\_m user.t30\_201106\_m user.t30\_201107\_m user.t30\_201108\_m user.t30\_201109\_m user.t30\_201110\_m user.t30\_201111\_m user.t30\_201112\_m

user.t30\_201201\_m user.t30\_201202\_m user.t30\_201203\_m user.t30\_201204\_m user.t30\_201205\_m user.t30\_201206\_m user.t30\_201207\_m user.t30\_201208\_m user.t30\_201209\_m user.t30\_201210\_m user.t30\_201211\_m user.t30\_201212\_m

user.t30\_201301\_m user.t30\_201302\_m user.t30\_201303\_m user.t30\_201304\_m user.t30\_201305\_m user.t30\_201306\_m user.t30\_201307\_m user.t30\_201308\_m user.t30\_201309\_m user.t30\_201310\_m user.t30\_201311\_m user.t30\_201312\_m

user.t30\_201401\_m user.t30\_201402\_m user.t30\_201403\_m user.t30\_201404\_m user.t30\_201405\_m user.t30\_201406\_m user.t30\_201407\_m user.t30\_201408\_m user.t30\_201409\_m user.t30\_201410\_m user.t30\_201411\_m user.t30\_201412\_m

user.t30\_201501\_m user.t30\_201502\_m user.t30\_201503\_m user.t30\_201504\_m user.t30\_201505\_m user.t30\_201506\_m user.t30\_201507\_m user.t30\_201508\_m user.t30\_201509\_m user.t30\_201510\_m user.t30\_201511\_m user.t30\_201512\_m

;

**run**; \*;

\* t20에서 id, mdcare\_strt\_dt 가져와서 t30에 붙이기;

**proc** **sql**;

create table zio.t30\_0515\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t30\_0515\_m as p left join zio.t20\_0515\_m as q

on p.cmn\_key = q.cmn\_key;

**run**;

\* 문진 붙이기;

\* (23.10.18) 08-17로 다시 붙이기;

**data** zio.i1q\_rst\_0817\_c;

set user.i1q\_rst\_2008\_c user.i1q\_rst\_2009\_c user.i1q\_rst\_2010\_c user.i1q\_rst\_2011\_c user.i1q\_rst\_2012\_c user.i1q\_rst\_2013\_c user.i1q\_rst\_2014\_c

user.i1q\_rst\_2015\_c user.i1q\_rst\_2016\_c user.i1q\_rst\_2017\_c (encoding=asciiany);

**run**;

**data** zio.i2q\_rst\_0817\_c;

set user.i2q\_rst\_2008\_c user.i2q\_rst\_2009\_c user.i2q\_rst\_2010\_c user.i2q\_rst\_2011\_c user.i2q\_rst\_2012\_c user.i2q\_rst\_2013\_c user.i2q\_rst\_2014\_c

user.i2q\_rst\_2015\_c user.i2q\_rst\_2016\_c user.i2q\_rst\_2017\_c (encoding=asciiany);

**run**;

**data** zio.i3q\_rst\_0817\_c;

set user.i3q\_rst\_2008\_c user.i3q\_rst\_2009\_c user.i3q\_rst\_2010\_c user.i3q\_rst\_2011\_c user.i3q\_rst\_2012\_c user.i3q\_rst\_2013\_c user.i3q\_rst\_2014\_c

user.i3q\_rst\_2015\_c user.i3q\_rst\_2016\_c user.i3q\_rst\_2017\_c (encoding=asciiany);

**run**;

/\*data zio.i4q\_rst\_1220\_c; \*/

/\*set user.i4q\_rst\_2012\_c user.i4q\_rst\_2013\_c user.i4q\_rst\_2014\_c user.i4q\_rst\_2015\_c user.i4q\_rst\_2016\_c user.i4q\_rst\_2017\_c user.i4q\_rst\_2018\_c user.i4q\_rst\_2019\_c user.i4q\_rst\_2020\_c (encoding=asciiany); \*/

/\*run; \* 안붙음; \*/

**data** zio.i5q\_rst\_0817\_c;

set user.i5q\_rst\_2008\_c user.i5q\_rst\_2009\_c user.i5q\_rst\_2010\_c user.i5q\_rst\_2011\_c user.i5q\_rst\_2012\_c user.i5q\_rst\_2013\_c user.i5q\_rst\_2014\_c

user.i5q\_rst\_2015\_c user.i5q\_rst\_2016\_c user.i5q\_rst\_2017\_c (encoding=asciiany);

**run**;

/\*data zio.i6q\_rst\_1220\_c; \*/

/\*set user.i6q\_rst\_2012\_c user.i6q\_rst\_2013\_c user.i6q\_rst\_2014\_c user.i6q\_rst\_2015\_c user.i6q\_rst\_2016\_c user.i6q\_rst\_2017\_c user.i6q\_rst\_2018\_c user.i6q\_rst\_2019\_c user.i6q\_rst\_2020\_c (encoding=asciiany); \*/

/\*run; \* 안붙음; \*/

/\*data zio.i7q\_rst\_1220\_c; \*/

/\*set user.i7q\_rst\_2012\_c user.i7q\_rst\_2013\_c user.i7q\_rst\_2014\_c user.i7q\_rst\_2015\_c user.i7q\_rst\_2016\_c user.i7q\_rst\_2017\_c user.i7q\_rst\_2018\_c user.i7q\_rst\_2019\_c user.i7q\_rst\_2020\_c (encoding=asciiany); \*/

/\*run; \* 안붙음; \*/

\* 안붙는 문진에 대한 처리;

\* i4q;

**data** ziodata.i4q\_rst\_2008\_c;

set user.i4q\_rst\_2008\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2009\_c;

set user.i4q\_rst\_2009\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2010\_c;

set user.i4q\_rst\_2010\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2011\_c;

set user.i4q\_rst\_2011\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2012\_c;

set user.i4q\_rst\_2012\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2013\_c;

set user.i4q\_rst\_2013\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2014\_c;

set user.i4q\_rst\_2014\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2015\_c;

set user.i4q\_rst\_2015\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2016\_c;

set user.i4q\_rst\_2016\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i4q\_rst\_2017\_c;

set user.i4q\_rst\_2017\_c;

drop I4Q\_VCC\_JENC\_FRQ;

**run**;

**data** zio.i4q\_rst\_0817\_c;

set ziodata.i4q\_rst\_2008\_c ziodata.i4q\_rst\_2009\_c ziodata.i4q\_rst\_2010\_c ziodata.i4q\_rst\_2011\_c ziodata.i4q\_rst\_2012\_c

ziodata.i4q\_rst\_2013\_c ziodata.i4q\_rst\_2014\_c ziodata.i4q\_rst\_2015\_c ziodata.i4q\_rst\_2016\_c ziodata.i4q\_rst\_2017\_c (encoding=asciiany);

**run**;

\* i6q;

**data** ziodata.i6q\_rst\_2008\_c;

set user.i6q\_rst\_2008\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2009\_c;

set user.i6q\_rst\_2009\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2010\_c;

set user.i6q\_rst\_2010\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2011\_c;

set user.i6q\_rst\_2011\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2012\_c;

set user.i6q\_rst\_2012\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2013\_c;

set user.i6q\_rst\_2013\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2014\_c;

set user.i6q\_rst\_2014\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2015\_c;

set user.i6q\_rst\_2015\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2016\_c;

set user.i6q\_rst\_2016\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i6q\_rst\_2017\_c;

set user.i6q\_rst\_2017\_c;

drop I6Q\_VCC\_JENC\_FRQ;

**run**;

**data** zio.i6q\_rst\_0817\_c;

set ziodata.i6q\_rst\_2008\_c ziodata.i6q\_rst\_2009\_c ziodata.i6q\_rst\_2010\_c ziodata.i6q\_rst\_2011\_c ziodata.i6q\_rst\_2012\_c

ziodata.i6q\_rst\_2013\_c ziodata.i6q\_rst\_2014\_c ziodata.i6q\_rst\_2015\_c ziodata.i6q\_rst\_2016\_c ziodata.i6q\_rst\_2017\_c (encoding=asciiany);

**run**;

\* i7q;

**data** ziodata.i7q\_rst\_2008\_c;

set user.i7q\_rst\_2008\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2009\_c;

set user.i7q\_rst\_2009\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2010\_c;

set user.i7q\_rst\_2010\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2011\_c;

set user.i7q\_rst\_2011\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2012\_c;

set user.i7q\_rst\_2012\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2013\_c;

set user.i7q\_rst\_2013\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2014\_c;

set user.i7q\_rst\_2014\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2015\_c;

set user.i7q\_rst\_2015\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2016\_c;

set user.i7q\_rst\_2016\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** ziodata.i7q\_rst\_2017\_c;

set user.i7q\_rst\_2017\_c;

drop I7Q\_VCC\_JENC\_FRQ;

**run**;

**data** zio.i7q\_rst\_0817\_c;

set ziodata.i7q\_rst\_2008\_c ziodata.i7q\_rst\_2009\_c ziodata.i7q\_rst\_2010\_c ziodata.i7q\_rst\_2011\_c ziodata.i7q\_rst\_2012\_c

ziodata.i7q\_rst\_2013\_c ziodata.i7q\_rst\_2014\_c ziodata.i7q\_rst\_2015\_c ziodata.i7q\_rst\_2016\_c ziodata.i7q\_rst\_2017\_c (encoding=asciiany);

**run**;

\* keep only needed variables;

**data** zio.i1q\_rst\_0817\_c;

set zio.i1q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i1q\_bth\_date i1q\_prem i1q\_exp\_date i1q\_bth\_wght;

**run**;

**data** zio.i2q\_rst\_0817\_c;

set zio.i2q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i2q\_bth\_date i2q\_prem i2q\_exp\_date i2q\_bth\_wght;

**run**;

**data** zio.i3q\_rst\_0817\_c;

set zio.i3q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i3q\_bth\_date i3q\_prem i3q\_exp\_date i3q\_bth\_wght;

**run**;

**data** zio.i4q\_rst\_0817\_c;

set zio.i4q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i4q\_bth\_date i4q\_prem i4q\_exp\_date i4q\_bth\_wght;

**run**;

**data** zio.i5q\_rst\_0817\_c;

set zio.i5q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i5q\_bth\_date i5q\_prem i5q\_exp\_date i5q\_bth\_wght;

**run**;

**data** zio.i6q\_rst\_0817\_c;

set zio.i6q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i6q\_bth\_date i6q\_prem i6q\_exp\_date i6q\_bth\_wght;

**run**;

**data** zio.i7q\_rst\_0817\_c;

set zio.i7q\_rst\_0817\_c;

keep indi\_dscm\_no exmd\_bz\_yyyy hme\_dt sex\_type i7q\_bth\_date i7q\_prem i7q\_exp\_date i7q\_bth\_wght;

**run**;

\* rename for set;

**data** zio.i1q\_rst\_0817\_c;

set zio.i1q\_rst\_0817\_c;

rename i1q\_bth\_date = bth\_date i1q\_prem = prem i1q\_exp\_date = exp\_date i1q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i2q\_rst\_0817\_c;

set zio.i2q\_rst\_0817\_c;

rename i2q\_bth\_date = bth\_date i2q\_prem = prem i2q\_exp\_date = exp\_date i2q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i3q\_rst\_0817\_c;

set zio.i3q\_rst\_0817\_c;

rename i3q\_bth\_date = bth\_date i3q\_prem = prem i3q\_exp\_date = exp\_date i3q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i4q\_rst\_0817\_c;

set zio.i4q\_rst\_0817\_c;

rename i4q\_bth\_date = bth\_date i4q\_prem = prem i4q\_exp\_date = exp\_date i4q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i5q\_rst\_0817\_c;

set zio.i5q\_rst\_0817\_c;

rename i5q\_bth\_date = bth\_date i5q\_prem = prem i5q\_exp\_date = exp\_date i5q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i6q\_rst\_0817\_c;

set zio.i6q\_rst\_0817\_c;

rename i6q\_bth\_date = bth\_date i6q\_prem = prem i6q\_exp\_date = exp\_date i6q\_bth\_wght = bth\_wght;

**run**;

**data** zio.i7q\_rst\_0817\_c;

set zio.i7q\_rst\_0817\_c;

rename i7q\_bth\_date = bth\_date i7q\_prem = prem i7q\_exp\_date = exp\_date i7q\_bth\_wght = bth\_wght;

**run**;

\* set all;

**data** zio.i1234567q\_rst\_0817\_c;

set zio.i1q\_rst\_0817\_c zio.i2q\_rst\_0817\_c zio.i3q\_rst\_0817\_c zio.i4q\_rst\_0817\_c zio.i5q\_rst\_0817\_c zio.i6q\_rst\_0817\_c zio.i7q\_rst\_0817\_c;

**run**;

\* id 하나만 뽑아보기;

**data** tmp;

set zio.i1234567q\_rst\_0817\_c;

if indi\_dscm\_no = **59418776**;

**run**;

\* copy for dropdup;

**data** zio.i1234567q\_rst\_0817\_c\_nodup;

set zio.i1234567q\_rst\_0817\_c;

**run**;

\* drop dup by id;

**proc** **sort** data=zio.i1234567q\_rst\_0817\_c\_nodup nodupkey;

by indi\_dscm\_no;

**run**; \* unique child in question table .... 3,471,353;

\* left join to main table;

\* zio.bfc\_0815\_c\_m\_excludemp\_sle;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.\*

from zio.bfc\_0815\_c\_m\_excludemp\_sle as p left join zio.i1234567q\_rst\_1220\_c as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**proc** **means** data=zio.bfc\_sle\_q n nmiss mean median min max std;

**run**;

\* delete missing;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if bth\_date = "" then delete;

**run**;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if bth\_wght = **.** then delete;

if prem = **.** then delete;

**run**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_sle\_q;

**quit**; \* 2,107,694;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_sle\_q;

**quit**; \* 2,730,131;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_sle\_q

where sle\_before\_preg = **1**;

**quit**; \* 4,017;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_sle\_q

where sle\_before\_preg = **1**;

**quit**; \* 4,869;

\* bfc\_mother 에서 byear 가져오기;

**data** zio.bfc\_0815\_m;

set zio.bfc\_0815\_m;

rename byear = mother\_byear;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.mother\_byear

from zio.bfc\_sle\_q as p left join zio.bfc\_0815\_m as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* drop dup by id;

**proc** **sort** data=zio.bfc\_sle\_q nodupkey;

by indi\_dscm\_no;

**run**; \* unique child in question table .... 2,730,131;

\* mother age;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

mother\_age = byear - mother\_byear;

**run**;

\* split sle and non-sle group;

**data** zio.bfc\_sle\_q\_slepos;

set zio.bfc\_sle\_q;

if sle\_before\_preg = **1**;

**run**;

**data** zio.bfc\_sle\_q\_sleneg;

set zio.bfc\_sle\_q;

if sle\_before\_preg = **0**;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_slepos n nmiss mean median min max std;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_sleneg n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table prem;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table prem;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table sex\_type;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table sex\_type;

\* mother comorbidity define;

\* t40에서 뽑기;

**data** zio.t40\_0515\_m\_comorbidity;

set zio.t40\_0515\_m;

**run**;

**data** zio.t40\_0515\_m\_comorbidity;

set zio.t40\_0515\_m\_comorbidity;

if substr(mcex\_sick\_sym, **1**, **3**) in ("E10", "E11", "E12", "E13", "E14") or substr(mcex\_sick\_sym, **1**, **4**) in ("O240", "O241", "O242", "O243") then DM = **1**; else DM = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("I10", "I11", "I12", "I13", "I15") or substr(mcex\_sick\_sym, **1**, **4**) in ("O100", "O101", "O102", "O103", "O104", "O109") then HTN = **1**; else HTN = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O244", "O249") then GDM = **1**; else GDM = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("O14", "O15", "O11") then PE = **1**; else PE = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O820", "O821", "O822", "O828", "O829", "O842") or

substr(mcex\_sick\_sym, **1**, **6**) in ("O01602", "O01601", "O01603", "O01600") or substr(mcex\_sick\_sym, **1**, **5**) in ("H6113", "H6114", "H6116", "H6117", "H6124", "H6128",

"H6122") then CE = **1**; else CE = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O450", "O458", "O459") then PA = **1**; else PA = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O440", "O441") then PP = **1**; else PP = **0**;

\* nulliparity;

if substr(mcex\_sick\_sym, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcex\_sick\_sym, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then NP = **1**; else NP = **0**; \* 23.10.13 EDI 코드 추가됨;

\* nulliparity end;

/\*\* nulliparity; \*/

/\*if mcex\_sick\_sym in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510", "H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130",\*/

/\*"R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517") \*/

/\*then NP = 1; else NP = 0; \* 23.10.13 EDI 코드 추가됨; \* 23.10.16 자르지 말고 코드 전체 묶어서 돌려보자; \* 동일한 109명, 해결안됨; \*/

/\*\* nulliparity end; \*/

if substr(mcex\_sick\_sym, **1**, **4**) in ("O601", "O603") then PB = **1**; else PB = **0**; \* 23.10.06 preterm birth icd10 정의 추가;

**run**; \* 여기까지는 상병진단기록이 id별 다수이므로, 절대 이 상태에서 drop dup 하면 안됨!;

\* 시험삼아 네자리로 잘라보자 (nulliparity) ;

**data** tmp;

set zio.t40\_0515\_m\_comorbidity;

if substr(mcex\_sick\_sym, **1**, **4**) in ("H595", "H597", "H613", "H605", "H611", "H612", "R435", "R313", "R314", "RA43", "RA31", "RA31", "R436", "RA36", "R450", "R451")

then NP = **1**; else NP = **0**; \* 23.10.13 EDI 코드 추가됨;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp

where np = **1**;

**quit**; \* 328,980; \* 네자리만 쓴것;

\* 23.10.06 LGA, preterm birth 추가정의 - child t40 table;

**data** zio.t40\_0815\_c\_lgapb;

set zio.t40\_0815\_c;

if substr(mcex\_sick\_sym, **1**, **4**) in ("P081") then LGA = **1**; else LGA = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("P072", "P073") then PB = **1**; else PB = **0**;

**run**;

\* 혹시 모르니 mother T20에서 nulliparity 뽑아보기;

**data** zio.t20\_0515\_m\_parity;

set zio.t20\_0515\_m;

if substr(sick\_sym1, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(sick\_sym1, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517");

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0515\_m\_parity;

**quit**; \* 34; \* 당연하지만, t40보다 적게 잡힘;

\* 설마 nulliparity 아기 테이블에서 잡아야 하나?; \* 안잡힘;

**data** zio.t40\_0815\_c\_np;

set zio.t40\_0815\_c;

if substr(mcex\_sick\_sym, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcex\_sick\_sym, **1**, **5**) in

("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then NP = **1**; else NP = **0**; \* 23.10.13 EDI 코드 추가됨;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c\_np

where np = **1**;

**quit**; \* 126; \* 여전히 안잡힘;

**data** tmp;

set zio.t40\_0815\_c\_np;

if np = **1**;

**run**;

\* (23.11.03) mother T30에서 nulliparity 뽑아보기;

\* EDI 코드, 기존코드 모두 추가되어 있음;

**data** zio.t30\_0515\_m\_parity;

set zio.t30\_0515\_m;

if substr(mcare\_div\_cd\_adj, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then NP = **1**; else NP = **0**;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0515\_m\_parity

where np = **1**;

**quit**; \* 1,962,512; \* 제대로 뽑힘;

\* count unique mother who has htn for example, 2005-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m\_comorbidity

where htn = **1**;

**quit**; \* 143,009;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m\_comorbidity

where np = **1**;

**quit**; \* 109..???;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m\_comorbidity

where ce = **1**;

**quit**; \* 929,656;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0515\_m\_comorbidity

where pb = **1**;

**quit**; \* 66,540;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c\_LGA

where lga = **1**;

**quit**; \* 18,215; \* 23.10.06 여기까지 돌려놓고 감;

\* 각 질병별 ppl list 만들기;

\* 1. DM;

**data** zio.t40\_0515\_m\_dm;

set zio.t40\_0515\_m\_comorbidity;

if dm = **1**;

**run**;

**data** zio.t40\_0515\_m\_dm;

set zio.t40\_0515\_m\_dm;

keep indi\_dscm\_no mdcare\_strt\_dt dm;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_dm;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_dm nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_dm;

set zio.t40\_0515\_m\_dm;

rename mdcare\_strt\_dt = DM\_mdcare\_strt\_dt;

**run**;

\* 2. HTN;

**data** zio.t40\_0515\_m\_htn;

set zio.t40\_0515\_m\_comorbidity;

if htn = **1**;

**run**;

**data** zio.t40\_0515\_m\_htn;

set zio.t40\_0515\_m\_htn;

keep indi\_dscm\_no mdcare\_strt\_dt htn;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_htn;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_htn nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_htn;

set zio.t40\_0515\_m\_htn;

rename mdcare\_strt\_dt = HTN\_mdcare\_strt\_dt;

**run**;

\* 3. GDM;

\* 23.09.11 GDM 정의 수정 - 임신 기간 중 3회 이상 찍힌 사람으로;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_comorbidity;

if gdm = **1**;

**run**;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

keep indi\_dscm\_no mdcare\_strt\_dt gdm;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_gdm;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0515\_m\_gdm as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0515\_m\_gdm as p left join zio.bfc\_sle\_q as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 임신 기간 정의;

\* child bth date에서 10개월 전으로;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

start\_preg\_date = intnx("month", bth\_date\_new, -**10**);

format start\_preg\_date yymmdd10.;

**run**;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 임신 기간 중 gdm 진단 시, group\_ += 1;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

by indi\_dscm\_no;

retain group\_ **1**;

if start\_preg\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0515\_m\_gdm;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_gdm nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

if group\_ >= **3**;

**run**;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

drop group\_;

**run**;

**data** zio.t40\_0515\_m\_gdm;

set zio.t40\_0515\_m\_gdm;

rename mdcare\_strt\_dt = GDM\_mdcare\_strt\_dt;

**run**;

\* 4. PE;

**data** zio.t40\_0515\_m\_pe;

set zio.t40\_0515\_m\_comorbidity;

if pe = **1**;

**run**;

**data** zio.t40\_0515\_m\_pe;

set zio.t40\_0515\_m\_pe;

keep indi\_dscm\_no mdcare\_strt\_dt pe;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pe;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pe nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_pe;

set zio.t40\_0515\_m\_pe;

rename mdcare\_strt\_dt = PE\_mdcare\_strt\_dt;

**run**;

\* 5. CE;

**data** zio.t40\_0515\_m\_ce;

set zio.t40\_0515\_m\_comorbidity;

if ce = **1**;

**run**;

**data** zio.t40\_0515\_m\_ce;

set zio.t40\_0515\_m\_ce;

keep indi\_dscm\_no mdcare\_strt\_dt ce;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_ce;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_ce nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_ce;

set zio.t40\_0515\_m\_ce;

rename mdcare\_strt\_dt = CE\_mdcare\_strt\_dt;

**run**;

\* 6. PA;

**data** zio.t40\_0515\_m\_pa;

set zio.t40\_0515\_m\_comorbidity;

if pa = **1**;

**run**;

**data** zio.t40\_0515\_m\_pa;

set zio.t40\_0515\_m\_pa;

keep indi\_dscm\_no mdcare\_strt\_dt pa;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pa;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pa nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_pa;

set zio.t40\_0515\_m\_pa;

rename mdcare\_strt\_dt = PA\_mdcare\_strt\_dt;

**run**;

\* 7. PP;

**data** zio.t40\_0515\_m\_pp;

set zio.t40\_0515\_m\_comorbidity;

if pp = **1**;

**run**;

**data** zio.t40\_0515\_m\_pp;

set zio.t40\_0515\_m\_pp;

keep indi\_dscm\_no mdcare\_strt\_dt pp;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pp;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pp nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_pp;

set zio.t40\_0515\_m\_pp;

rename mdcare\_strt\_dt = PP\_mdcare\_strt\_dt;

**run**;

\* 8. NP;

**data** zio.t30\_0515\_m\_np;

set zio.t30\_0515\_m\_parity;

if np = **1**;

**run**;

**data** zio.t30\_0515\_m\_np;

set zio.t30\_0515\_m\_np;

keep indi\_dscm\_no mdcare\_strt\_dt np;

**run**;

**proc** **sort** data=zio.t30\_0515\_m\_np;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t30\_0515\_m\_np nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0515\_m\_np;

set zio.t30\_0515\_m\_np;

rename mdcare\_strt\_dt = NP\_mdcare\_strt\_dt;

**run**;

\* 9. PB;

**data** zio.t40\_0515\_m\_pb;

set zio.t40\_0515\_m\_comorbidity;

if pb = **1**;

**run**;

**data** zio.t40\_0515\_m\_pb;

set zio.t40\_0515\_m\_pb;

keep indi\_dscm\_no mdcare\_strt\_dt pb;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pb;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0515\_m\_pb nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0515\_m\_pb;

set zio.t40\_0515\_m\_pb;

rename mdcare\_strt\_dt = PB\_mdcare\_strt\_dt;

**run**;

\* 10. LGA; \* 이건 child table에서 정의했으므로, id가 child 임에 유의;

**data** zio.t40\_0815\_c\_lga;

set zio.t40\_0815\_c\_lgapb;

if lga = **1**;

**run**;

**data** zio.t40\_0815\_c\_lga;

set zio.t40\_0815\_c\_lga;

keep indi\_dscm\_no mdcare\_strt\_dt lga;

**run**;

**proc** **sort** data=zio.t40\_0815\_c\_lga;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0815\_c\_lga nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0815\_c\_lga;

set zio.t40\_0815\_c\_lga;

rename mdcare\_strt\_dt = LGA\_mdcare\_strt\_dt;

**run**; \* 10.13 여기서부터 다시;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_gdm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0515\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t30\_0515\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_sle\_q as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.bfc\_sle\_q as p left join zio.t40\_0815\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if dm = **.** then dm = **0**;

if htn = **.** then htn = **0**;

if gdm = **.** then gdm = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

**run**;

\* 출산 이전 발생한 질병으로 new 변수 생성;

\* dm, htn만;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if dm\_mdcare\_strt\_dt ^= **.** then dm\_year = substr(dm\_mdcare\_strt\_dt, **1**, **4**); else dm\_year = **.**;

if dm = **1** and dm\_year < byear then dm\_before\_preg = **1**;

else dm\_before\_preg = **0**;

**run**;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if htn\_mdcare\_strt\_dt ^= **.** then htn\_year = substr(htn\_mdcare\_strt\_dt, **1**, **4**); else htn\_year = **.**;

if htn = **1** and htn\_year < byear then htn\_before\_preg = **1**;

else htn\_before\_preg = **0**;

**run**;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

drop gdm\_before\_preg gdm\_year;

**run**;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if bth\_wght < **2.5** then low\_bth\_wght = **1**;

else low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* prem = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 prem\_real = 1로 정의;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.bfc\_sle\_q;

set zio.bfc\_sle\_q;

if prem = **1** and bth\_date\_new <= exp\_date\_new - **21** then prem\_real = **1**; else prem\_real = **0**;

**run**;

\* split sle and non-sle group;

**data** zio.bfc\_sle\_q\_slepos;

set zio.bfc\_sle\_q;

if sle\_before\_preg = **1**;

**run**;

**data** zio.bfc\_sle\_q\_sleneg;

set zio.bfc\_sle\_q;

if sle\_before\_preg = **0**;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_slepos n nmiss mean median min max std;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_sleneg n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table dm\_before\_preg;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table dm\_before\_preg;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table htn\_before\_preg;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table htn\_before\_preg;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table gdm;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table gdm;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table pe;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table pe;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table ce;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table ce;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table pa;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table pa;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table pp;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table pp;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table np;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table np;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table low\_bth\_wght;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table low\_bth\_wght;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table prem\_real;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table prem\_real;

**proc** **freq** data=zio.bfc\_sle\_q\_slepos;

table lga;

**proc** **freq** data=zio.bfc\_sle\_q\_sleneg;

table lga;

\* t-test and chi-square test;

\* t-test for continuous variables;

**proc** **ttest** data=zio.bfc\_sle\_q;

class sle\_before\_preg;

var mother\_age;

**run**;

**proc** **ttest** data=zio.bfc\_sle\_q;

class sle\_before\_preg;

var bth\_wght;

**run**;

\* chi square test for categorical variables;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* htn\_before\_preg / chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* dm\_before\_preg/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* gdm/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* pe/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* ce/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* pa/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* pp/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* prem/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* prem\_real/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* sex\_type/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* np/ chisq expected;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q;

table sle\_before\_preg \* lga/ chisq expected;

**run**;

\* child comorbidity define;

\* t40에서 뽑기;

**data** zio.t40\_0815\_c\_comorbidity;

set zio.t40\_0815\_c;

**run**;

**data** zio.t40\_0815\_c\_comorbidity;

set zio.t40\_0815\_c\_comorbidity;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q00", "Q01", "Q02", "Q03", "Q04", "Q05", "Q06", "Q07") then Q00\_07 = **1**; else Q00\_07 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q10", "Q11", "Q12", "Q13", "Q14", "Q15", "Q16", "Q17", "Q18") then Q10\_18 = **1**; else Q10\_18 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q20", "Q21", "Q22", "Q23", "Q24", "Q25", "Q26", "Q27", "Q28") then Q20\_28 = **1**; else Q20\_28 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q30", "Q31", "Q32", "Q33", "Q34") then Q30\_34 = **1**; else Q30\_34 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q35", "Q36", "Q37") then Q35\_37 = **1**; else Q35\_37 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q38", "Q39", "Q40", "Q41", "Q42", "Q43", "Q44", "Q45") then Q38\_45 = **1**; else Q38\_45 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q50", "Q51", "Q52", "Q53", "Q54", "Q55", "Q56") then Q50\_56 = **1**; else Q50\_56 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q60", "Q61", "Q62", "Q63", "Q64") then Q60\_64 = **1**; else Q60\_64 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q65", "Q66", "Q67", "Q68", "Q69", "Q70", "Q71", "Q72", "Q73", "Q74", "Q75", "Q76", "Q77", "Q78", "Q79") then Q65\_79 = **1**; else Q65\_79 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q80", "Q81", "Q82", "Q83", "Q84", "Q85", "Q86", "Q87", "Q88", "Q89") then Q80\_89 = **1**; else Q80\_89 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("F82", "R26", "R27") then MDD = **1**; else MDD = **0**; \* Motor developmental delay ;

if substr(mcex\_sick\_sym, **1**, **3**) in ("F70", "F71", "F72", "F73", "F78", "F79", "F83")

OR substr(mcex\_sick\_sym, **1**, **4**) in ("F800", "F801", "F802", "F808", "F809", "F810", "F811", "F812", "F813", "F818", "F819", "R480", "R488") then CDD = **1**; else CDD = **0**; \* Cognitive developmental delay ;

if substr(mcex\_sick\_sym, **1**, **3**) in ("F88", "F89")

OR substr(mcex\_sick\_sym, **1**, **4**) in ("F840", "F841", "F844", "F845", "F848", "F849", "F900", "F901", "F902", "F908", "F909") then ADHD = **1**; else ADHD = **0**; \* Autisum spectrum disorders/ADHD ;

if substr(mcex\_sick\_sym, **1**, **3**) in ("R25") OR substr(mcex\_sick\_sym, **1**, **4**) in ("F950", "F951", "F952", "F958", "F959", "F984", "F950", "F951", "F952", "F958", "F959", "F984", "F985", "F985")

then TICS = **1**; else TICS = **0**; \* Tics/stereotypic behavior ;

if substr(mcex\_sick\_sym, **1**, **3**) in ("G40", "G41", "R56") OR substr(mcex\_sick\_sym, **1**, **4**) in ("G253") then EFS = **1**; else EFS = **0**; \* Epileptic/febrile seizures ;

**run**; \* 여기까지는 상병진단기록이 id별 다수이므로, 절대 이 상태에서 drop dup 하면 안됨!;

\* count unique child who has Q00\_07 for example, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c\_comorbidity

where Q00\_07 = **1**;

**quit**; \* 13,795;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c\_comorbidity

where Q10\_18 = **1**;

**quit**; \* 69,851;

\* count unique child who has MDD for example, 2008-2015;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0815\_c\_comorbidity

where MDD = **1**;

**quit**; \* 42,392;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 bfc\_sle\_q 에 left join;

\* q00\_07;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q00\_07;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q00\_07;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07

from zio.bfc\_sle\_q as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q00\_07;

**run**;

\* q10\_18;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q10\_18;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q10\_18;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q10\_18;

**run**;

\* q20\_28;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q20\_28;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q20\_28;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q20\_28;

**run**;

\* q30\_34;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q30\_34;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q30\_34;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q30\_34;

**run**;

\* q35\_37;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q35\_37;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q35\_37;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q35\_37;

**run**;

\* q38\_45;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q38\_45;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q38\_45;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q38\_45;

**run**;

\* q50\_56;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q50\_56;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q50\_56;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q50\_56;

**run**;

\* q60\_64;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q60\_64;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q60\_64;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q60\_64;

**run**;

\* q65\_79;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q65\_79;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q65\_79;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q65\_79;

**run**;

\* q80\_89;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no q80\_89;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending q80\_89;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table q80\_89;

**run**;

\* define any congenital malformation;

**data** zio.bfc\_sle\_q\_cm;

set zio.bfc\_sle\_q\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

\* MDD;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no MDD;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending MDD;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.MDD

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table MDD;

**run**;

\* CDD;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no CDD;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending CDD;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.CDD

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table CDD;

**run**;

\* ADHD;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no ADHD;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending ADHD;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.ADHD

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table ADHD;

**run**;

\* TICS;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no TICS;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending TICS;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.TICS

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table TICS;

**run**;

\* EFS;

**data** tmp;

set zio.t40\_0815\_c\_comorbidity;

keep indi\_dscm\_no EFS;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending EFS;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.bfc\_sle\_q\_cm as

select p.\*, q.indi\_dscm\_no, q.EFS

from zio.bfc\_sle\_q\_cm as p left join tmp as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table EFS;

**run**;

\* define any Neurodevelopmental outcome;

**data** zio.bfc\_sle\_q\_cm;

set zio.bfc\_sle\_q\_cm;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.bfc\_sle\_q\_cm;

table any\_neruo;

**run**; \* 375,339 (13.75%);

**data** zio.bfc\_sle\_q\_cm;

set zio.bfc\_sle\_q\_cm;

if mdd = **.** then mdd = **0**;

if cdd = **.** then cdd = **0**;

if adhd = **.** then adhd = **0**;

if tics = **.** then tics = **0**;

if efs = **.** then efs = **0**;

**run**;

\* split sle and non-sle group;

**data** zio.bfc\_sle\_q\_cm\_slepos;

set zio.bfc\_sle\_q\_cm;

if sle\_before\_preg = **1**;

**run**;

**data** zio.bfc\_sle\_q\_cm\_sleneg;

set zio.bfc\_sle\_q\_cm;

if sle\_before\_preg = **0**;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_cm\_slepos n nmiss mean median min max std;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_cm\_sleneg n nmiss mean median min max std;

**run**;

**proc** **means** data=zio.bfc\_sle\_q\_cm\_slepos n nmiss;

**run**;

\* any congenital malformation;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table any\_cm;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table any\_cm;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model any\_cm (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model any\_cm (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q00\_07;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q00\_07;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q00\_07;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q00\_07 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q00\_07 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q10\_18;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q10\_18;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q10\_18;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q10\_18 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q10\_18 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q20\_28;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q20\_28;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q20\_28;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q20\_28 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q20\_28 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q30\_34;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q30\_34;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q30\_34;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q30\_34 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q30\_34 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q35\_37;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q35\_37;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q35\_37;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q35\_37 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q35\_37 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q38\_45;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q38\_45;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q38\_45;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q38\_45 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q38\_45 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q50\_56;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q50\_56;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q50\_56;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q50\_56 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q50\_56 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q60\_64;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q60\_64;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q60\_64;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q60\_64 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q60\_64 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q65\_79;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q65\_79;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q65\_79;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q65\_79 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q65\_79 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q80\_89;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table q80\_89;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table q80\_89;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model q80\_89 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q80\_89 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* any neurodevelopmental disorder;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table any\_neruo;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table any\_neruo;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model any\_neruo (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model any\_neruo (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* MDD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table MDD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table MDD;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model MDD (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model MDD (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* CDD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table CDD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table CDD;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model CDD (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model CDD (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* ADHD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table ADHD;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table ADHD;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model ADHD (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model ADHD (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* TICS;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table TICS;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table TICS;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model TICS (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model TICS (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* EFS;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_slepos;

table EFS;

**proc** **freq** data=zio.bfc\_sle\_q\_cm\_sleneg;

table EFS;

\* logistic unadjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sle\_before\_preg(ref='0');

model EFS (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.bfc\_sle\_q\_cm;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model EFS (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* change byear to numeric for psmatching;

**data** zio.bfc\_sle\_q\_cm;

set zio.bfc\_sle\_q\_cm;

num\_byear = input(byear, comma9.);

**run**;

\* psmatching;

/\*ODS GRAPHICS ON; \*/

**proc** **psmatch** data = zio.bfc\_sle\_q\_cm ;

class sle\_before\_preg htn\_before\_preg dm\_before\_preg;

psmodel sle\_before\_preg(Treated = '1') = mother\_age htn\_before\_preg dm\_before\_preg num\_byear;

match method = greedy(k=**5**) stat=lps caliper=**.**;

assess lps var=(mother\_age htn\_before\_preg dm\_before\_preg num\_byear)/ weight = none;

output out(obs=match)= ziodata.bfc\_sle\_q\_cm\_psmatched lps=\_Lps matchid = \_MatchID;

**run**;

/\* draw histogram of propensity score \*/

**proc** **univariate** data=ziodata.bfc\_sle\_q\_cm\_psmatched noprint;

class sle\_before\_preg;

histogram \_PS\_ / normal (color=red) nrows=**2**;

**run**;

\* logistic model in psmatched dataset;

\* any congenital malformation;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model any\_cm (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model any\_cm (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q00\_07;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q00\_07 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q00\_07 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q10\_18;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q10\_18 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q10\_18 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q20\_28;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q20\_28 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q20\_28 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q30\_34;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q30\_34 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q30\_34 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q35\_37;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q35\_37 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q35\_37 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q38\_45;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q38\_45 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q38\_45 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q50\_56;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q50\_56 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q50\_56 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q60\_64;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q60\_64 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q60\_64 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q65\_79;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q65\_79 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q65\_79 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

\* q80\_89;

\* logistic unadjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sle\_before\_preg(ref='0');

model q80\_89 (event='1') =

sle\_before\_preg / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=ziodata.bfc\_sle\_q\_cm\_psmatched;

class sex\_type sle\_before\_preg(ref='0') htn\_before\_preg(ref='0') dm\_before\_preg(ref='0');

model q80\_89 (event='1') =

sle\_before\_preg

mother\_age

htn\_before\_preg

dm\_before\_preg

sex\_type / link=logit technique=fisher;

**run**;

# Actual study - define multiple pregnancy

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* t20에서 주상병 or 부상병 1이 다태아인 엄마 뽑기;

**data** zio.t20\_0817\_m\_mp;

set zio.t20\_0817\_m;

if sick\_sym1 in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450")

or

sick\_sym2 in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450");

**run**;

\* count unique mother in t20\_multiple pregnancy, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t20\_0817\_m\_mp;

**quit**; \* 71,999;

\* t40에서 주상병이 다태아인 엄마 뽑기;

**data** zio.t40\_0817\_m\_mp;

set zio.t40\_0817\_m;

if mcex\_sick\_sym in ("O84", "O840", "O841", "O842", "O848", "O849", "O30", "O300", "O301", "O302", "O308", "O309", "O325",

"O01701", "O01702", "O01700", "H6118", "H6119", "H6132", "H6133", "H6127",

"H5953", "H5965", "H5974", "H5987", "H6137", "H6145", "H59530", "H59650", "H59740", "H59870", "H61370", "H61450") ;

**run**;

\* count unique mother in t40\_multiple pregnancy, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_mp;

**quit**; \* 60,968;

\* multiple pregnancy list 만들기;

**data** tmp;

set zio.t20\_0817\_m\_mp;

keep indi\_dscm\_no;

**run**;

**data** tmp2;

set zio.t40\_0817\_m\_mp;

keep indi\_dscm\_no;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sort** data=tmp2 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t2040\_mp\_list;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.t2040\_mp\_list nodupkey;

by indi\_dscm\_no;

**run**;

\* count unique mother in t20+t40\_multiple pregnancy, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t2040\_mp\_list;

**quit**; \* 73,968;

\* target list에서 multiple pregnancy인 mother만 count;

\* inner join with mother-child list;

**proc** **sql**;

create table tmp as

select p.\*, q.\*

from user.target\_req202202517\_mother\_child as p inner join zio.t2040\_mp\_list as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp;

**quit**; \* 73,968;

\* exclude multiple pregnancy from mother-child list;

**proc** **sql**;

create table zio.mother\_child\_excludeMP as

select \*

from user.target\_req202202517\_mother\_child

where mother\_id not in (select indi\_dscm\_no from zio.t2040\_mp\_list);

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.mother\_child\_excludeMP;

**quit**; \* 2,606,124;

# 1-1. Actual study - define study group

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* 신장이식/ 말기 신부전/ 만성 콩팥병 산모;

\* 연구기간: 2008.01.01 ~ 2017.12.31;

\* count unique mother in mother-child list;

**proc** **sql**;

select count(unique mother\_id)

from user.target\_req202202517\_mother\_child;

**quit**; \* 2,680,092;

\* count unique child in mother-child list;

**proc** **sql**;

select count(unique child\_id)

from user.target\_req202202517\_mother\_child;

**quit**; \* 3,794,031;

\* (24.01.08 추가) count unique mother in mother\_child\_excludeMP list;

**proc** **sql**;

select count(unique mother\_id)

from zio.mother\_child\_excludeMP;

**quit**; \* 2,606,124;

\* (24.01.08 추가) count unique child in mother\_child\_excludeMP list;

**proc** **sql**;

select count(unique child\_id)

from zio.mother\_child\_excludeMP;

**quit**; \* 3,638,995;

/\* 08~17로 다시 합치기 \*/

**data** zio.bfc\_0817\_c;

set zio.bfc\_0815\_c user.bfc\_2016\_c user.bfc\_2017\_c;

**run**;

**data** zio.bfc\_0817\_m;

set zio.bfc\_0815\_m user.bfc\_2016\_m user.bfc\_2017\_m;

**run**;

\* count unique babies in bfc, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.bfc\_0817\_c;

**quit**; \* 3,792,906;

\* count unique mothers in bfc, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.bfc\_0817\_m;

**quit**; \* 2,672,234;

\* (24.01.08 수정) inner join with mother-child exclude mp list;

**proc** **sql**;

create table zio.bfc\_0817\_c\_m as

select p.\*, q.\*

from zio.bfc\_0817\_c as p inner join zio.mother\_child\_excludeMP as q

on p.indi\_dscm\_no = q.child\_id;

**quit**;

\* (24.01.08 재실행) mother byear 붙이기;

**proc** **sql**;

create table zio.bfc\_0817\_c\_m as

select p.\*, q.\*

from zio.bfc\_0817\_c\_m as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 이제 bfc\_0817\_c\_m에는 multiple pregnancy 산모들이 모두 제외되어 있다, 이게 target list임;

\* count unique mother id with child;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0817\_c\_m;

**quit**; \* 2,605,422;

\* count unique child id with mother;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0817\_c\_m;

**quit**; \* 3,637,903;

\* t40 concat - mother;

/\*data zio.t40\_0817\_m; \*/

/\*set zio.t40\_0815\_m\*/

/\*user.t40\_201601\_m user.t40\_201602\_m user.t40\_201603\_m user.t40\_201604\_m user.t40\_201605\_m user.t40\_201606\_m user.t40\_201607\_m user.t40\_201608\_m user.t40\_201609\_m user.t40\_201610\_m user.t40\_201611\_m user.t40\_201612\_m\*/

/\*user.t40\_201701\_m user.t40\_201702\_m user.t40\_201703\_m user.t40\_201704\_m user.t40\_201705\_m user.t40\_201706\_m user.t40\_201707\_m user.t40\_201708\_m user.t40\_201709\_m user.t40\_201710\_m user.t40\_201711\_m user.t40\_201712\_m\*/

/\*; \*/

/\*run; \* 09.20 4:14 start, 4:23 end.; \*/

\* t40 concat - mother;

**data** zio.t40\_0817\_m;

set user.t40\_200801\_m user.t40\_200802\_m user.t40\_200803\_m user.t40\_200804\_m user.t40\_200805\_m user.t40\_200806\_m user.t40\_200807\_m user.t40\_200808\_m user.t40\_200809\_m user.t40\_200810\_m user.t40\_200811\_m user.t40\_200812\_m

user.t40\_200901\_m user.t40\_200902\_m user.t40\_200903\_m user.t40\_200904\_m user.t40\_200905\_m user.t40\_200906\_m user.t40\_200907\_m user.t40\_200908\_m user.t40\_200909\_m user.t40\_200910\_m user.t40\_200911\_m user.t40\_200912\_m

user.t40\_201001\_m user.t40\_201002\_m user.t40\_201003\_m user.t40\_201004\_m user.t40\_201005\_m user.t40\_201006\_m user.t40\_201007\_m user.t40\_201008\_m user.t40\_201009\_m user.t40\_201010\_m user.t40\_201011\_m user.t40\_201012\_m

user.t40\_201101\_m user.t40\_201102\_m user.t40\_201103\_m user.t40\_201104\_m user.t40\_201105\_m user.t40\_201106\_m user.t40\_201107\_m user.t40\_201108\_m user.t40\_201109\_m user.t40\_201110\_m user.t40\_201111\_m user.t40\_201112\_m

user.t40\_201201\_m user.t40\_201202\_m user.t40\_201203\_m user.t40\_201204\_m user.t40\_201205\_m user.t40\_201206\_m user.t40\_201207\_m user.t40\_201208\_m user.t40\_201209\_m user.t40\_201210\_m user.t40\_201211\_m user.t40\_201212\_m

user.t40\_201301\_m user.t40\_201302\_m user.t40\_201303\_m user.t40\_201304\_m user.t40\_201305\_m user.t40\_201306\_m user.t40\_201307\_m user.t40\_201308\_m user.t40\_201309\_m user.t40\_201310\_m user.t40\_201311\_m user.t40\_201312\_m

user.t40\_201401\_m user.t40\_201402\_m user.t40\_201403\_m user.t40\_201404\_m user.t40\_201405\_m user.t40\_201406\_m user.t40\_201407\_m user.t40\_201408\_m user.t40\_201409\_m user.t40\_201410\_m user.t40\_201411\_m user.t40\_201412\_m

user.t40\_201501\_m user.t40\_201502\_m user.t40\_201503\_m user.t40\_201504\_m user.t40\_201505\_m user.t40\_201506\_m user.t40\_201507\_m user.t40\_201508\_m user.t40\_201509\_m user.t40\_201510\_m user.t40\_201511\_m user.t40\_201512\_m

user.t40\_201601\_m user.t40\_201602\_m user.t40\_201603\_m user.t40\_201604\_m user.t40\_201605\_m user.t40\_201606\_m user.t40\_201607\_m user.t40\_201608\_m user.t40\_201609\_m user.t40\_201610\_m user.t40\_201611\_m user.t40\_201612\_m

user.t40\_201701\_m user.t40\_201702\_m user.t40\_201703\_m user.t40\_201704\_m user.t40\_201705\_m user.t40\_201706\_m user.t40\_201707\_m user.t40\_201708\_m user.t40\_201709\_m user.t40\_201710\_m user.t40\_201711\_m user.t40\_201712\_m (encoding=asciiany)

;

**run**; \* (24.07.26) encoding 바꿔서 다시 돌림;

/\*\* t40 concat - child; \*/

/\*data zio.t40\_0817\_c; \*/

/\*set zio.t40\_0815\_c\*/

/\*user.t40\_201601\_c user.t40\_201602\_c user.t40\_201603\_c user.t40\_201604\_c user.t40\_201605\_c user.t40\_201606\_c user.t40\_201607\_c user.t40\_201608\_c user.t40\_201609\_c user.t40\_201610\_c user.t40\_201611\_c user.t40\_201612\_c\*/

/\*user.t40\_201701\_c user.t40\_201702\_c user.t40\_201703\_c user.t40\_201704\_c user.t40\_201705\_c user.t40\_201706\_c user.t40\_201707\_c user.t40\_201708\_c user.t40\_201709\_c user.t40\_201710\_c user.t40\_201711\_c user.t40\_201712\_c\*/

/\*; \*/

/\*run; \* 09.20 4:24 start, 4:41 end.; \*/

\* t40 concat - child;

**data** zio.t40\_0817\_c;

set user.t40\_200801\_c user.t40\_200802\_c user.t40\_200803\_c user.t40\_200804\_c user.t40\_200805\_c user.t40\_200806\_c user.t40\_200807\_c user.t40\_200808\_c user.t40\_200809\_c user.t40\_200810\_c user.t40\_200811\_c user.t40\_200812\_c

user.t40\_200901\_c user.t40\_200902\_c user.t40\_200903\_c user.t40\_200904\_c user.t40\_200905\_c user.t40\_200906\_c user.t40\_200907\_c user.t40\_200908\_c user.t40\_200909\_c user.t40\_200910\_c user.t40\_200911\_c user.t40\_200912\_c

user.t40\_201001\_c user.t40\_201002\_c user.t40\_201003\_c user.t40\_201004\_c user.t40\_201005\_c user.t40\_201006\_c user.t40\_201007\_c user.t40\_201008\_c user.t40\_201009\_c user.t40\_201010\_c user.t40\_201011\_c user.t40\_201012\_c

user.t40\_201101\_c user.t40\_201102\_c user.t40\_201103\_c user.t40\_201104\_c user.t40\_201105\_c user.t40\_201106\_c user.t40\_201107\_c user.t40\_201108\_c user.t40\_201109\_c user.t40\_201110\_c user.t40\_201111\_c user.t40\_201112\_c

user.t40\_201201\_c user.t40\_201202\_c user.t40\_201203\_c user.t40\_201204\_c user.t40\_201205\_c user.t40\_201206\_c user.t40\_201207\_c user.t40\_201208\_c user.t40\_201209\_c user.t40\_201210\_c user.t40\_201211\_c user.t40\_201212\_c

user.t40\_201301\_c user.t40\_201302\_c user.t40\_201303\_c user.t40\_201304\_c user.t40\_201305\_c user.t40\_201306\_c user.t40\_201307\_c user.t40\_201308\_c user.t40\_201309\_c user.t40\_201310\_c user.t40\_201311\_c user.t40\_201312\_c

user.t40\_201401\_c user.t40\_201402\_c user.t40\_201403\_c user.t40\_201404\_c user.t40\_201405\_c user.t40\_201406\_c user.t40\_201407\_c user.t40\_201408\_c user.t40\_201409\_c user.t40\_201410\_c user.t40\_201411\_c user.t40\_201412\_c

user.t40\_201501\_c user.t40\_201502\_c user.t40\_201503\_c user.t40\_201504\_c user.t40\_201505\_c user.t40\_201506\_c user.t40\_201507\_c user.t40\_201508\_c user.t40\_201509\_c user.t40\_201510\_c user.t40\_201511\_c user.t40\_201512\_c

user.t40\_201601\_c user.t40\_201602\_c user.t40\_201603\_c user.t40\_201604\_c user.t40\_201605\_c user.t40\_201606\_c user.t40\_201607\_c user.t40\_201608\_c user.t40\_201609\_c user.t40\_201610\_c user.t40\_201611\_c user.t40\_201612\_c

user.t40\_201701\_c user.t40\_201702\_c user.t40\_201703\_c user.t40\_201704\_c user.t40\_201705\_c user.t40\_201706\_c user.t40\_201707\_c user.t40\_201708\_c user.t40\_201709\_c user.t40\_201710\_c user.t40\_201711\_c user.t40\_201712\_c (encoding=asciiany);

**run**; \* ;

\* count unique mother in t40, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m;

**quit**; \* 2,670,220;

\* count unique child in t40, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_c;

**quit**; \* 3,152,979;

**data** zio.g1eq\_0817\_m;

set zio.g1eq\_0815\_m user.g1eq\_2016\_m user.g1eq\_2017\_m;

**run**;

\* count unique mother in g1eq, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m;

**quit**; \* 1,656,271;

\* t20 concat - mother;

\* t40에 id, mdcare\_strt\_dt를 붙이기 위함임;

**data** zio.t20\_0817\_m;

set zio.t20\_0815\_m

user.t20\_201601\_m user.t20\_201602\_m user.t20\_201603\_m user.t20\_201604\_m user.t20\_201605\_m user.t20\_201606\_m user.t20\_201607\_m user.t20\_201608\_m user.t20\_201609\_m user.t20\_201610\_m user.t20\_201611\_m user.t20\_201612\_m

user.t20\_201701\_m user.t20\_201702\_m user.t20\_201703\_m user.t20\_201704\_m user.t20\_201705\_m user.t20\_201706\_m user.t20\_201707\_m user.t20\_201708\_m user.t20\_201709\_m user.t20\_201710\_m user.t20\_201711\_m user.t20\_201712\_m

;

**run**; \* 09.22 2:05 start; \* 2:12 end;

\* t20 concat - child;

**data** zio.t20\_0817\_c;

set zio.t20\_0815\_c

user.t20\_201601\_c user.t20\_201602\_c user.t20\_201603\_c user.t20\_201604\_c user.t20\_201605\_c user.t20\_201606\_c user.t20\_201607\_c user.t20\_201608\_c user.t20\_201609\_c user.t20\_201610\_c user.t20\_201611\_c user.t20\_201612\_c

user.t20\_201701\_c user.t20\_201702\_c user.t20\_201703\_c user.t20\_201704\_c user.t20\_201705\_c user.t20\_201706\_c user.t20\_201707\_c user.t20\_201708\_c user.t20\_201709\_c user.t20\_201710\_c user.t20\_201711\_c user.t20\_201712\_c

;

**run**; \* 2:12 start; \* end;

\* t30 concat - mother;

**data** zio.t30\_0817\_m;

set user.t30\_200801\_m user.t30\_200802\_m user.t30\_200803\_m user.t30\_200804\_m user.t30\_200805\_m user.t30\_200806\_m user.t30\_200807\_m user.t30\_200808\_m user.t30\_200809\_m user.t30\_200810\_m user.t30\_200811\_m user.t30\_200812\_m

user.t30\_200901\_m user.t30\_200902\_m user.t30\_200903\_m user.t30\_200904\_m user.t30\_200905\_m user.t30\_200906\_m user.t30\_200907\_m user.t30\_200908\_m user.t30\_200909\_m user.t30\_200910\_m user.t30\_200911\_m user.t30\_200912\_m

user.t30\_201001\_m user.t30\_201002\_m user.t30\_201003\_m user.t30\_201004\_m user.t30\_201005\_m user.t30\_201006\_m user.t30\_201007\_m user.t30\_201008\_m user.t30\_201009\_m user.t30\_201010\_m user.t30\_201011\_m user.t30\_201012\_m

user.t30\_201101\_m user.t30\_201102\_m user.t30\_201103\_m user.t30\_201104\_m user.t30\_201105\_m user.t30\_201106\_m user.t30\_201107\_m user.t30\_201108\_m user.t30\_201109\_m user.t30\_201110\_m user.t30\_201111\_m user.t30\_201112\_m

user.t30\_201201\_m user.t30\_201202\_m user.t30\_201203\_m user.t30\_201204\_m user.t30\_201205\_m user.t30\_201206\_m user.t30\_201207\_m user.t30\_201208\_m user.t30\_201209\_m user.t30\_201210\_m user.t30\_201211\_m user.t30\_201212\_m

user.t30\_201301\_m user.t30\_201302\_m user.t30\_201303\_m user.t30\_201304\_m user.t30\_201305\_m user.t30\_201306\_m user.t30\_201307\_m user.t30\_201308\_m user.t30\_201309\_m user.t30\_201310\_m user.t30\_201311\_m user.t30\_201312\_m

user.t30\_201401\_m user.t30\_201402\_m user.t30\_201403\_m user.t30\_201404\_m user.t30\_201405\_m user.t30\_201406\_m user.t30\_201407\_m user.t30\_201408\_m user.t30\_201409\_m user.t30\_201410\_m user.t30\_201411\_m user.t30\_201412\_m

user.t30\_201501\_m user.t30\_201502\_m user.t30\_201503\_m user.t30\_201504\_m user.t30\_201505\_m user.t30\_201506\_m user.t30\_201507\_m user.t30\_201508\_m user.t30\_201509\_m user.t30\_201510\_m user.t30\_201511\_m user.t30\_201512\_m

user.t30\_201601\_m user.t30\_201602\_m user.t30\_201603\_m user.t30\_201604\_m user.t30\_201605\_m user.t30\_201606\_m user.t30\_201607\_m user.t30\_201608\_m user.t30\_201609\_m user.t30\_201610\_m user.t30\_201611\_m user.t30\_201612\_m

user.t30\_201701\_m user.t30\_201702\_m user.t30\_201703\_m user.t30\_201704\_m user.t30\_201705\_m user.t30\_201706\_m user.t30\_201707\_m user.t30\_201708\_m user.t30\_201709\_m user.t30\_201710\_m user.t30\_201711\_m user.t30\_201712\_m

;

**run**; \* 09.20 5:20 start; \* 5:59 end;

\* t30 concat - child;

**data** zio.t30\_0817\_c;

set user.t30\_200801\_c user.t30\_200802\_c user.t30\_200803\_c user.t30\_200804\_c user.t30\_200805\_c user.t30\_200806\_c user.t30\_200807\_c user.t30\_200808\_c user.t30\_200809\_c user.t30\_200810\_c user.t30\_200811\_c user.t30\_200812\_c

user.t30\_200901\_c user.t30\_200902\_c user.t30\_200903\_c user.t30\_200904\_c user.t30\_200905\_c user.t30\_200906\_c user.t30\_200907\_c user.t30\_200908\_c user.t30\_200909\_c user.t30\_200910\_c user.t30\_200911\_c user.t30\_200912\_c

user.t30\_201001\_c user.t30\_201002\_c user.t30\_201003\_c user.t30\_201004\_c user.t30\_201005\_c user.t30\_201006\_c user.t30\_201007\_c user.t30\_201008\_c user.t30\_201009\_c user.t30\_201010\_c user.t30\_201011\_c user.t30\_201012\_c

user.t30\_201101\_c user.t30\_201102\_c user.t30\_201103\_c user.t30\_201104\_c user.t30\_201105\_c user.t30\_201106\_c user.t30\_201107\_c user.t30\_201108\_c user.t30\_201109\_c user.t30\_201110\_c user.t30\_201111\_c user.t30\_201112\_c

user.t30\_201201\_c user.t30\_201202\_c user.t30\_201203\_c user.t30\_201204\_c user.t30\_201205\_c user.t30\_201206\_c user.t30\_201207\_c user.t30\_201208\_c user.t30\_201209\_c user.t30\_201210\_c user.t30\_201211\_c user.t30\_201212\_c

user.t30\_201301\_c user.t30\_201302\_c user.t30\_201303\_c user.t30\_201304\_c user.t30\_201305\_c user.t30\_201306\_c user.t30\_201307\_c user.t30\_201308\_c user.t30\_201309\_c user.t30\_201310\_c user.t30\_201311\_c user.t30\_201312\_c

user.t30\_201401\_c user.t30\_201402\_c user.t30\_201403\_c user.t30\_201404\_c user.t30\_201405\_c user.t30\_201406\_c user.t30\_201407\_c user.t30\_201408\_c user.t30\_201409\_c user.t30\_201410\_c user.t30\_201411\_c user.t30\_201412\_c

user.t30\_201501\_c user.t30\_201502\_c user.t30\_201503\_c user.t30\_201504\_c user.t30\_201505\_c user.t30\_201506\_c user.t30\_201507\_c user.t30\_201508\_c user.t30\_201509\_c user.t30\_201510\_c user.t30\_201511\_c user.t30\_201512\_c

user.t30\_201601\_c user.t30\_201602\_c user.t30\_201603\_c user.t30\_201604\_c user.t30\_201605\_c user.t30\_201606\_c user.t30\_201607\_c user.t30\_201608\_c user.t30\_201609\_c user.t30\_201610\_c user.t30\_201611\_c user.t30\_201612\_c

user.t30\_201701\_c user.t30\_201702\_c user.t30\_201703\_c user.t30\_201704\_c user.t30\_201705\_c user.t30\_201706\_c user.t30\_201707\_c user.t30\_201708\_c user.t30\_201709\_c user.t30\_201710\_c user.t30\_201711\_c user.t30\_201712\_c

;

**run**; \* 24.02.19 3:52 start; \* 4:33 end;

\* t60 concat - mother;

**data** zio.t60\_0817\_m;

set user.t60\_200801\_m user.t60\_200802\_m user.t60\_200803\_m user.t60\_200804\_m user.t60\_200805\_m user.t60\_200806\_m user.t60\_200807\_m user.t60\_200808\_m user.t60\_200809\_m user.t60\_200810\_m user.t60\_200811\_m user.t60\_200812\_m

user.t60\_200901\_m user.t60\_200902\_m user.t60\_200903\_m user.t60\_200904\_m user.t60\_200905\_m user.t60\_200906\_m user.t60\_200907\_m user.t60\_200908\_m user.t60\_200909\_m user.t60\_200910\_m user.t60\_200911\_m user.t60\_200912\_m

user.t60\_201001\_m user.t60\_201002\_m user.t60\_201003\_m user.t60\_201004\_m user.t60\_201005\_m user.t60\_201006\_m user.t60\_201007\_m user.t60\_201008\_m user.t60\_201009\_m user.t60\_201010\_m user.t60\_201011\_m user.t60\_201012\_m

user.t60\_201101\_m user.t60\_201102\_m user.t60\_201103\_m user.t60\_201104\_m user.t60\_201105\_m user.t60\_201106\_m user.t60\_201107\_m user.t60\_201108\_m user.t60\_201109\_m user.t60\_201110\_m user.t60\_201111\_m user.t60\_201112\_m

user.t60\_201201\_m user.t60\_201202\_m user.t60\_201203\_m user.t60\_201204\_m user.t60\_201205\_m user.t60\_201206\_m user.t60\_201207\_m user.t60\_201208\_m user.t60\_201209\_m user.t60\_201210\_m user.t60\_201211\_m user.t60\_201212\_m

user.t60\_201301\_m user.t60\_201302\_m user.t60\_201303\_m user.t60\_201304\_m user.t60\_201305\_m user.t60\_201306\_m user.t60\_201307\_m user.t60\_201308\_m user.t60\_201309\_m user.t60\_201310\_m user.t60\_201311\_m user.t60\_201312\_m

user.t60\_201401\_m user.t60\_201402\_m user.t60\_201403\_m user.t60\_201404\_m user.t60\_201405\_m user.t60\_201406\_m user.t60\_201407\_m user.t60\_201408\_m user.t60\_201409\_m user.t60\_201410\_m user.t60\_201411\_m user.t60\_201412\_m

user.t60\_201501\_m user.t60\_201502\_m user.t60\_201503\_m user.t60\_201504\_m user.t60\_201505\_m user.t60\_201506\_m user.t60\_201507\_m user.t60\_201508\_m user.t60\_201509\_m user.t60\_201510\_m user.t60\_201511\_m user.t60\_201512\_m

user.t60\_201601\_m user.t60\_201602\_m user.t60\_201603\_m user.t60\_201604\_m user.t60\_201605\_m user.t60\_201606\_m user.t60\_201607\_m user.t60\_201608\_m user.t60\_201609\_m user.t60\_201610\_m user.t60\_201611\_m user.t60\_201612\_m

user.t60\_201701\_m user.t60\_201702\_m user.t60\_201703\_m user.t60\_201704\_m user.t60\_201705\_m user.t60\_201706\_m user.t60\_201707\_m user.t60\_201708\_m user.t60\_201709\_m user.t60\_201710\_m user.t60\_201711\_m user.t60\_201712\_m

;

**run**; \* 09.22 1:29 start; \* 1:55 done;

\* T30에T20에서 id, mdcare\_strt\_dt 가져와서 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t30\_0817\_m as p left join zio.t20\_0817\_m as q

on p.cmn\_key = q.cmn\_key;

**quit**; \* 09.22 2:35 start; \* end;

\* T60에T20에서 id, mdcare\_strt\_dt 가져와서 붙이기;

**proc** **sql**;

create table zio.t60\_0817\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t60\_0817\_m as p left join zio.t20\_0817\_m as q

on p.cmn\_key = q.cmn\_key;

**quit**; \* 09.22 4:05 start; \* 4:11 end;

\* T40에T20에서 id, mdcare\_strt\_dt 가져와서 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t40\_0817\_m as p left join zio.t20\_0817\_m as q

on p.cmn\_key = q.cmn\_key;

**quit**;

\* T40에T20에서 id, mdcare\_strt\_dt 가져와서 붙이기 - child;

**proc** **sql**;

create table zio.t40\_0817\_c as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t40\_0817\_c as p left join zio.t20\_0817\_c as q

on p.cmn\_key = q.cmn\_key;

**quit**; \* 24.07.25 다시 돌려놓고 감;

\* T30에T20에서 id, mdcare\_strt\_dt 가져와서 붙이기 - child;

**proc** **sql**;

create table zio.t30\_0817\_c as

select p.\*, q.indi\_dscm\_no, q.cmn\_key, q.mdcare\_strt\_dt

from zio.t30\_0817\_c as p left join zio.t20\_0817\_c as q

on p.cmn\_key = q.cmn\_key;

**quit**; \* 2/19 여기까지 돌려놓고 감;

\* count unique mother in t30, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m;

**quit**; \* 2,680,092;

\* count unique mother in t60, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t60\_0817\_m;

**quit**; \* 2,633,291;

\* count unique mother in t40, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m;

**quit**; \* 2,670,220; \* (24.07.26 2016-2017 빠져있던 오류 수정) 2,680,092;

\* count unique child in t40, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_c;

**quit**; \* 3,152,979; \* (24.07.26 2016-2017 빠져있던 오류 수정) 3,789,353;

**data** zio.t40\_0817\_c;

set zio.t40\_0817\_c;

year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c;

table year;

**run**;

**data** zio.t40\_0817\_c\_1617;

set zio.t40\_0817\_c;

if year = '2016' or year = '2017';

**run**; \* 정상적으로 붙은 거 확인;

**data** zio.t40\_0817\_m;

set zio.t40\_0817\_m;

year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_m;

table year;

**run**;

**data** zio.t40\_0817\_m\_1617;

set zio.t40\_0817\_m;

if year = '2016' or year = '2017';

**run**; \* 정상적으로 붙은 거 확인;

/\* 연구대상자 정의 \*/

\* 1. 신장이식 수혜자;

\* Inclusion criteria;

\* (initial protocol) 전체 연구 기간 중 Z94.0 code가 진단되었거나 V005가 1회 이상 발행된 자;

\* (23.10.18 protocol ver.1.1 수정) 분만일로부터 1년 or 2년 이내 및 2개월 전 시점에 Z94.0 code가 입력되었거나,

신이식 수술 코드가 발행되었거나, V005가 2회 이상 발행된 자;

\* 이때, 신이식 수술 코드 "R3280";

\* Exclusion criteria;

\* (23.10.18 protocol ver.1.1 추가) 신장 이식을 2회 이상 받았거나 다른 장기를 이식받은 경우;

\* (23.11 Mail feedback) 신장 이식 2회 이상 이식군 삭제 취소;

**data** zio.t40\_0817\_m\_kidtrans;

set zio.t40\_0817\_m;

if substr(mcex\_sick\_sym, **1**, **4**) in ("Z940", "V005", "R328") or substr(spcf\_sym\_type, **1**, **4**) in ("V005");

**run**;

\* (23.11.03) R328은 T30에서 뽑기;

**data** zio.t30\_0817\_m\_kidtrans;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("R328");

**run**;

\* 3번 study population 정의 위해, V005 따로 뽑아두기;

**data** zio.t40\_0817\_m\_v005;

set zio.t40\_0817\_m;

if substr(spcf\_sym\_type, **1**, **4**) in ("V005");

**run**;

\* count unique mother who had kidney transplant;

\* Z94.0 code가 입력되었거나, 신이식 수술 코드가 발행되었거나, V005가 1회 이상 발행된 자;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_kidtrans;

**quit**; \* 419; \* (24.07.29 수정후) 528;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_kidtrans;

**quit**; \* 295; \* 295;

**data** zio.t40\_0817\_m\_kidtrans;

set zio.t40\_0817\_m\_kidtrans;

kidtrans = **1**;

**run**;

\* Z940, R328은 하나로 합치기;

**data** z940;

set zio.t40\_0817\_m\_kidtrans;

if substr(mcex\_sick\_sym, **1**, **4**) in ("Z940");

**run**;

**data** r328;

set zio.t30\_0817\_m\_kidtrans;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("R328");

**run**;

**data** z940;

set z940;

rename mcex\_sick\_sym = sym\_code;

**run**;

**data** z940;

set z940;

keep indi\_dscm\_no mdcare\_strt\_dt sym\_code;

**run**;

**data** r328;

set r328;

rename mcare\_div\_cd\_adj = sym\_code;

**run**;

**data** r328;

set r328;

keep indi\_dscm\_no mdcare\_strt\_dt sym\_code;

**run**;

**data** zio.t3040\_0817\_m\_kidtrans;

set z940 r328;

**run**;

\* id, mdcare\_strt\_dt, sym\_code 로 dropdup;

**proc** **sort** data=zio.t3040\_0817\_m\_kidtrans nodupkey;

by indi\_dscm\_no sym\_code mdcare\_strt\_dt;

**run**;

**data** zio.t3040\_0817\_m\_kidtrans;

set zio.t3040\_0817\_m\_kidtrans;

if indi\_dscm\_no ^= **.**;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t3040\_0817\_m\_kidtrans;

**quit**; \* 453; \* (24.07.29 수정후) 483;

\* 뽑은 이후, target\_req202202517\_mother\_child.sas7bdat 에서 N수 확인 필요;

\* (24.01.08 수정) inner join with mother-child list;

**proc** **sql**;

create table zio.t3040\_0817\_m\_kidtrans\_target as

select p.\*, q.\*

from zio.t3040\_0817\_m\_kidtrans as p inner join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* count unique mother who had kidney transplant and in target list;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kidtrans\_target;

**quit**; \* 433; \* (24.07.29 수정후) 463;

\* count unique child whose mother had kidney transplant and in target list;

**proc** **sql**;

select count(unique child\_id)

from zio.t3040\_0817\_m\_kidtrans\_target;

**quit**; \* 511; \* (24.07.29 수정후) 548;

\* T40도 같은 작업;

\* (24.01.08 추가) inner join with mother-child list;

**proc** **sql**;

create table zio.t40\_0817\_m\_kidtrans\_target as

select p.\*, q.\*

from zio.t40\_0817\_m\_kidtrans as p inner join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* count unique mother who had kidney transplant (but, t40 only) and in target list;

**proc** **sql**;

select count(unique mother\_id)

from zio.t40\_0817\_m\_kidtrans\_target;

**quit**; \* 399; \* (24.07.29 수정후) 506;

\* count unique child whose mother had kidney transplant (but, t40 only) and in target list;

**proc** **sql**;

select count(unique child\_id)

from zio.t40\_0817\_m\_kidtrans\_target;

**quit**; \* 476; \* (24.07.29 수정후) 602;

\* 분만일로부터 1년 or 2년 이내 및 2개월 전 시점에 코드 발행 정의;

\* bth\_date 가져오기 위해 영유아 검진 붙이기;

**proc** **sql**;

create table zio.t3040\_0817\_m\_kidtrans\_target as

select p.\*, q.\*

from zio.t3040\_0817\_m\_kidtrans\_target as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* change to datetime;

**data** zio.t3040\_0817\_m\_kidtrans\_target;

set zio.t3040\_0817\_m\_kidtrans\_target;

mdcare\_strt\_dt\_new = input(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

\* bth\_date 가져오기 위해 영유아 검진 붙이기 (t40);

**proc** **sql**;

create table zio.t40\_0817\_m\_kidtrans\_target as

select p.\*, q.\*

from zio.t40\_0817\_m\_kidtrans\_target as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* change to datetime (t40);

**data** zio.t40\_0817\_m\_kidtrans\_target;

set zio.t40\_0817\_m\_kidtrans\_target;

mdcare\_strt\_dt\_new = input(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

\* Z940;

**data** zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

set zio.t3040\_0817\_m\_kidtrans\_target;

if substr(sym\_code, **1**, **4**) in ("Z940");

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

**quit**; \* 370; \* (24.07.29 수정후) 463;

\* 분만일 - 1년 or 2년 <= 진단일 <= 분만일 - 2개월 기간 정의 및 해당 기간에 진단받은 사람 정의;

**data** zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

bth\_date\_before\_2year = intnx("month", bth\_date\_new, -**24**);

format bth\_date\_before\_2year yymmdd10.;

bth\_date\_before\_1year = intnx("month", bth\_date\_new, -**12**);

format bth\_date\_before\_1year yymmdd10.;

bth\_date\_before\_2month = intnx("month", bth\_date\_new, -**2**);

format bth\_date\_before\_2month yymmdd10.;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then z940\_before\_2year = **1**;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then z940\_before\_1year = **1**;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_z940

where z940\_before\_2year = **1**;

**quit**; \* 193; \* (24.07.29 수정후) 194;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_z940

where z940\_before\_1year = **1**;

**quit**; \* 170; \* (24.07.29 수정후) 183;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_z940

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 229; \* (24.07.29 수정후) 218;

\* R328;

\* (23.11.06 추가됨);

**data** zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

set zio.t3040\_0817\_m\_kidtrans\_target;

if substr(sym\_code, **1**, **4**) in ("R328");

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

**quit**; \* 285; \* (24.07.29 수정후) 285;

\* 분만일 - 1년 or 2년 <= 진단일 <= 분만일 - 2개월 기간 정의 및 해당 기간에 진단받은 사람 정의;

**data** zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

bth\_date\_before\_2year = intnx("month", bth\_date\_new, -**24**);

format bth\_date\_before\_2year yymmdd10.;

bth\_date\_before\_1year = intnx("month", bth\_date\_new, -**12**);

format bth\_date\_before\_1year yymmdd10.;

bth\_date\_before\_2month = intnx("month", bth\_date\_new, -**2**);

format bth\_date\_before\_2month yymmdd10.;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then r328\_before\_2year = **1**;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then r328\_before\_1year = **1**;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_r328

where r328\_before\_2year = **1**;

**quit**; \* 6; \* (24.07.29 수정후) 6;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_r328

where r328\_before\_1year = **1**;

**quit**; \* 0; \* (24.07.29 수정후) 0;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_kdtrns\_trgt\_r328

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 97; \* (24.07.29 수정후) 94;

\* 11.22 번외 (이하정 교수님 메일 회신);

**data** tmp3;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

if mdcare\_strt\_dt\_new <= bth\_date\_new;

**run**;

**data** tmp\_blood;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

rename mdcare\_strt\_dt\_new = blood\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_stmch;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

rename mdcare\_strt\_dt\_new = stmch\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_z940;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

rename mdcare\_strt\_dt\_new = z940\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_v005;

set zio.t40\_0817\_m\_kidtrans\_target\_v005;

rename mdcare\_strt\_dt\_new = v005\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_blood;

set tmp\_blood;

keep indi\_dscm\_no blood\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_stmch;

set tmp\_stmch;

keep indi\_dscm\_no stmch\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_z940;

set tmp\_z940;

keep indi\_dscm\_no z940\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_v005;

set tmp\_v005;

keep indi\_dscm\_no v005\_mdcare\_strt\_dt\_new;

**run**;

**proc** **sql**;

create table tmp3 as

select p.\*, q.\*

from tmp3 as p left join tmp\_blood as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table tmp3 as

select p.\*, q.\*

from tmp3 as p left join tmp\_stmch as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table tmp3 as

select p.\*, q.\*

from tmp3 as p left join tmp\_z940 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table tmp3 as

select p.\*, q.\*

from tmp3 as p left join tmp\_v005 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* 분만일 이후 1년/2년 정의;

**data** tmp3;

set tmp3;

bth\_date\_after\_2year = intnx("month", bth\_date\_new, **24**);

format bth\_date\_after\_2year yymmdd10.;

bth\_date\_after\_1year = intnx("month", bth\_date\_new, **12**);

format bth\_date\_after\_1year yymmdd10.;

if blood\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= blood\_mdcare\_strt\_dt\_new <= bth\_date\_after\_1year then blood\_after\_1year = **1**;

if blood\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= blood\_mdcare\_strt\_dt\_new <= bth\_date\_after\_2year then blood\_after\_2year = **1**;

if stmch\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= stmch\_mdcare\_strt\_dt\_new <= bth\_date\_after\_1year then stmch\_after\_1year = **1**;

if stmch\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= stmch\_mdcare\_strt\_dt\_new <= bth\_date\_after\_2year then stmch\_after\_2year = **1**;

if mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= mdcare\_strt\_dt\_new <= bth\_date\_after\_1year then r328\_after\_1year = **1**;

if mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= mdcare\_strt\_dt\_new <= bth\_date\_after\_2year then r328\_after\_2year = **1**;

if z940\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= mdcare\_strt\_dt\_new <= bth\_date\_after\_1year then z940\_after\_1year = **1**;

**run**;

\* V005만 따로 할때는 이거 실행; \* 묶으면 너무 오래 걸림;

**data** tmp3;

set tmp3;

bth\_date\_after\_2year = intnx("month", bth\_date\_new, **24**);

format bth\_date\_after\_2year yymmdd10.;

bth\_date\_after\_1year = intnx("month", bth\_date\_new, **12**);

format bth\_date\_after\_1year yymmdd10.;

if v005\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new <= v005\_mdcare\_strt\_dt\_new <= bth\_date\_after\_1year then v005\_after\_1year = **1**;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from tmp3

where blood\_after\_1year = **1** or stmch\_after\_1year = **1** or r328\_after\_1year = **1**;

**quit**; \* 4;

**proc** **sql**;

select count(unique mother\_id)

from tmp3

where blood\_after\_2year = **1** or stmch\_after\_2year = **1** or r328\_after\_2year = **1**;

**quit**; \* 6;

**proc** **sql**;

select count(unique mother\_id)

from tmp3

where z940\_after\_1year = **1**;

**quit**; \* 0;

**proc** **sql**;

select count(unique mother\_id)

from tmp3

where v005\_after\_1year = **1**;

**quit**; \* 68;

\* V005 (2회 이상);

**data** zio.t40\_0817\_m\_kidtrans\_target\_v005;

set zio.t40\_0817\_m\_kidtrans\_target;

if substr(spcf\_sym\_type, **1**, **4**) in ("V005");

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t40\_0817\_m\_kidtrans\_target\_v005;

**quit**; \* 356; \* (24.07.29 수정후) 439;

\* 분만일 - 1년 or 2년 <= 진단일 <= 분만일 - 2개월 기간 정의;

**data** zio.t40\_0817\_m\_kidtrans\_target\_v005;

set zio.t40\_0817\_m\_kidtrans\_target\_v005;

bth\_date\_before\_2year = intnx("month", bth\_date\_new, -**24**);

format bth\_date\_before\_2year yymmdd10.;

bth\_date\_before\_1year = intnx("month", bth\_date\_new, -**12**);

format bth\_date\_before\_1year yymmdd10.;

bth\_date\_before\_2month = intnx("month", bth\_date\_new, -**2**);

format bth\_date\_before\_2month yymmdd10.;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_kidtrans\_target\_v005;

by indi\_dscm\_no;

**run**;

\* 분만일 - 1년 <= 진단일 <= 분만일 - 2개월 일 시, group1\_ += 1;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_1y;

set zio.t40\_0817\_m\_kidtrans\_target\_v005;

by indi\_dscm\_no;

retain group1\_ **1**;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then group1\_ = group1\_ + **1**;

if first.indi\_dscm\_no then group1\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_kt\_t\_v005\_1y;

by indi\_dscm\_no descending group1\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_kt\_t\_v005\_1y nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_1y;

set zio.t40\_0817\_m\_kt\_t\_v005\_1y;

if group1\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_1y;

set zio.t40\_0817\_m\_kt\_t\_v005\_1y;

drop group1\_;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t40\_0817\_m\_kt\_t\_v005\_1y;

**quit**; \* 181; \* (24.07.29 수정후) 192;

\* 분만일 - 2년 <= 진단일 <= 분만일 - 2개월 일 시, group2\_ += 1;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_2y;

set zio.t40\_0817\_m\_kidtrans\_target\_v005;

by indi\_dscm\_no;

retain group2\_ **1**;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then group2\_ = group2\_ + **1**;

if first.indi\_dscm\_no then group2\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_kt\_t\_v005\_2y;

by indi\_dscm\_no descending group2\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_kt\_t\_v005\_2y nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_2y;

set zio.t40\_0817\_m\_kt\_t\_v005\_2y;

if group2\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_kt\_t\_v005\_2y;

set zio.t40\_0817\_m\_kt\_t\_v005\_2y;

drop group2\_;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.t40\_0817\_m\_kt\_t\_v005\_2y;

**quit**; \* 195; \* (24.07.29 수정후) 195;

**proc** **sql**;

select count(unique mother\_id)

from zio.t40\_0817\_m\_kidtrans\_target\_v005

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 218; \* (24.07.29 수정후) 218;

\* all z940, r328, v005 combined and drop dup;

\* 분만 전 2year ~ 분만 전 2month 내에 진단받은 study\_group\_1\_2y2m;

**data** tmp1;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

where z940\_before\_2year = **1**;

**run**;

**data** tmp2;

set zio.t40\_0817\_m\_kt\_t\_v005\_2y;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

**run**;

**data** tmp3;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

where r328\_before\_2year = **1**;

**run**;

**data** zio.study\_group\_1\_2y2m;

set tmp1 tmp2 tmp3;

**run**;

**proc** **sort** data=zio.study\_group\_1\_2y2m nodupkey;

by mother\_id;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_1\_2y2m;

**quit**; \* 205; \* (24.07.29 수정후) 206;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_1\_2y2m;

**quit**; \* 205; \* (24.07.29 수정후) 206;

\* 분만 전 1year ~ 분만 전 2month 내에 진단받은 study\_group\_1\_1y2m;

**data** tmp1;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

where z940\_before\_1year = **1**;

**run**;

**data** tmp2;

set zio.t40\_0817\_m\_kt\_t\_v005\_1y;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

**run**;

**data** tmp3;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

where r328\_before\_1year = **1**;

**run**;

**data** zio.study\_group\_1\_1y2m;

set tmp1 tmp2 tmp3;

**run**;

**proc** **sort** data=zio.study\_group\_1\_1y2m nodupkey;

by mother\_id;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_1\_1y2m;

**quit**; \* 187; \* (24.07.29 수정후) 200;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_1\_1y2m;

**quit**; \* 187; \* (24.07.29 수정후) 200;

\* 2. 신장이식을 받지 않은 말기 신부전 환자;

\* Inclusion criteria;

\* (initial protocol) 혈액투석 또는 복막투석 관련코드가 3개월 이상의 기간 동안 있으면서 조회 가능 기간 중 단 한 번도 V005는 발행되지 않은 자;

\* (23.10.18 protocol ver.1.1 수정) 분만일로부터 1년 or 2년 이내 및 2개월 전 시점에 혈액투석 또는 복막투석 관련코드가 3개월 이상의 기간 동안 발행된 자;

\* Exclusion criteria;

\* 분만일로부터 1년 or 2년 이내 및 2개월 전 시점에 V005 코드가 단 한번도 발행되지 않은 자;

\* 혈액투석: "O7020", "O7021", "V001";

\* 복막투석: "O7061", "O7062", "O7071", "O7072", "O7073", "O7074", "O7075", "V003"

+ 이외, T3060에서 "복막투석액" 주성분코드 적용하여 추출 필요 (반입 후 돌리기);

\* 복막투석액 주성분코드: "3214", "3216", "3218", "3220"-"3225", "3240", "3243"-"3263", "3496"-"3503", "3506"-"3541", "3601"-"3603", "3629"-"3630", "3659"-"3663", "3666"-"3669",

"3808"-"3809", "4008"-"4010", "4095"-"4099", "4229"-"4235", "4308"-"4313", "4490"-"4492", "4498"-"4500", "4504"-"4507", "4509", "4637"-"4644", "4646"-"4648",

"4845"-"4847", "4935"-"4936", "4949"-"4951", "5096"-"5098", "5107"-"5111", "5135", "5161"-"5163", "B013", "B014", "B066";

\* 말기 신부전 환자 뽑기;

\* ESRF (end-stage renal failure), 혈액투석/복막투석 코드로 상병내역 테이블에서 뽑기;

**data** zio.t40\_0817\_m\_ESRF;

set zio.t40\_0817\_m;

if substr(spcf\_sym\_type, **1**, **4**) in ("V001", "V003") or substr(mcex\_sick\_sym, **1**, **5**) in ("O7020", "O7021", "O7061", "O7062", "O7071", "O7072",

"O7073", "O7074", "O7075");

**run**;

\* 혈액투석만;

**data** zio.t40\_0817\_m\_ESRF\_blood;

set zio.t40\_0817\_m;

if substr(spcf\_sym\_type, **1**, **4**) in ("V001") or substr(mcex\_sick\_sym, **1**, **5**) in ("O7020", "O7021");

**run**;

\* count unique mother who has ESRF\_blood;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_ESRF\_blood;

**quit**; \* 523; \* (24.07.29 수정후) 736;

\* 처치코드는 30에서 뽑아야 함..!;

**data** zio.t30\_0817\_m\_ESRF\_blood;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("V001") or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("O7020", "O7021");

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_ESRF\_blood;

**quit**; \* 890; \* (24.07.29 수정후) 890;

\* 복막투석만;

**data** zio.t40\_0817\_m\_ESRF\_stomache;

set zio.t40\_0817\_m;

if substr(spcf\_sym\_type, **1**, **4**) in ("V003") or mcex\_sick\_sym in ("O7061", "O7062", "O7071", "O7072", "O7073", "O7074", "O7075");

**run**;

\* count unique mother who has ESRF\_stomache;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_ESRF\_stomache;

**quit**; \* 149; \* (24.07.29 수정후) 215;

\* 10.18 여기까지; \* 3개월 기간 반영하는 거 잊지말기;

**data** zio.t30\_0817\_m\_ESRF\_stomache;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("3214", "3216", "3218", "3220", "3221", "3222", "3223", "3224", "3225", "3240",

"3243", "3244", "3245", "3246", "3247", "3248", "3249", "3250", "3251", "3252", "3253", "3254", "3255", "3256", "3257", "3258", "3259", "3260",

"3261", "3262", "3263", "3496", "3497", "3498", "3499", "3450", "3451", "3452", "3503", "3506", "3507", "3508", "3509", "3510", "3511", "3512", "3513",

"3514", "3515", "3516", "3517", "3518", "3519", "3520", "3521", "3522", "3523", "3524", "3525", "3526", "3527", "3528", "3529", "3530", "3531", "3532",

"3533", "3534", "3535", "3536", "3537", "3538", "3539", "3540", "3541", "3601", "3602", "3603", "3629", "3630", "3659", "3660", "3661", "3662", "3663",

"3666", "3667", "3668", "3669", "3808", "3809", "4008", "4009", "4010", "4095", "4096", "4097", "4098", "4099", "4229", "4230", "4231", "4232", "4233", "4234",

"4235", "4308", "4309", "4310", "4311", "4312", "4313", "4490", "4491", "4492", "4498", "4499", "4500", "4504", "4505", "4506", "4507", "4509", "4637", "4638",

"4639", "4640", "4641", "4642", "4643", "4644", "4646", "4647", "4648",

"4845", "4846", "4847", "4935", "4936", "4949", "4950", "4951", "5096", "5097", "5098", "5107", "5108", "5109", "5110", "5111", "5135",

"5161", "5162", "5163", "B013", "B014", "B066", "V003") or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("O7061", "O7062", "O7071", "O7072", "O7073", "O7074", "O7075");

**run**;

\* count unique mother who has ESRF\_stomache in t30;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_ESRF\_stomache;

**quit**; \* 1,664;

\* t30+t40 ESRF\_stomache 합쳐서 unique N수 보기;

**data** tmp;

set zio.t40\_0817\_m\_ESRF\_stomache;

keep indi\_dscm\_no;

**run**;

**data** tmp2;

set zio.t30\_0817\_m\_ESRF\_stomache;

keep indi\_dscm\_no;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 1,718; \* (24.07.29 수정후) 1,729;

\* ESRF\_stomache t30+t40 합치기;

\* 필요한 변수만 남기기;

**data** zio.t30t40\_0817\_m\_ESRF\_stomache;

set zio.t30\_0817\_m\_ESRF\_stomache zio.t40\_0817\_m\_ESRF\_stomache;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* ESRF\_blood t30+t40 합치기;

\* 필요한 변수만 남기기;

**data** zio.t30t40\_0817\_m\_ESRF\_blood;

set zio.t30\_0817\_m\_ESRF\_blood zio.t40\_0817\_m\_ESRF\_blood;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* (24.01.08 수정) inner join with mother-child list;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_blood\_target as

select p.\*, q.\*

from zio.t30t40\_0817\_m\_ESRF\_blood as p inner join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_stmch\_trgt as

select p.\*, q.\*

from zio.t30t40\_0817\_m\_ESRF\_stomache as p inner join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t3040\_0817\_m\_ESRF\_blood\_target;

**quit**; \* 1,004; \* (24.07.29 수정후) 1,057;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

**quit**; \* 1,673; \* (24.07.29 수정후) 1,683;

\* 여기까지 혈액투석 코드가 찍힌 모든 사람을 뽑은 최종 파일: zio.t3040\_0817\_m\_ESRF\_blood\_target;

\* 복막투석 코드가 찍힌 모든 사람을 뽑은 최종 파일: zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

\* 분만일로부터 1년 or 2년 이내 및 2개월 전 시점에 코드 발행 정의;

\* bth\_date 가져오기 위해 영유아 검진 붙이기;

\* (23.12.06) 투석 정의 변경. dialysis\_gap을 정의한 기간이 임신 기간 (혹은 임신 기간 + 1년, 2년...) 에 포함되도록 했었는데,

투석은 한번 하면 계속 하기 때문에 10년 전에 시작되었어도 임신 기간 (혹은 임신 기간 + 1년, 2년...) 에 투석코드가 한번 찍히기만 하면 투석자로 정의함;

\* 혈액투석;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_blood\_target as

select p.\*, q.\*

from zio.t3040\_0817\_m\_ESRF\_blood\_target as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* change to datetime;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

mdcare\_strt\_dt\_new = input(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

\* 복막투석;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_stmch\_trgt as

select p.\*, q.\*

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* change to datetime;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

mdcare\_strt\_dt\_new = input(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

\* 분만일 - 1년 or 2년 <= 진단일 <= 분만일 - 2개월 기간 정의;

\* 혈액투석;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

bth\_date\_before\_3year = intnx("month", bth\_date\_new, -**36**);

format bth\_date\_before\_3year yymmdd10.;

bth\_date\_before\_2year = intnx("month", bth\_date\_new, -**24**);

format bth\_date\_before\_2year yymmdd10.;

bth\_date\_before\_1year = intnx("month", bth\_date\_new, -**12**);

format bth\_date\_before\_1year yymmdd10.;

bth\_date\_before\_2month = intnx("month", bth\_date\_new, -**2**);

format bth\_date\_before\_2month yymmdd10.;

**run**;

**proc** **sort** data=zio.t3040\_0817\_m\_ESRF\_blood\_target;

by indi\_dscm\_no;

**run**;

\* 혈액투석 기간 정의;

**proc** **sort** data=zio.t3040\_0817\_m\_ESRF\_blood\_target;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_blood\_target as

select \*, min(mdcare\_strt\_dt) as mdcare\_strt\_dt\_min, max(mdcare\_strt\_dt) as mdcare\_strt\_dt\_max

from zio.t3040\_0817\_m\_ESRF\_blood\_target

group by indi\_dscm\_no

order by indi\_dscm\_no, mdcare\_strt\_dt;

**quit**;

\* change to datetime;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

mdcare\_strt\_dt\_min\_new = input(mdcare\_strt\_dt\_min, yymmdd10.);

format mdcare\_strt\_dt\_min\_new yymmdd10.;

mdcare\_strt\_dt\_max\_new = input(mdcare\_strt\_dt\_max, yymmdd10.);

format mdcare\_strt\_dt\_max\_new yymmdd10.;

**run**;

\* dialysis\_gap 생성;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

dialysis\_gap = mdcare\_strt\_dt\_max\_new - mdcare\_strt\_dt\_min\_new;

**run**;

\* dialysis\_gap이 3개월/2개월/1개월 이상인 사람 정의;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if dialysis\_gap >= **90** then dialysis\_period\_3mon = **1**;

if dialysis\_gap >= **60** then dialysis\_period\_2mon = **1**;

if dialysis\_gap >= **30** then dialysis\_period\_1mon = **1**;

**run**;

\* (23.12.06) 투석 정의 변경. dialysis\_gap을 정의한 기간이 조건기간에 포함되어야 투석자로 정의했었는데,

dialysis\_gap 조건을 만족하고, 조건기간에 투석코드가 한번 찍히기만 하면 투석자로 정의함;

\* 이때, 추후 예를 들어 blood\_1y2m = 1인 사람에 대해 unique id list를 뽑고 싶을 경우, 해당 변수로 sort descending 후 drop dup 해야함.

현재는 모든 진단이 다 포함되어 있는 t40 table이기 때문;

\* dialysis\_gap >= 3mon

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then blood\_1y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then blood\_1y2m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then blood\_2y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then blood\_2y2m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then blood\_3y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then blood\_3y2m = **1**;

**run**;

\* 1y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_1y2m = **1**;

**quit**; \* 35; \* (24.07.29 수정후) 36;

\* 2y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_2y2m = **1**;

**quit**; \* 44; \* (24.07.29 수정후) 47;

\* 3y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_3y2m = **1**;

**quit**; \* 60; \* (24.07.29 수정후) 62;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where mdcare\_strt\_dt\_min\_new <= bth\_date\_new;

**quit**; \* 276;\* (24.07.29 수정후) 276;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where dialysis\_period\_3mon = **1**;

**quit**; \* 448; \* (24.07.29 수정후) 486;

\* dialysis\_gap >= 2mon

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then blood\_1y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then blood\_1y2m\_2m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then blood\_2y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then blood\_2y2m\_2m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then blood\_3y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then blood\_3y2m\_2m = **1**;

**run**;

\* 1y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_1y2m\_2m = **1**;

**quit**; \* 35; \* (24.07.29 수정후) 36;

\* 2y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_2y2m\_2m = **1**;

**quit**; \* 45; \* (24.07.29 수정후) 48;

\* 3y2m-2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_3y2m\_2m = **1**;

**quit**; \* 61; \* (24.07.29 수정후) 63;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where mdcare\_strt\_dt\_min\_new <= bth\_date\_new;

**quit**; \* 276; \* (24.07.29 수정후) 276;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where dialysis\_period\_2mon = **1**;

**quit**; \* 477; \* (24.07.29 수정후) 516;

\* dialysis\_gap >= 1mon

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then blood\_1y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then blood\_1y2m\_1m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then blood\_2y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then blood\_2y2m\_1m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then blood\_3y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then blood\_3y2m\_1m = **1**;

**run**;

\* 1y2m\_1m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_1y2m\_1m = **1**;

**quit**; \* 36; \* (24.07.29 수정후) 37;

\* 2y2m\_1m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_2y2m\_1m = **1**;

**quit**; \* 49; \* (24.07.29 수정후) 52;

\* 3y2m\_1m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_3y2m\_1m = **1**;

**quit**; \* 69; \* (24.07.29 수정후) 71;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 276; \* (24.07.29 수정후) 276;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where dialysis\_period\_1mon = **1**;

**quit**; \* 536; \* (24.07.29 수정후) 571;

\* dialysis\_gap 관계없이 전체 투석 받은 사람을 대상으로;

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then blood\_1y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then blood\_1y2m\_noterm = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then blood\_2y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then blood\_2y2m\_noterm = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then blood\_3y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_blood\_target;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then blood\_3y2m\_noterm = **1**;

**run**;

\* 1y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_1y2m\_noterm = **1**;

**quit**; \* 47; \* (24.07.29 수정후) 48;

\* 2y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_2y2m\_noterm = **1**;

**quit**; \* 84; \* (24.07.29 수정후) 85;

\* 3y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where blood\_3y2m\_noterm = **1**;

**quit**; \* 122; \* (24.07.29 수정후) 122;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_blood\_target

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 276; \* (24.07.29 수정후) 276;

/\* proc sql; \*/

/\* select count(unique mother\_id)\*/

/\* from zio.t3040\_0817\_m\_ESRF\_blood\_target\*/

/\* where dialysis\_period\_1mon = 1; \*/

/\* quit; \* 383;\*/ \* 전체이므로, 523명;

\* 분만일 - 1년 or 2년 <= 진단일 <= 분만일 - 2개월 기간 정의;

\* 복막투석;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

bth\_date\_before\_3year = intnx("month", bth\_date\_new, -**36**);

format bth\_date\_before\_3year yymmdd10.;

bth\_date\_before\_2year = intnx("month", bth\_date\_new, -**24**);

format bth\_date\_before\_2year yymmdd10.;

bth\_date\_before\_1year = intnx("month", bth\_date\_new, -**12**);

format bth\_date\_before\_1year yymmdd10.;

bth\_date\_before\_2month = intnx("month", bth\_date\_new, -**2**);

format bth\_date\_before\_2month yymmdd10.;

**run**;

**proc** **sort** data=zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

by indi\_dscm\_no;

**run**;

\* 복막투석 기간 정의;

**proc** **sort** data=zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_stmch\_trgt as

select \*, min(mdcare\_strt\_dt) as mdcare\_strt\_dt\_min, max(mdcare\_strt\_dt) as mdcare\_strt\_dt\_max

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

group by indi\_dscm\_no

order by indi\_dscm\_no, mdcare\_strt\_dt;

**quit**;

\* change to datetime;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

mdcare\_strt\_dt\_min\_new = input(mdcare\_strt\_dt\_min, yymmdd10.);

format mdcare\_strt\_dt\_min\_new yymmdd10.;

mdcare\_strt\_dt\_max\_new = input(mdcare\_strt\_dt\_max, yymmdd10.);

format mdcare\_strt\_dt\_max\_new yymmdd10.;

**run**;

\* dialysis\_gap 생성;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

dialysis\_gap = mdcare\_strt\_dt\_max\_new - mdcare\_strt\_dt\_min\_new;

**run**;

\* dialysis\_gap이 3개월/2개월/1개월 이상인 사람 정의;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if dialysis\_gap >= **90** then dialysis\_period\_3mon = **1**;

if dialysis\_gap >= **60** then dialysis\_period\_2mon = **1**;

if dialysis\_gap >= **30** then dialysis\_period\_1mon = **1**;

**run**;

\* dialysis\_gap >= 3mon;

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then stomache\_1y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then stomache\_1y2m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then stomache\_2y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then stomache\_2y2m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_3mon = 1 then stomache\_3y2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_3mon = **1** then stomache\_3y2m = **1**;

**run**;

\* 1y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_1y2m = **1**;

**quit**; \* 8; \* (24.07.29 수정후) 8;

\* 2y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_2y2m = **1**;

**quit**; \* 14; \* (24.07.29 수정후) 15;

\* 3y2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_3y2m = **1**;

**quit**; \* 22; \* (24.07.29 수정후) 23;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 721; \* (24.07.29 수정후) 721;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where dialysis\_period\_3mon = **1**;

**quit**; \* 173; \* (24.07.29 수정후) 191;

\* dialysis\_gap >= 2mon;

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then stomache\_1y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then stomache\_1y2m\_2m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then stomache\_2y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then stomache\_2y2m\_2m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_2mon = 1 then stomache\_3y2m\_2m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_2mon = **1** then stomache\_3y2m\_2m = **1**;

**run**;

\* 1y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_1y2m\_2m = **1**;

**quit**; \* 8; \* (24.07.29 수정후) 8;

\* 2y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_2y2m\_2m = **1**;

**quit**; \* 16; \* (24.07.29 수정후) 17;

\* 3y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_3y2m\_2m = **1**;

**quit**; \* 24; \* (24.07.29 수정후) 25;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 721; \* (24.07.29 수정후) 721;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where dialysis\_period\_2mon = **1**;

**quit**; \* 186; \* (24.07.29 수정후) 205;

\* dialysis\_gap >= 1mon;

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then stomache\_1y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then stomache\_1y2m\_1m = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then stomache\_2y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then stomache\_2y2m\_1m = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 & dialysis\_period\_1mon = 1 then stomache\_3y2m\_1m = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month

and dialysis\_period\_1mon = **1** then stomache\_3y2m\_1m = **1**;

**run**;

\* 1y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_1y2m\_1m = **1**;

**quit**; \* 8; \* (24.07.29 수정후) 8;

\* 2y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_2y2m\_1m = **1**;

**quit**; \* 19; \* (24.07.29 수정후) 20;

\* 3y2m\_2m;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_3y2m\_1m = **1**;

**quit**; \* 27; \* (24.07.29 수정후) 28;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 721; \* (24.07.29 수정후) 721;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where dialysis\_period\_1mon = **1**;

**quit**; \* 200; \* (24.07.29 수정후) 221;

\* dialysis\_gap 관계없이 전체;

\* 분만일 - 1년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then stomache\_1y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_1year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then stomache\_1y2m\_noterm = **1**;

**run**;

\* 분만일 - 2년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then stomache\_2y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_2year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then stomache\_2y2m\_noterm = **1**;

**run**;

\* 분만일 - 3년 <= 투석날짜 (whenever) & 같은 투석날짜 <= 분만일 - 2개월 then stomache\_3y2m\_noterm = 1;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

if bth\_date\_before\_3year <= mdcare\_strt\_dt\_new and mdcare\_strt\_dt\_new <= bth\_date\_before\_2month then stomache\_3y2m\_noterm = **1**;

**run**;

\* 1y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_1y2m\_noterm = **1**;

**quit**; \* 108; \* (24.07.29 수정후) 108;

\* 2y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_2y2m\_noterm = **1**;

**quit**; \* 268; \* (24.07.29 수정후) 268;

\* 3y2m\_noterm;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where stomache\_3y2m\_noterm = **1**;

**quit**; \* 402; \* (24.07.29 수정후) 402;

**proc** **sql**;

select count(unique mother\_id)

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt

where mdcare\_strt\_dt\_new <= bth\_date\_new;

**quit**; \* 721; \* (24.07.29 수정후) 721;

/\* proc sql; \*/

/\* select count(unique mother\_id)\*/

/\* from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\*/

/\* where dialysis\_period\_1mon = 1; \*/

/\* quit; \* 160;\*/ \* 전체이므로, 1,640명임;

\* 혈액/복막투석 기간별로 합치기;

\* 3개월 이상 투석자;

\* 혈액투석 3개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

\* 복막투석 3개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 563; \* (24.07.29 수정후) 598;

\* 혈액투석 3y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_3y2m = **1**;

**run**;

\* 복막투석 3y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_3y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 78; \* (24.07.29 수정후) 81;

\* 혈액투석 2y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_2y2m = **1**;

**run**;

\* 복막투석 2y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_2y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 56; \* (24.07.29 수정후) 60;

\* 혈액투석 1y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_1y2m = **1**;

**run**;

\* 복막투석 1y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_1y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 42; \* (24.07.29 수정후) 43;

\* 2개월 이상 투석자;

\* 혈액투석 2개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if dialysis\_period\_2mon = **1**;

**run**;

\* 복막투석 2개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if dialysis\_period\_2mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 597; \* (24.07.29 수정후) 635;

\* 혈액투석 3y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_3y2m\_2m = **1**;

**run**;

\* 복막투석 3y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_3y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 81; \* (24.07.29 수정후) 84;

\* 혈액투석 2y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_2y2m\_2m = **1**;

**run**;

\* 복막투석 2y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_2y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 59; \* (24.07.29 수정후) 63;

\* 혈액투석 1y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_1y2m\_2m = **1**;

**run**;

\* 복막투석 1y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_1y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 42; \* (24.07.29 수정후) 43;

\* 1개월 이상 투석자;

\* 혈액투석 1개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if dialysis\_period\_1mon = **1**;

**run**;

\* 복막투석 1개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if dialysis\_period\_1mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 658; \* (24.07.29 수정후) 694;

\* 혈액투석 3y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_3y2m\_1m = **1**;

**run**;

\* 복막투석 3y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_3y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 90; \* (24.07.29 수정후) 93;

\* 혈액투석 2y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_2y2m\_1m = **1**;

**run**;

\* 복막투석 2y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_2y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 65; \* (24.07.29 수정후) 69;

\* 혈액투석 1y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_1y2m\_1m = **1**;

**run**;

\* 복막투석 1y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_1y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 43; \* (24.07.29 수정후) 44;

\* 전체 기간 투석자;

\* 혈액투석 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

**run**;

\* 복막투석 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 2,536; \* (24.07.29 수정후) 2,577;

\* 혈액투석 3y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_3y2m\_noterm = **1**;

**run**;

\* 복막투석 3y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_3y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 515; \* (24.07.29 수정후) 515;

\* 혈액투석 2y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_2y2m\_noterm = **1**;

**run**;

\* 복막투석 2y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_2y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 347; \* (24.07.29 수정후) 348;

\* 혈액투석 1y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_1y2m\_noterm = **1**;

**run**;

\* 복막투석 1y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_1y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 154; \* (24.07.29 수정후) 155;

\* 번외 - 1108 이하정 교수님 메일 회신;

\* 혈액투석/복막투석 전체에서 3y2m\_noterm으로 넘어갈 때 (2,056 -> 443) 빠져나가는 환자들에 대해 R3280, Z940, V005 코드의 분포 조사;

**data** tmp\_r328;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_r328;

rename mdcare\_strt\_dt\_new = r328\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_z940;

set zio.t3040\_0817\_m\_kdtrns\_trgt\_z940;

rename mdcare\_strt\_dt\_new = z940\_mdcare\_strt\_dt\_new;

**run**;

**data** tmp\_v005;

set zio.t40\_0817\_m\_kidtrans\_target\_v005;

rename mdcare\_strt\_dt\_new = v005\_mdcare\_strt\_dt\_new;

**run**;

\* 혈액투석 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

**run**;

\* 복막투석 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

**run**;

**data** tmp\_bsall;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp\_bsall;

**quit**; \* 2,056;

\* 혈액투석 3y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if blood\_3y2m\_noterm = **1**;

**run**;

\* 복막투석 3y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if stomache\_3y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 443;

**data** tmp3;

set tmp3;

bs\_3y2m = **1**;

**run**;

**proc** **sql**;

create table tmp\_bsall as

select p.\*, q.\*

from tmp\_bsall as p left join tmp3 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no

order by indi\_dscm\_no;

**quit**;

**data** tmp\_bsall;

set tmp\_bsall;

if bs\_3y2m = **1** then delete;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp\_bsall;

**quit**; \* 1,613;

**proc** **sql**;

create table tmp\_bsall as

select p.\*, q.\*

from tmp\_bsall as p left join tmp\_r328 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no

order by indi\_dscm\_no;

**quit**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp\_bsall

where r328\_mdcare\_strt\_dt\_new ^= **.**;

**quit**; \* 196;

**proc** **sql**;

create table tmp\_bsall as

select p.\*, q.\*

from tmp\_bsall as p left join tmp\_z940 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no

order by indi\_dscm\_no;

**quit**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp\_bsall

where z940\_mdcare\_strt\_dt\_new ^= **.**;

**quit**; \* 211;

**proc** **sql**;

create table tmp\_bsall as

select p.\*, q.\*

from tmp\_bsall as p left join tmp\_v005 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no

order by indi\_dscm\_no;

**quit**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp\_bsall

where v005\_mdcare\_strt\_dt\_new ^= **.**;

**quit**; \* 206;

\* 신장이식을 한번이라도 받았던 사람 제외하기;

\* 분만일로부터 2년 ~ 2개월 이내 V005 코드를 2회 이상 진단받은자 table : zio.t40\_0817\_m\_kt\_t\_v005\_2y; \* 이 인원 제거;

**data** tmp;

set zio.t40\_0817\_m\_kt\_t\_v005\_2y;

keep mother\_id child\_id mdcare\_strt\_dt\_new bth\_date\_new;

**run**;

**data** tmp;

set tmp;

kidtrans = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by mother\_id;

**run**;

\* 혈액투석, 복막투석 table에 join;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt as

select p.\*, q.mother\_id, q.kidtrans

from zio.t3040\_0817\_m\_ESRF\_blood\_target as p left join tmp as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

create table zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt as

select p.\*, q.mother\_id, q.kidtrans

from zio.t3040\_0817\_m\_ESRF\_stmch\_trgt as p left join tmp as q

on p.mother\_id = q.mother\_id;

**quit**;

\* 신장이식자 삭제;

**data** zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

if kidtrans = **1** then delete;

**run**;

**data** zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

if kidtrans = **1** then delete;

**run**;

\* 3개월 이상 투석자;

\* 혈액투석 3개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

\* 복막투석 3개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 485; \* (24.07.29 수정후) 515;

\* 혈액투석 3y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_3y2m = **1**;

**run**;

\* 복막투석 3y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_3y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 41; \* (24.07.29 수정후) 43;

\* 혈액투석 2y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_2y2m = **1**;

**run**;

\* 복막투석 2y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_2y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 36; \* (24.07.29 수정후) 38;

\* 혈액투석 1y2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_1y2m = **1**;

**run**;

\* 복막투석 1y2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_1y2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 30; \* (24.07.29 수정후) 30;

\* 2개월 이상 투석자;

\* 혈액투석 2개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_2mon = **1**;

**run**;

\* 복막투석 2개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_2mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 516; \* (24.07.29 수정후) 548;

\* 혈액투석 3y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_3y2m\_2m = **1**;

**run**;

\* 복막투석 3y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_3y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 43; \* (24.07.29 수정후) 45;

\* 혈액투석 2y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_2y2m\_2m = **1**;

**run**;

\* 복막투석 2y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_2y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 38; \* (24.07.29 수정후) 40;

\* 혈액투석 1y2m\_2m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_1y2m\_2m = **1**;

**run**;

\* 복막투석 1y2m\_2m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_1y2m\_2m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 30; \* (24.07.29 수정후) 30;

\* 1개월 이상 투석자;

\* 혈액투석 1개월이상 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_1mon = **1**;

**run**;

\* 복막투석 1개월이상 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if dialysis\_period\_1mon = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 569; \* (24.07.29 수정후) 601;

\* 혈액투석 3y2m\_1m; \* 12/08 회의 - 최종 study group 2 인원으로 확정;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_3y2m\_1m = **1**;

**run**;

\* 복막투석 3y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_3y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 49; \* (24.07.29 수정후) 51;

\* 혈액투석 2y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_2y2m\_1m = **1**;

**run**;

\* 복막투석 2y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_2y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 43; \* (24.07.29 수정후) 45;

\* 혈액투석 1y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_1y2m\_1m = **1**;

**run**;

\* 복막투석 1y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_1y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 31; \* (24.07.29 수정후) 31;

\* 전체 기간 투석자;

\* 혈액투석 전체;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

**run**;

\* 복막투석 전체;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 2,414; \* (24.07.29 수정후) 2,454;

\* 혈액투석 3y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_3y2m\_noterm = **1**;

**run**;

\* 복막투석 3y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_3y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 463; \* (24.07.29 수정후) 463;

\* 혈액투석 2y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_2y2m\_noterm = **1**;

**run**;

\* 복막투석 2y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_2y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 317; \* (24.07.29 수정후) 317;

\* 혈액투석 1y2m\_noterm;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_1y2m\_noterm = **1**;

**run**;

\* 복막투석 1y2m\_noterm;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_1y2m\_noterm = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 139; \* (24.07.29 수정후) 139;

\* 3. 투석 전 만성 콩팥병 환자;

\* Inclusion criteria;

\* (initial protocol)

1. 전체 연구 기간 중 2회 이상 “연속” eGFR <60 or albuminuria 1+ 이상 확인되고, 혈액투석 또는 복막투석 관련코드가 3개월 미만 확인되면서

조회 가능 기간 중 단 한 번도 V005는 발행되지 않은 자,

2. 또는 N18 code가 진단된 환자 중에서 혈액투석 또는 복막투석 관련코드가 3개월 미만 확인되면서 조회 가능 기간 중 단 한 번도 V005는

발행되지 않은 자;

\* (23.10.18 protocol ver.1.1 수정)

1. 분만일로부터 5년 이내의 기간 중 eGFR <60 or albuminuria 1+ 이상 조건을 1회 or 2회 이상 만족하는 자. (연속..? 일단 연속으로 정의)

단, 혈액투석 또는 복막투석 관련코드가 3개월 미만 확인되면서 조회 가능 기간 중 단 한 번도 V005는 발행되지 않은 자

2. 또는 N18 code가 진단된 환자 중에서 혈액투석 또는 복막투석 관련코드가 3개월 미만 확인되면서 조회 가능 기간 중

단 한 번도 V005는 발행되지 않은 자; \* 23.11.06 여기도 분만일로부터 5년 이내 기간 추가;

\* (23.12.06) N18 code 대신 좀 더 specific한 진단코드로 추가;

\* 송정인 선생님 송부해주신 코드 추가;

\* N00-08, N11-16, Q60-63, D593, E850, M321, M311, N990, Q878; \* 12.06 여기까지;

\* Exclusion criteria;

\* 검진 자료가 없는 자;

\* eGFR 측정기간 2009~;

**proc** **freq** data=zio.g1eq\_0817\_m;

table g1e\_urn\_prot;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m;

by indi\_dscm\_no exmd\_bz\_yyyy;

**run**;

\* (24.01.10 수정) inner join with mother-child list;

\* drop dup by mother id, child id in bfc table;

**data** zio.bfc\_0817\_c\_m\_nodup;

set zio.bfc\_0817\_c\_m;

**run**;

**proc** **sort** data=zio.bfc\_0817\_c\_m\_nodup nodupkey;

by mother\_id child\_id;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target as

select p.\*, q.\*

from zio.g1eq\_0817\_m as p inner join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* count unique mother who had examination and in target list;

**proc** **sql**;

select count(unique mother\_id)

from zio.g1eq\_0817\_m\_target;

**quit**; \* 1,608,336;

\* count unique child whose mother had examination and in target list;

**proc** **sql**;

select count(unique child\_id)

from zio.g1eq\_0817\_m\_target;

**quit**; \* 2,187,738;

\* bth\_date 가져오기 위해 영유아 검진 붙이기;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* change to datetime;

**data** zio.g1eq\_0817\_m\_target;

set zio.g1eq\_0817\_m\_target;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_target;

by indi\_dscm\_no child\_id exmd\_bz\_yyyy;

**run**;

/\* ckd define \*/

\* proc transpose로 long에서 wide로 변경;

\* g1eq\_0817\_m\_ckd 로 환자 list 새로 생성;

\* (23.12.07) ckd < 50 1회도 추가 정의;

**data** zio.g1eq\_0817\_m\_ckd;

set zio.g1eq\_0817\_m\_target;

keep exmdrst\_judg\_dt indi\_dscm\_no child\_id g1e\_gfr;

**run**;

\* 여기서는 id, 검진일자 기준으로 drop dup 필요;

**proc** **sort** data=zio.g1eq\_0817\_m\_ckd nodupkey;

by indi\_dscm\_no exmdrst\_judg\_dt;

**run**;

\* '연속' < 60이므로, 결측은 지워도 됨;

**data** zio.g1eq\_0817\_m\_ckd;

set zio.g1eq\_0817\_m\_ckd;

if g1e\_gfr = **.** then delete;

**run**;

**proc** **transpose** data=zio.g1eq\_0817\_m\_ckd out=zio.g1eq\_0817\_m\_ckd\_tf;

var g1e\_gfr;

by indi\_dscm\_no;

**run**;

**data** zio.g1eq\_0817\_m\_ckd;

set zio.g1eq\_0817\_m\_ckd\_tf;

if (col1 ^= **.** and col1 < **60**) then ckd\_1 = **1**;

if (col1 ^= **.** and col1 < **60**) then low\_egfr = col1;

if (col2 ^= **.** and col2 < **60**) then ckd\_1 = **1**;

if (col2 ^= **.** and col2 < **60**) then low\_egfr = col2;

if (col3 ^= **.** and col3 < **60**) then ckd\_1 = **1**;

if (col3 ^= **.** and col3 < **60**) then low\_egfr = col3;

if (col4 ^= **.** and col4 < **60**) then ckd\_1 = **1**;

if (col4 ^= **.** and col4 < **60**) then low\_egfr = col4;

if (col5 ^= **.** and col5 < **60**) then ckd\_1 = **1**;

if (col5 ^= **.** and col5 < **60**) then low\_egfr = col5;

if (col6 ^= **.** and col6 < **60**) then ckd\_1 = **1**;

if (col6 ^= **.** and col6 < **60**) then low\_egfr = col6;

if (col7 ^= **.** and col7 < **60**) then ckd\_1 = **1**;

if (col7 ^= **.** and col7 < **60**) then low\_egfr = col7;

if col1 ^= **.** and col2 ^= **.** and col1 < **60** and col2 < **60** then ckd\_2 = **1**;

if col1 ^= **.** and col2 ^= **.** and col1 < **60** and col2 < **60** then low\_egfr = col2;

if (col2 ^= **.** and col3 ^= **.** and col2 < **60** and col3 < **60**) then ckd\_2 = **1**;

if (col2 ^= **.** and col3 ^= **.** and col2 < **60** and col3 < **60**) then low\_egfr = col3;

if (col3 ^= **.** and col4 ^= **.** and col3 < **60** and col4 < **60**) then ckd\_2 = **1**;

if (col3 ^= **.** and col4 ^= **.** and col3 < **60** and col4 < **60**) then low\_egfr = col4;

if (col4 ^= **.** and col5 ^= **.** and col4 < **60** and col5 < **60**) then ckd\_2 = **1**;

if (col4 ^= **.** and col5 ^= **.** and col4 < **60** and col5 < **60**) then low\_egfr = col5;

if (col5 ^= **.** and col6 ^= **.** and col5 < **60** and col6 < **60**) then ckd\_2 = **1**;

if (col5 ^= **.** and col6 ^= **.** and col5 < **60** and col6 < **60**) then low\_egfr = col6;

if (col6 ^= **.** and col7 ^= **.** and col6 < **60** and col7 < **60**) then ckd\_2 = **1**;

if (col6 ^= **.** and col7 ^= **.** and col6 < **60** and col7 < **60**) then low\_egfr = col7;

if (col1 ^= **.** and col1 < **50**) then ckd\_3 = **1**;

if (col1 ^= **.** and col1 < **50**) then low\_egfr = col1;

if (col2 ^= **.** and col2 < **50**) then ckd\_3 = **1**;

if (col2 ^= **.** and col2 < **50**) then low\_egfr = col2;

if (col3 ^= **.** and col3 < **50**) then ckd\_3 = **1**;

if (col3 ^= **.** and col3 < **50**) then low\_egfr = col3;

if (col4 ^= **.** and col4 < **50**) then ckd\_3 = **1**;

if (col4 ^= **.** and col4 < **50**) then low\_egfr = col4;

if (col5 ^= **.** and col5 < **50**) then ckd\_3 = **1**;

if (col5 ^= **.** and col5 < **50**) then low\_egfr = col5;

if (col6 ^= **.** and col6 < **50**) then ckd\_3 = **1**;

if (col6 ^= **.** and col6 < **50**) then low\_egfr = col6;

if (col7 ^= **.** and col7 < **50**) then ckd\_3 = **1**;

if (col7 ^= **.** and col7 < **50**) then low\_egfr = col7;

**run**;

**proc** **freq** data=zio.g1eq\_0817\_m\_ckd;

table ckd\_1 ckd\_2 ckd\_3;

**run**; \* 26,783; \* 1,114; \* 4,842;

/\* ckd define end \*/

/\* proteinuria define \*/

\* proc transpose로 long에서 wide로 변경;

\* g1eq\_0817\_m\_prturia 로 환자 list 새로 생성;

**data** zio.g1eq\_0817\_m\_prturia;

set zio.g1eq\_0817\_m\_target;

keep exmdrst\_judg\_dt indi\_dscm\_no child\_id g1e\_urn\_prot;

**run**;

\* 여기서는 id, 검진일자 기준으로 drop dup 필요;

**proc** **sort** data=zio.g1eq\_0817\_m\_prturia nodupkey;

by indi\_dscm\_no exmdrst\_judg\_dt;

**run**;

\* '연속'이므로, 결측은 지워도 됨;

**data** zio.g1eq\_0817\_m\_prturia;

set zio.g1eq\_0817\_m\_prturia;

if g1e\_urn\_prot = **.** then delete;

**run**;

**proc** **transpose** data=zio.g1eq\_0817\_m\_prturia out=zio.g1eq\_0817\_m\_prturia\_tf;

var g1e\_urn\_prot;

by indi\_dscm\_no;

**run**;

**data** zio.g1eq\_0817\_m\_prturia;

set zio.g1eq\_0817\_m\_prturia\_tf;

if (col1 ^= **.** and col1 >= **3**) then proturia\_1 = **1**;

if (col1 ^= **.** and col1 >= **3**) then high\_proturia = col1;

if (col2 ^= **.** and col2 >= **3**) then proturia\_1 = **1**;

if (col2 ^= **.** and col2 >= **3**) then high\_proturia = col2;

if (col3 ^= **.** and col3 >= **3**) then proturia\_1 = **1**;

if (col3 ^= **.** and col3 >= **3**) then high\_proturia = col3;

if (col4 ^= **.** and col4 >= **3**) then proturia\_1 = **1**;

if (col4 ^= **.** and col4 >= **3**) then high\_proturia = col4;

if (col5 ^= **.** and col5 >= **3**) then proturia\_1 = **1**;

if (col5 ^= **.** and col5 >= **3**) then high\_proturia = col5;

if (col6 ^= **.** and col6 >= **3**) then proturia\_1 = **1**;

if (col6 ^= **.** and col6 >= **3**) then high\_proturia = col6;

if (col7 ^= **.** and col7 >= **3**) then proturia\_1 = **1**;

if (col7 ^= **.** and col7 >= **3**) then high\_proturia = col7;

if (col8 ^= **.** and col8 >= **3**) then proturia\_1 = **1**;

if (col8 ^= **.** and col8 >= **3**) then high\_proturia = col8;

if (col9 ^= **.** and col9 >= **3**) then proturia\_1 = **1**;

if (col9 ^= **.** and col9 >= **3**) then high\_proturia = col9;

if (col10 ^= **.** and col10 >= **3**) then proturia\_1 = **1**;

if (col10 ^= **.** and col10 >= **3**) then high\_proturia = col10;

if col1 ^= **.** and col2 ^= **.** and col1 >= **3** and col2 >= **3** then proturia\_2 = **1**;

if col1 ^= **.** and col2 ^= **.** and col1 >= **3** and col2 >= **3** then high\_proturia = col2;

if (col2 ^= **.** and col3 ^= **.** and col2 >= **3** and col3 >= **3**) then proturia\_2 = **1**;

if (col2 ^= **.** and col3 ^= **.** and col2 >= **3** and col3 >= **3**) then high\_proturia = col3;

if (col3 ^= **.** and col4 ^= **.** and col3 >= **3** and col4 >= **3**) then proturia\_2 = **1**;

if (col3 ^= **.** and col4 ^= **.** and col3 >= **3** and col4 >= **3**) then high\_proturia = col4;

if (col4 ^= **.** and col5 ^= **.** and col4 >= **3** and col5 >= **3**) then proturia\_2 = **1**;

if (col4 ^= **.** and col5 ^= **.** and col4 >= **3** and col5 >= **3**) then high\_proturia = col5;

if (col5 ^= **.** and col6 ^= **.** and col5 >= **3** and col6 >= **3**) then proturia\_2 = **1**;

if (col5 ^= **.** and col6 ^= **.** and col5 >= **3** and col6 >= **3**) then high\_proturia = col6;

if (col6 ^= **.** and col7 ^= **.** and col6 >= **3** and col7 >= **3**) then proturia\_2 = **1**;

if (col6 ^= **.** and col7 ^= **.** and col6 >= **3** and col7 >= **3**) then high\_proturia = col7;

if (col7 ^= **.** and col8 ^= **.** and col7 >= **3** and col8 >= **3**) then proturia\_2 = **1**;

if (col7 ^= **.** and col8 ^= **.** and col7 >= **3** and col8 >= **3**) then high\_proturia = col8;

if (col8 ^= **.** and col9 ^= **.** and col8 >= **3** and col9 >= **3**) then proturia\_2 = **1**;

if (col8 ^= **.** and col9 ^= **.** and col8 >= **3** and col9 >= **3**) then high\_proturia = col9;

if (col9 ^= **.** and col10 ^= **.** and col9 >= **3** and col10 >= **3**) then proturia\_2 = **1**;

if (col9 ^= **.** and col10 ^= **.** and col9 >= **3** and col10 >= **3**) then high\_proturia = col10;

**run**;

**proc** **freq** data=zio.g1eq\_0817\_m\_prturia;

table proturia\_1 proturia\_2;

**run**; \* 67,290; \* 4,324;

/\* proteinuria define end \*/

\* 연속 2회끼리 합치기;

**data** tmp;

set zio.g1eq\_0817\_m\_ckd;

keep indi\_dscm\_no low\_egfr;

if ckd\_2 = **1**;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_prturia;

keep indi\_dscm\_no high\_proturia;

if proturia\_2 = **1**;

**run**;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_2;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_ckd\_prturia\_2 nodupkey;

by indi\_dscm\_no;

**run**; \* 5,250;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_2;

set zio.g1eq\_0817\_m\_ckd\_prturia\_2;

ckdprturia\_2 = **1**;

**run**;

\* 연속 1회끼리 합치기;

**data** tmp;

set zio.g1eq\_0817\_m\_ckd;

keep indi\_dscm\_no low\_egfr;

if ckd\_1 = **1**;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_prturia;

keep indi\_dscm\_no high\_proturia;

if proturia\_1 = **1**;

**run**;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_1;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_ckd\_prturia\_1 nodupkey;

by indi\_dscm\_no;

**run**; \* 91,719;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_1;

set zio.g1eq\_0817\_m\_ckd\_prturia\_1;

ckdprturia\_1 = **1**;

**run**;

\* (23.12.07 추가) eGFR < 50 1회, high proteinuria 연속 2회끼리 합치기;

\* zio.g1eq\_0817\_m\_ckd\_prturia\_3;

**data** tmp;

set zio.g1eq\_0817\_m\_ckd;

keep indi\_dscm\_no low\_egfr;

if ckd\_3 = **1**;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_prturia;

keep indi\_dscm\_no high\_proturia;

if proturia\_2 = **1**;

**run**;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_3;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_ckd\_prturia\_3 nodupkey;

by indi\_dscm\_no;

**run**; \* 9,181;

**data** zio.g1eq\_0817\_m\_ckd\_prturia\_3;

set zio.g1eq\_0817\_m\_ckd\_prturia\_3;

ckdprturia\_3 = **1**;

**run**;

\* 분만 전 5년 이내 기간 정의하기 위해 다시 본 table에 left join;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target as p left join zio.g1eq\_0817\_m\_ckd\_prturia\_1 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join zio.g1eq\_0817\_m\_ckd\_prturia\_2 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join zio.g1eq\_0817\_m\_ckd\_prturia\_3 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

if ckdprturia\_1 = **1** and low\_egfr ^= **.** and low\_egfr = g1e\_gfr then ckdprturia\_1\_date = exmdrst\_judg\_dt;

if ckdprturia\_1 = **1** and high\_proturia ^= **.** and high\_proturia = g1e\_urn\_prot then ckdprturia\_1\_date = exmdrst\_judg\_dt;

if ckdprturia\_2 = **1** and low\_egfr ^= **.** and low\_egfr = g1e\_gfr then ckdprturia\_2\_date = exmdrst\_judg\_dt;

if ckdprturia\_2 = **1** and high\_proturia ^= **.** and high\_proturia = g1e\_urn\_prot then ckdprturia\_2\_date = exmdrst\_judg\_dt;

if ckdprturia\_3 = **1** and low\_egfr ^= **.** and low\_egfr = g1e\_gfr then ckdprturia\_3\_date = exmdrst\_judg\_dt;

if ckdprturia\_3 = **1** and high\_proturia ^= **.** and high\_proturia = g1e\_urn\_prot then ckdprturia\_3\_date = exmdrst\_judg\_dt;

**run**;

**data** tmp;

set zio.g1eq\_0817\_m\_target\_ckdprt;

keep indi\_dscm\_no ckdprturia\_1\_date;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_target\_ckdprt;

keep indi\_dscm\_no ckdprturia\_2\_date;

**run**;

**data** tmp3;

set zio.g1eq\_0817\_m\_target\_ckdprt;

keep indi\_dscm\_no ckdprturia\_3\_date;

**run**;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

drop ckdprturia\_1\_date ckdprturia\_2\_date ckdprturia\_3\_date;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending ckdprturia\_1\_date;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join tmp as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**proc** **sort** data=tmp2;

by indi\_dscm\_no descending ckdprturia\_2\_date;

**run**;

**proc** **sort** data=tmp2 nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join tmp2 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**proc** **sort** data=tmp3;

by indi\_dscm\_no descending ckdprturia\_3\_date;

**run**;

**proc** **sort** data=tmp3 nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join tmp3 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**data** tmp;

set zio.g1eq\_0817\_m\_target\_ckdprt;

if ckdprturia\_3 = **1**;

**run**;

\* change to datetime;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

ckdprturia\_1\_date\_new = input(ckdprturia\_1\_date, yymmdd10.);

format ckdprturia\_1\_date\_new yymmdd10.;

ckdprturia\_2\_date\_new = input(ckdprturia\_2\_date, yymmdd10.);

format ckdprturia\_2\_date\_new yymmdd10.;

ckdprturia\_3\_date\_new = input(ckdprturia\_3\_date, yymmdd10.);

format ckdprturia\_3\_date\_new yymmdd10.;

**run**;

\* 분만일 - 5년 <= ckdprturia\_1\_date or ckdprturia\_2\_date < 분만일 인 사람을 각각 ckdprturia\_1\_5y, ckdprturia\_2\_5y로 정의;

\* (23.12.07) ckdprturia\_3\_date 추가;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

bth\_date\_before\_5year = intnx("month", bth\_date\_new, -**60**);

format bth\_date\_before\_5year yymmdd10.;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_target\_ckdprt;

by indi\_dscm\_no child\_id;

**run**;

\* ckdprturia\_1\_5y;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

if ckdprturia\_1 = **1** and bth\_date\_before\_5year <= ckdprturia\_1\_date\_new and ckdprturia\_1\_date\_new <= bth\_date\_new then ckdprturia\_1\_5y = **1**;

**run**;

\* ckdprturia\_2\_5y;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

if ckdprturia\_2 = **1** and bth\_date\_before\_5year <= ckdprturia\_2\_date\_new and ckdprturia\_2\_date\_new <= bth\_date\_new then ckdprturia\_2\_5y = **1**;

**run**;

\* ckdprturia\_3\_5y;

**data** zio.g1eq\_0817\_m\_target\_ckdprt;

set zio.g1eq\_0817\_m\_target\_ckdprt;

if ckdprturia\_3 = **1** and bth\_date\_before\_5year <= ckdprturia\_3\_date\_new and ckdprturia\_3\_date\_new <= bth\_date\_new then ckdprturia\_3\_5y = **1**;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_1 = **1**;

**quit**; \* 91,719;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_1\_5y = **1**;

**quit**; \* 34,709;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_2 = **1**;

**quit**; \* 5,250;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_2\_5y = **1**;

**quit**; \* 1,455;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_3 = **1**;

**quit**; \* 8,937;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_3\_5y = **1**;

**quit**; \* 2,996;

\* 혈액투석 또는 복막투석 관련코드 3개월 이상 확인자, 조회 가능 기간 중 한번이라도 V005 발행자 제외;

\* zio.t3040\_0817\_m\_ESRF\_blood\_target 에서 dialysis\_period\_3mon=1;

\* zio.t3040\_0817\_m\_ESRF\_stmch\_trgt 에서 dialysis\_period\_3mon=1;

\* zio.t40\_0817\_m\_v005 포함인원;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_blood\_target;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

**data** tmp; set tmp;

esrf\_blood\_3mon = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt\_exp as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt as p left join tmp as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt;

keep indi\_dscm\_no;

if dialysis\_period\_3mon = **1**;

**run**;

**data** tmp; set tmp;

esrf\_stmch\_3mon = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt\_exp as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp as p left join tmp as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

**data** tmp;

set zio.t40\_0817\_m\_v005;

keep indi\_dscm\_no;

**run**;

**data** tmp; set tmp;

v005 = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_ckdprt\_exp as

select p.\*, q.\*

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp as p left join tmp as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

\* 제외한 인원 세기;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_1 = **1**;

**quit**; \* 91,719; \* (24.07.29 수정후) 91,719;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_1\_5y = **1**;

**quit**; \* 34,709; \* (24.07.29 수정후) 34,709;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp

where ckdprturia\_1\_5y = **1** and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**quit**; \* 34,650; \* (24.07.29 수정후) 34,650;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_2 = **1**;

**quit**; \* 5,250; \* (24.07.29 수정후) 5,250;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_2\_5y = **1**;

**quit**; \* 1,455; \* (24.07.29 수정후) 1,455;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp

where ckdprturia\_2\_5y = **1** and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**quit**; \* 1,439; \* (24.07.29 수정후) 1,436;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_3 = **1**;

**quit**; \* 8,937; \* (24.07.29 수정후) 8,937;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt

where ckdprturia\_3\_5y = **1**;

**quit**; \* 2,996; \* (24.07.29 수정후) 2,996;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp

where ckdprturia\_3\_5y = **1** and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**quit**; \* 2,975; \* (24.07.29 수정후) 2,970;

\* N18 code 뽑기;

\* (23.12.07 N18 대신 다음 코드 사용) N00-08, N11-16, Q60-63, D593, E850, M321, M311, N990, Q878;

/\*data zio.t40\_0817\_m\_N18; \*/

/\*set zio.t40\_0817\_m; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("N18"); \*/

/\*run; \*/

**data** zio.t40\_0817\_m\_ckd;

set zio.t40\_0817\_m;

if substr(mcex\_sick\_sym, **1**, **3**) in ("N00", "N01", "N02", "N03", "N04", "N05", "N06", "N07", "N08", "N11", "N12", "N13", "N14", "N15", "N16",

"Q60", "Q61", "Q62", "Q63")

or substr(mcex\_sick\_sym, **1**, **4**) in ("D593", "E850", "M321", "M311", "N990", "Q878");

**run**;

**data** tmp;

set zio.t40\_0817\_m\_ckd;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**data** tmp; set tmp;

CKD = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp; set tmp;

rename mdcare\_strt\_dt = CKD\_mdcare\_strt\_dt;

**run**;

\* change to datetime;

**data** tmp; set tmp;

CKD\_mdcare\_strt\_dt\_new = input(CKD\_mdcare\_strt\_dt, yymmdd10.);

format CKD\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD as

select p.\*, q.indi\_dscm\_no, q.CKD, q.CKD\_mdcare\_strt\_dt\_new

from zio.g1eq\_0817\_m\_target\_ckdprt\_exp as p left join tmp as q

on p.indi\_dscm\_no = q.indi\_dscm\_no;

**quit**;

\* CKD\_before\_bth;

**data** zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

set zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

if CKD\_mdcare\_strt\_dt\_new ^= **.** and CKD\_mdcare\_strt\_dt\_new <= bth\_date\_new then CKD\_before\_bth = **1**;

**run**;

\* CKD\_5y;

**data** zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

set zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

if CKD\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_before\_5year <= CKD\_mdcare\_strt\_dt\_new and CKD\_mdcare\_strt\_dt\_new <= bth\_date\_new then CKD\_5y = **1**;

**run**;

\* 최종 CKD진단코드까지 포함한 인원 세기;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where CKD\_before\_bth = **1**;

**quit**; \* n18 - 1,398; \* CKD - 54,875; \* (24.07.29 수정후) 54,840;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where CKD\_5y = **1**;

**quit**; \* n18 - 1,189; \* CKD - 45,829; \* (24.07.29 수정후) 45,962;

\* 1회;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where ckdprturia\_1 = **1** or CKD\_5y = **1**;

**quit**; \* 133,466; \* (24.07.29 수정후) 133,773;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where ckdprturia\_1\_5y = **1** or CKD\_5y = **1**;

**quit**; \* 78,363; \* (24.07.29 수정후) 78,541;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where (ckdprturia\_1\_5y = **1** or CKD\_5y = **1**) and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**quit**; \* 78,254; \* (24.07.29 수정후) 78,431;

\* 2회;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where ckdprturia\_2 = **1** or CKD\_5y = **1**;

**quit**; \* 50,448; \* (24.07.29 수정후) 50,677;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where ckdprturia\_2\_5y = **1** or CKD\_5y = **1**;

**quit**; \* 47,018; \* (24.07.29 수정후) 47,182;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD

where (ckdprturia\_2\_5y = **1** or CKD\_5y = **1**) and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

\* 2회 대상자만 남은 최종 table 생성;

**data** zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD\_fnl;

set zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

if (ckdprturia\_2\_5y = **1** or CKD\_5y = **1**) and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD\_fnl;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

**proc** **sort** data=zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD\_fnl nodupkey;

by indi\_dscm\_no;

**run**;

\* (24.02.27) 2회 대상자 중, CKD 진단코드로 정의한 인원 제외한 pool 생성;

**data** zio.g1eq\_0817\_m\_trgt\_CKDfnl\_2;

set zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD;

if (ckdprturia\_2\_5y = **1**) and esrf\_blood\_3mon ^= **1** and esrf\_stmch\_3mon ^ = **1** and v005 ^= **1**;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_CKDfnl\_2;

**quit**; \* 1,439; \* (24.07.29 수정후) 1,436;

**proc** **sort** data=zio.g1eq\_0817\_m\_trgt\_CKDfnl\_2 nodupkey;

by indi\_dscm\_no;

**run**;

# 1-2. Actual study - define control group

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_1\_final;

**quit**; \* 187; \* (24.07.29 수정후) 200;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_2\_final;

**quit**; \* 49; \* (24.07.29 수정후) 51;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_3\_final;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

\* control group 정의;

\* 0. 검진 자료가 있는 자로 시작;

\* 1. study group 1, 2, 3 인원을 제외;

\* 2. 분만 전 CKD 코드 (송정인 선생님이 보내주신 것) 가 한번이라도 있었던 사람 제외;

\* 3. 분만 이전 기간 전체 기간 or 5년 이내 기간 동안 V001, V003, V005 코드는 없으면서

일반 검진 결과에서 신기능 이상지표 (eGFR <60 or albuminuria 1+ 이상)가 없는 것이 1회 or 2회 연속으로 확인된 그룹;

\* 0. 검진 자료가 있는 자로 시작;

**data** zio.control\_group;

set zio.g1eq\_0817\_m\_target;

keep mother\_id child\_id sex\_type bth\_date\_new;

**run**;

**proc** **sort** data=zio.control\_group nodupkey;

by mother\_id child\_id;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group;

**quit**; \* 1,608,336;

**proc** **sql**;

select count(unique child\_id)

from zio.control\_group;

**quit**; \* 2,187,738;

\* 1. study group 1, 2, 3 인원을 제외;

**data** tmp;

set zio.study\_group\_1\_final;

keep mother\_id;

**run**;

**data** tmp;

set tmp;

study\_group\_1 = **1**;

**run**;

**proc** **sort** data=tmp nodupkey;

by mother\_id;

**run**;

**data** tmp2;

set zio.study\_group\_2\_final;

keep mother\_id;

**run**;

**data** tmp2;

set tmp2;

study\_group\_2 = **1**;

**run**;

**proc** **sort** data=tmp2 nodupkey;

by mother\_id;

**run**;

**data** tmp3;

set zio.study\_group\_3\_final;

keep mother\_id;

**run**;

**data** tmp3;

set tmp3;

study\_group\_3 = **1**;

**run**;

**proc** **sort** data=tmp3 nodupkey;

by mother\_id;

**run**;

**proc** **sql**;

create table zio.control\_group as

select p.\*, q.\*

from zio.control\_group as p left join tmp as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

create table zio.control\_group as

select p.\*, q.\*

from zio.control\_group as p left join tmp2 as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

create table zio.control\_group as

select p.\*, q.\*

from zio.control\_group as p left join tmp3 as q

on p.mother\_id = q.mother\_id;

**quit**;

**data** zio.control\_group;

set zio.control\_group;

if study\_group\_1 = **1** or study\_group\_2 = **1** or study\_group\_3 = **1** then delete;

**run**;

**data** zio.control\_group;

set zio.control\_group;

drop study\_group\_1 study\_group\_2 study\_group\_3;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group;

**quit**; \* 1,561,282; \* (24.07.29 수정후) 1,561,107;

\* 2. 분만 전 CKD 코드 (송정인 선생님이 보내주신 것) 가 한번이라도 있었던 사람 제외;

**data** tmp;

set zio.t40\_0817\_m\_ckd;

keep indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**data** tmp; set tmp;

CKD = **1**;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**; \* 이렇게 sort 하면, id별 가장 먼저 시작한 mdcare\_strt\_dt 가 제일 위에 있음;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp; set tmp;

if indi\_dscm\_no = **.** then delete;

**run**;

**data** tmp; set tmp;

rename mdcare\_strt\_dt = CKD\_mdcare\_strt\_dt;

**run**;

\* change to datetime;

**data** tmp; set tmp;

CKD\_mdcare\_strt\_dt\_new = input(CKD\_mdcare\_strt\_dt, yymmdd10.);

format CKD\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**proc** **sql**;

create table zio.control\_group\_2 as

select p.\*, q.indi\_dscm\_no, q.CKD, q.CKD\_mdcare\_strt\_dt\_new

from zio.control\_group as p left join tmp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

\* CKD\_before\_bth;

**data** zio.control\_group\_2;

set zio.control\_group\_2;

if CKD\_mdcare\_strt\_dt\_new ^= **.** and CKD\_mdcare\_strt\_dt\_new <= bth\_date\_new then CKD\_before\_bth = **1**;

**run**;

\* drop ckd\_before\_bth;

**data** zio.control\_group\_2;

set zio.control\_group\_2;

if CKD\_before\_bth = **1** then delete;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_2;

**quit**; \* 1,551,458; \* (24.07.29 수정후) 1,550,313;

\* 3. 분만 이전 기간 전체 기간 or 5년 이내 기간 동안 V001, V003, V005 코드는 없으면서

일반 검진 결과에서 신기능 이상지표 (eGFR <60 or albuminuria 1+ 이상)가 없는 것이 1회 or 2회 연속으로 확인된 그룹;

\* 일단 5년 이내 기간을 먼저 확인;

\* 3-1. 분만 전 5년 이내 기간 동안 V001, V003, V005 코드가 찍힌 사람 제외;

\* 먼저 V001, V003, V005 뽑기;

**data** zio.t40\_0817\_m\_v001\_3\_5;

set zio.t40\_0817\_m;

if substr(spcf\_sym\_type, **1**, **4**) in ("V001", "V003", "V005");

**run**;

**data** zio.t40\_0817\_m\_v001\_3\_5;

set zio.t40\_0817\_m\_v001\_3\_5;

if indi\_dscm\_no = **.** then delete;

**run**;

\* child id, bth\_date 붙이기;

**data** tmp;

set zio.bfc\_0817\_c\_m;

keep mother\_id child\_id bth\_date;

**run**;

**proc** **sort** data=tmp nodupkey;

by mother\_id child\_id;

**run**;

**proc** **sql**;

create table zio.t40\_0817\_m\_v001\_3\_5 as

select p.\*, q.\*

from zio.t40\_0817\_m\_v001\_3\_5 as p left join tmp as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

**data** zio.t40\_0817\_m\_v001\_3\_5; set zio.t40\_0817\_m\_v001\_3\_5;

rename mdcare\_strt\_dt = v00135\_mdcare\_strt\_dt;

**run**;

\* change to datetime;

**data** zio.t40\_0817\_m\_v001\_3\_5; set zio.t40\_0817\_m\_v001\_3\_5;

v00135\_mdcare\_strt\_dt\_new = input(v00135\_mdcare\_strt\_dt, yymmdd10.);

format v00135\_mdcare\_strt\_dt\_new yymmdd10.;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

\* 분만일 - 5년 정의;

**data** zio.t40\_0817\_m\_v001\_3\_5;

set zio.t40\_0817\_m\_v001\_3\_5;

bth\_date\_before\_5year = intnx("month", bth\_date\_new, -**60**);

format bth\_date\_before\_5year yymmdd10.;

**run**;

\* 분만 전 5년 이내 기간 동안 V001, V003, V005 코드가 찍힌 mother-child pair 정의;

**data** zio.t40\_0817\_m\_v001\_3\_5;

set zio.t40\_0817\_m\_v001\_3\_5;

if v00135\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_before\_5year ^= **.** and bth\_date\_before\_5year <= v00135\_mdcare\_strt\_dt\_new <= bth\_date\_new then v00135\_5y = **1**;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_v001\_3\_5;

by mother\_id child\_id descending v00135\_5y;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_v001\_3\_5 nodupkey;

by mother\_id child\_id;

**run**;

**proc** **sql**;

create table zio.control\_group\_3 as

select p.\*, q.mother\_id, q.child\_id, q.v00135\_5y

from zio.control\_group\_2 as p left join zio.t40\_0817\_m\_v001\_3\_5 as q

on p.mother\_id = q.mother\_id;

**quit**;

\* drop if v00135\_5y = 1;

**data** zio.control\_group\_3;

set zio.control\_group\_3;

if v00135\_5y = **1** then delete;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_3;

**quit**; \* 1,551,458; \* (24.07.29 수정후) 1,550,291;

\* 3-2. 분만 전 5년 이내 일반 검진 결과에서 신기능 이상지표 (eGFR <60 or albuminuria 1+ 이상)가 없는 것이 1회 or 2회 연속으로 확인된 그룹;

\* 바꿔 말하면, eGFR >= 60, albuminuria 1+ 미만인 것이 1회 or 2회 연속으로 확인된 그룹;

**proc** **sort** data=zio.g1eq\_0817\_m\_target;

by indi\_dscm\_no child\_id exmd\_bz\_yyyy;

**run**;

**data** zio.g1eq\_0817\_m\_target\_controldef;

set zio.g1eq\_0817\_m\_target;

**run**;

\* change to datetime;

**data** zio.g1eq\_0817\_m\_target\_controldef;

set zio.g1eq\_0817\_m\_target\_controldef;

hme\_dt\_new = input(hme\_dt, yymmdd10.);

format hme\_dt\_new yymmdd10.;

**run**;

\* 분만일 - 5년 정의;

**data** zio.g1eq\_0817\_m\_target\_controldef;

set zio.g1eq\_0817\_m\_target\_controldef;

bth\_date\_before\_5year = intnx("month", bth\_date\_new, -**60**);

format bth\_date\_before\_5year yymmdd10.;

**run**;

\* 분만일 - 5년 <= 검진일 <= 분만일 인 검진만 남기기;

\* mother id, child id 별로 group by 해서;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_target\_controldef as

select \*, case when bth\_date\_before\_5year <= hme\_dt\_new <= bth\_date\_new then **1** end as exam\_within\_5y

from zio.g1eq\_0817\_m\_target\_controldef

group by indi\_dscm\_no, child\_id

order by indi\_dscm\_no, child\_id, exmd\_bz\_yyyy;

**quit**;

**data** zio.g1eq\_0817\_m\_target\_controldef;

set zio.g1eq\_0817\_m\_target\_controldef;

if exam\_within\_5y = **1**;

**run**;

\* 3-2-1. eGFR;

\* 필요한 변수만 떼와서 새로 생성;

**data** zio.g1eq\_0817\_m\_target\_cntrldf\_gfr;

set zio.g1eq\_0817\_m\_target\_controldef;

keep hme\_dt indi\_dscm\_no child\_id g1e\_gfr;

**run**;

**proc** **transpose** data=zio.g1eq\_0817\_m\_target\_cntrldf\_gfr out=zio.g1eq\_0817\_m\_trgt\_cntrldf\_gfr\_tf;

var g1e\_gfr;

by indi\_dscm\_no child\_id;

**run**;

**data** zio.g1eq\_0817\_m\_target\_cntrldf\_gfr;

set zio.g1eq\_0817\_m\_trgt\_cntrldf\_gfr\_tf;

if (col1 ^= **.** and col1 >= **60**) then gfr\_above60\_1 = **1**;

if (col2 ^= **.** and col2 >= **60**) then gfr\_above60\_1 = **1**;

if (col3 ^= **.** and col3 >= **60**) then gfr\_above60\_1 = **1**;

if (col4 ^= **.** and col4 >= **60**) then gfr\_above60\_1 = **1**;

if (col5 ^= **.** and col5 >= **60**) then gfr\_above60\_1 = **1**;

if (col6 ^= **.** and col6 >= **60**) then gfr\_above60\_1 = **1**;

if col1 ^= **.** and col2 ^= **.** and col1 >= **60** and col2 >= **60** then gfr\_above60\_2 = **1**;

if (col2 ^= **.** and col3 ^= **.** and col2 >= **60** and col3 >= **60**) then gfr\_above60\_2 = **1**;

if (col3 ^= **.** and col4 ^= **.** and col3 >= **60** and col4 >= **60**) then gfr\_above60\_2 = **1**;

if (col4 ^= **.** and col5 ^= **.** and col4 >= **60** and col5 >= **60**) then gfr\_above60\_2 = **1**;

if (col5 ^= **.** and col6 ^= **.** and col5 >= **60** and col6 >= **60**) then gfr\_above60\_2 = **1**;

**run**;

**proc** **freq** data=zio.g1eq\_0817\_m\_target\_cntrldf\_gfr;

table gfr\_above60\_1 gfr\_above60\_2;

**run**; \* 785,644; \* 218,474; \* (24.07.29 수정후) 785,644; \* 218,474;

\* 3-2-2. prturia;

**data** zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr;

set zio.g1eq\_0817\_m\_target\_controldef;

keep hme\_dt indi\_dscm\_no child\_id g1e\_urn\_prot;

**run**;

**proc** **transpose** data=zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr out=zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr\_tf;

var g1e\_urn\_prot;

by indi\_dscm\_no child\_id;

**run**;

**data** zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr;

set zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr\_tf;

if (col1 ^= **.** and col1 < **3**) then prt\_under3\_1 = **1**;

if (col2 ^= **.** and col2 < **3**) then prt\_under3\_1 = **1**;

if (col3 ^= **.** and col3 < **3**) then prt\_under3\_1 = **1**;

if (col4 ^= **.** and col4 < **3**) then prt\_under3\_1 = **1**;

if (col5 ^= **.** and col5 < **3**) then prt\_under3\_1 = **1**;

if (col6 ^= **.** and col6 < **3**) then prt\_under3\_1 = **1**;

if col1 ^= **.** and col2 ^= **.** and col1 < **3** and col2 < **3** then prt\_under3\_2 = **1**;

if (col2 ^= **.** and col3 ^= **.** and col2 < **3** and col3 < **3**) then prt\_under3\_2 = **1**;

if (col3 ^= **.** and col4 ^= **.** and col3 < **3** and col4 < **3**) then prt\_under3\_2 = **1**;

if (col4 ^= **.** and col5 ^= **.** and col4 < **3** and col5 < **3**) then prt\_under3\_2 = **1**;

if (col5 ^= **.** and col6 ^= **.** and col5 < **3** and col6 < **3**) then prt\_under3\_2 = **1**;

**run**;

**proc** **freq** data=zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr;

table prt\_under3\_1 prt\_under3\_2;

**run**; \* 1,189,861; \* 610,914; \* (24.07.29 수정후) 동일;

\* 연속 2회끼리 합치기;

**data** tmp;

set zio.g1eq\_0817\_m\_target\_cntrldf\_gfr;

keep indi\_dscm\_no child\_id;

if gfr\_above60\_2 = **1**;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr;

keep indi\_dscm\_no child\_id;

if prt\_under3\_2 = **1**;

**run**;

**data** zio.g1eq\_0817\_m\_target\_controldef\_2;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_target\_controldef\_2 nodupkey;

by indi\_dscm\_no child\_id;

**run**; \* 616,418; \* (24.07.29 수정후) 동일;

**data** zio.g1eq\_0817\_m\_target\_controldef\_2;

set zio.g1eq\_0817\_m\_target\_controldef\_2;

gfrprt\_2 = **1**;

**run**;

\* 연속 1회끼리 합치기;

**data** tmp;

set zio.g1eq\_0817\_m\_target\_cntrldf\_gfr;

keep indi\_dscm\_no child\_id;

if gfr\_above60\_1 = **1**;

**run**;

**data** tmp2;

set zio.g1eq\_0817\_m\_trgt\_cntrldf\_prtr;

keep indi\_dscm\_no child\_id;

if prt\_under3\_1 = **1**;

**run**;

**data** zio.g1eq\_0817\_m\_target\_controldef\_1;

set tmp tmp2;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_target\_controldef\_1 nodupkey;

by indi\_dscm\_no child\_id;

**run**; \* 1,196,240; \* (24.07.29 수정후) 동일;

**data** zio.g1eq\_0817\_m\_target\_controldef\_1;

set zio.g1eq\_0817\_m\_target\_controldef\_1;

gfrprt\_1 = **1**;

**run**;

\* 본 table에 join;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_trgt\_cntrldf\_final as

select p.\*, q.indi\_dscm\_no, q.child\_id, q.gfrprt\_1

from zio.g1eq\_0817\_m\_target\_controldef as p left join zio.g1eq\_0817\_m\_target\_controldef\_1 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no and p.child\_id = q.child\_id;

**quit**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_trgt\_cntrldf\_final as

select p.\*, q.indi\_dscm\_no, q.child\_id, q.gfrprt\_2

from zio.g1eq\_0817\_m\_trgt\_cntrldf\_final as p left join zio.g1eq\_0817\_m\_target\_controldef\_2 as q

on p.indi\_dscm\_no = q.indi\_dscm\_no and p.child\_id = q.child\_id;

**quit**;

\* control\_group\_3에 left join하여 final version 생성;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.child\_id, q.gfrprt\_1, q.gfrprt\_2

from zio.control\_group\_3 as p left join zio.g1eq\_0817\_m\_trgt\_cntrldf\_final as q

on p.mother\_id = q.indi\_dscm\_no and p.child\_id = q.child\_id;

**quit**;

\* 마지막 조건에서 연속 1회인 group 생성;

**data** zio.control\_group\_final\_1;

set zio.control\_group\_final;

if gfrprt\_1 = **1**;

**run**;

\* 마지막 조건에서 연속 2회인 group 생성;

**data** zio.control\_group\_final\_2;

set zio.control\_group\_final;

if gfrprt\_2 = **1**;

**run**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_final\_1;

**quit**; \* 887,122; \* (24.07.29 수정후) 885,993;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_final\_2;

**quit**; \* 488,209; \* (24.07.29 수정후) 487,478;

# 2-1. Table 1 by study group 1

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

**data** zio.study\_group\_1\_final;

set zio.bfc\_0817\_c\_m;

keep mother\_id mother\_byear child\_id byear sex\_type;

**run**;

**proc** **sort** data=zio.study\_group\_1\_final;

by mother\_id child\_id descending mother\_byear;

**run**;

**proc** **sort** data=zio.study\_group\_1\_final nodupkey;

by mother\_id child\_id mother\_byear;

**run**;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if mother\_byear = **.** then delete;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.mother\_id, q.\*

from zio.study\_group\_1\_1y2m as p left join zio.study\_group\_1\_final as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_1\_final;

**quit**; \* 187; \* (24.07.29 수정후) 200;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_1\_final;

**quit**; \* 227; \* (24.07.29 수정후) 242;

\* mother age;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

mother\_age = byear - mother\_byear;

**run**;

\* (24.01.24 나이 구분 수정);

\* (24.06.20) 나이 구분 최종 수정;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final;

table age\_group;

**run**;

**data** tmp;

set zio.study\_group\_1\_final;

if age\_group = **4**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* 아이 문진 붙이기;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.\*

from zio.study\_group\_1\_final as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_1\_final;

**quit**; \* 187; \* (24.07.29 수정후) 200;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_1\_final;

**quit**; \* 227; \* (24.07.29 수정후) 242;

\* bfc\_0817\_c\_m에도 붙여두기;

**proc** **sql**;

create table zio.bfc\_0817\_c\_m as

select p.\*, q.\*

from zio.bfc\_0817\_c\_m as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.bfc\_0817\_c\_m\_nodup as

select p.\*, q.\*

from zio.bfc\_0817\_c\_m\_nodup as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* mother comorbidity before pregnancy / pregnancy outcome define;

\* (24.01.16) 이하 대대적 수정 (study protocol 기준);

\* 다른 study group, control group에도 반영 필요;

\* t40에서 뽑기;

**data** zio.t40\_0817\_m\_comorbidity;

set zio.t40\_0817\_m;

**run**;

**data** zio.t40\_0817\_m\_comorbidity;

set zio.t40\_0817\_m\_comorbidity;

\*\*\* Comorbidity \*\*\*

\* Hypertension (고혈압);

if substr(mcex\_sick\_sym, **1**, **3**) in ("I10", "I11", "I12", "I13", "I15") or substr(mcex\_sick\_sym, **1**, **4**) in ("H350") then HTN = **1**; else HTN = **0**;

\* Diabetes mellitus (당뇨);

if substr(mcex\_sick\_sym, **1**, **3**) in ("E10", "E11", "E13", "E14") or substr(mcex\_sick\_sym, **1**, **4**) in ("T861") then DM = **1**; else DM = **0**;

\* Dyslipidemia (고지혈증);

if substr(mcex\_sick\_sym, **1**, **3**) in ("E75", "E76", "E77", "E78") then DSPDA = **1**; else DSPDA = **0**;

\* Myocardial infarction;

if substr(mcex\_sick\_sym, **1**, **3**) in ("I21", "I22") or substr(mcex\_sick\_sym, **1**, **4**) in ("I252") then MI = **1**; else MI = **0**;

\* Congestive heart failure;

if substr(mcex\_sick\_sym, **1**, **3**) in ("I50") then CHF = **1**; else CHF = **0**;

\* Cardiovascular disease, other than MI;

if substr(mcex\_sick\_sym, **1**, **3**) in ("I20", "I23", "I24", "I25") then CDO = **1**; else CDO = **0**;

\* Cerebrovascular disease, TIA;

if substr(mcex\_sick\_sym, **1**, **3**) in ("I60", "I61", "I62", "I63", "I64", "I65", "I66", "I67", "I68", "I69", "G46")

or substr(mcex\_sick\_sym, **1**, **4**) in ("G450", "G451", "G452", "G454", "G458", "G459") then TIA = **1**; else TIA = **0**;

\* Chronic liver disease;

if substr(mcex\_sick\_sym, **1**, **3**) in ("K73", "K74", "B18", "B19")

or substr(mcex\_sick\_sym, **1**, **4**) in ("K703", "K704", "K721") then CLD = **1**; else CLD = **0**;

\* COPD;

if substr(mcex\_sick\_sym, **1**, **3**) in ("J44") then COPD = **1**; else COPD = **0**;

\* Malignancy;

if substr(mcex\_sick\_sym, **1**, **3**) >= ("C00") and substr(mcex\_sick\_sym, **1**, **3**) <= ("C96") then Malignancy = **1**; else Malignancy = **0**; \* 이거 이렇게 했을 때 제대로 잡혔는지 확인 필요함;

\*\*\* Pregnancy outcomes \*\*\*

\* Gestational diabetes;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O244") then GDM = **1**; else GDM = **0**;

\* Pre-eclampsia;

if substr(mcex\_sick\_sym, **1**, **3**) in ("O14", "O15", "O11") then PE = **1**; else PE = **0**;

\* Caesarean section;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O820", "O821", "O822", "O828", "O829", "O842") or

substr(mcex\_sick\_sym, **1**, **6**) in ("O01602", "O01601", "O01603", "O01600") or substr(mcex\_sick\_sym, **1**, **5**) in ("H6113", "H6114", "H6116", "H6117", "H6124", "H6128",

"H6122") then CE = **1**; else CE = **0**; \*\*\* 여섯자리 어디서 나왔지?????;

\* Placental abruption;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O450", "O458", "O459") then PA = **1**; else PA = **0**;

\* Placenta previa;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O440", "O441") then PP = **1**; else PP = **0**;

\* Preterm birth;

if substr(mcex\_sick\_sym, **1**, **4**) in ("O601", "O603") then PB = **1**; else PB = **0**; \* 23.10.06 preterm birth icd10 정의 추가;

**run**; \* 여기까지는 상병진단기록이 id별 다수이므로, 절대 이 상태에서 drop dup 하면 안됨!;

\* Malignancy check;

**data** tmp;

set zio.t40\_0817\_m\_comorbidity;

if malignancy = **1**;

**run**; \* ok;

\* nulliparity - T30;

\* EDI 코드, 기존코드 모두 추가되어 있음;

**data** zio.t30\_0817\_m\_parity;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then NP = **1**; else NP = **0**;

**run**; \* done;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_parity

where np = **1**;

**quit**; \* 1,912,068; \* (24.07.29 수정 후) 동일;

\* count unique mother who has htn for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_comorbidity

where htn = **1**;

**quit**; \* 133,388; \* (24.07.29 수정 후) 188,079;

\* LGA, preterm birth - child t40 table;

**data** zio.t40\_0817\_c\_lgapb;

set zio.t40\_0817\_c;

if substr(mcex\_sick\_sym, **1**, **4**) in ("P081") then LGA = **1**; else LGA = **0**;

if substr(mcex\_sick\_sym, **1**, **4**) in ("P072", "P073") then PB = **1**; else PB = **0**;

**run**;

\* (24.02.19 추가) NICU admission - child t30 table;

**data** zio.t30\_0817\_c\_nicu;

set zio.t30\_0817\_c;

if cla\_cd = '02' and item\_cd = '03' then NICU = **1**; else NICU = **0**;

**run**;

\* (24.02.26) count unique child who has NICU admission, 2008-2017; ;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_c\_nicu

where NICU = **1**;

**quit**; \* 217,987; \* (24.07.29 수정 후) 동일;

\* (24.01.22 추가) HTN, DM, DSPDA는 약제 처방도 추가;

**data** zio.t30\_0817\_m\_comorbidity;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ('5647','1365','A016','2355','1327','1200','2231','2629','2168','A001','A015','A011','1927','A022','1749','1491','4236',

'A000','1961','2631','1744','4834','1975','1707','2447','2098','4601','A019','2023','1170','1370','4273','4274','4895','1250','1114','1079','4831','1168','1179','1802',

'4555','1789','1575','3562','1773','A003','2024','2017','2010','1880','1076','1803','1820','4865','1857','2471','1331','4832','4598','1140','1226','1151','4412','2628',

'2620','2630','4554','4470','A002','4891','4774','4407','3787','2621','2624','5562','4901','5136','2625','3789','2627','4869','2626','4237','4605','4403','5227','5226',

'5228','6294','6295','6296','5139','5027','5030','5234','5233','5232','4408','4979','4486','4487','6520','6519','6521','6542','5223','5222','5224','6329','6328','6330',

'5478','5479','6313','5480','4698','4699','6375','6376','6374','4992','4993','6531','6530','6529','3788','4426','3564','5236','5237','4700','5201','5200','5199','5198',

'5197','5006','3857','3858','4602','4660','5231','5230','5229','5477','5476','5475','5824','5005','5822','4958','4928','4929','5026','5268','5220','2623','4537','4536',

'5212','5213','5214','6448','4432','4433','2622','4471','4472','5117','5116','5115','1734','2310','4028','1147','A007','2350','2351','2424','2224','3859','1516','A017',

'1042','5016','2113','2219','1968','1330','5104','5152','1229','1409','1635','1845','4685','5209','4292','1708') then HTN = **1**; else HTN = **0**;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ('1006','1320','1654','1655','1656','1657','1658','1659','1677','1915','2490','3480','3795','4062','4174','4211','4302','4319','4434','4435','4527','4529','4612','4691',

'4718','4719','4742','4743','4861','4888','4889','4890','4972','4981','4986','5008','5011','5022','5023','5029','5070','5071','5137','5185','5186','5188','5196','5205',

'5206','5207','5236','5237','5238','5247','5255','5256','5259','5273','6133','6164','6191','6242','6273','6282','6303','6304','6305','6306','6319','6320','6321','6356',

'6357','6361','6372','6396','6398','6414','6418','6419','6420','6449','6450','6453','6484','6485','6486','6490','6491','6492','6493','6494','6495','6499','6500','6501',

'6538','6539','6540','6541','6557','6646','6647','6648','5121','6266','6397','6445','6667','6670','1183','1701','1702','1703','1704','1705','1706','1752','1753','2156',

'2157','4413','4618','4849','4887','5074','6267','6268') then DM = **1**; else DM = **0**;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ('1115','4723','4724','4725','5022','5189','5240','5241','5270','5271','6145','6338','6339','6346','6348','6718','6719','6720','6721','6738','6881','6882','6883','6884',

'6885','6904','6905','6906','6907','6940','7063','7064','7065','7066','7067','1624','1858','4709','6349','6350','6351','6352','6793','6994','6995','2166','5193','4540',

'5250','5251','5252','5253','5263','5264','5265','5269','6297','6298','6299','6300','6301','6302','6316','6317','6407','6408','6409','6441','6442','6532','6547','6548',

'6549','6550','6618','6619','6620','6621','6634','6639','6640','6641','6642','6643','6644','6646','6647','6648','6712','6713','6714','6715','6716','6717','6725','6726',

'6727','6728','6729','6737','6739','6740','6741','6770','6771','6773','6774','6775','6786','6795','6796','6797','6803','6830','6831','6832','6833','6834','6843','6844',

'6845','6846','6847','6868','6869','6912','6914','6915','6920','6921','6922','6923','6924','6925','6930','7011','7018','7019','7021','7022','2278','4710','4711','5078',

'4622','7028','1577','1949','5203','6423') then DSPDA = **1**; else DSPDA = **0**;

**run**;

\* (24.06.11) medication 추가 ;

\* Pregnancy\_HIRA\_codebook 기반으로 약제 정의;

**data** zio.t30\_0817\_m\_medication;

set zio.t30\_0817\_m;

\* HTN (고혈압);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("5647","1365","A016","2355","1327","1200","2231","2629","2168","A001","A015","A011","1927","A022","1749","1491","4236","A000","1961","2631",

"1744","4834","1975","1707","2447","2098","4601","A019","2023","1170","1370","4273","4274","4895","1250","1114","1079","4831","1168","1179","1802","4555","1789","1575","3562","1773",

"A003","2024","2017","2010","1880","1076","1803","1820","4865","1857","2471","1331","4832","4598","1140","1226","1151","4412","2628","2620","2630","4554","4470","A002","4891","4774",

"4407","3787","2621","2624","5562","4901","5136","2625","3789","2627","4869","2626","4237","4605","4403","5227","5226","5228","6294","6295","6296","5139","5027","5030","5234","5233",

"5232","4408","4979","4486","4487","6520","6519","6521","6542","5223","5222","5224","6329","6328","6330","5478","5479","6313","5480","4698","4699","6375","6376","6374","4992","4993",

"6531","6530","6529","3788","4426","3564","5236","5237","4700","5201","5200","5199","5198","5197""5006","3857","3858","4602","4660","5231","5230","5229","5477","5476","5475","5824",

"5005","5822","4958","4928","4929","5026","5268","5220","2623","4537","4536","5212","5213","5214","6448","4432","4433","2622","4471","4472","5117","5116","5115","1734","2310","4028",

"1147","A007","2350","2351","2424","2224","3859","1516","A017","1042","5016","2113","2219","1968","1330","5104","5152","1229","1409","1635","1845","4685","5209","4292","1708")

then HTN\_med = **1**; else HTN\_med = **0**;

\* DM (당뇨) ;

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("1006","1320","1654","1655","1656","1657","1658","1659","1677","1915","2490","3480","3795","4062","4174","4211","4302","4319",

"4434","4435","4527","4529","4612","4691","4718","4719","4742","4743","4861","4888","4889","4890","4972","4981","4986","5008","5011","5022","5023","5029","5070",

"5071","5137","5185","5186","5188","5196","5205","5206","5207","5236","5237","5238","5247","5255","5256","5259","5273","6133","6164","6191","6242","6273","6282",

"6303","6304","6305","6306","6319","6320","6321","6356","6357","6361","6372","6396","6398","6414","6418","6419","6420","6449","6450","6453","6484","6485","6486",

"6490","6491","6492","6493","6494","6495","6499","6500","6501","6538","6539","6540","6541","6557","6646","6647","6648","5121","6266","6397","6445","6667","6670",

"1183","1701","1702","1703","1704","1705","1706","1752","1753","2156","2157","4413","4618","4849","4887","5074","6267","6268")

then DM\_med = **1**; else DM\_med = **0**;

\* HLD (고지혈증);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ('1115','4723','4724','4725','5022','5189','5240','5241','5270','5271','6145','6338','6339','6346','6348','6718','6719','6720','6721','6738','6881','6882','6883','6884',

'6885','6904','6905','6906','6907','6940','7063','7064','7065','7066','7067','1624','1858','4709','6349','6350','6351','6352','6793','6994','6995','2166','5193','4540',

'5250','5251','5252','5253','5263','5264','5265','5269','6297','6298','6299','6300','6301','6302','6316','6317','6407','6408','6409','6441','6442','6532','6547','6548',

'6549','6550','6618','6619','6620','6621','6634','6639','6640','6641','6642','6643','6644','6646','6647','6648','6712','6713','6714','6715','6716','6717','6725','6726',

'6727','6728','6729','6737','6739','6740','6741','6770','6771','6773','6774','6775','6786','6795','6796','6797','6803','6830','6831','6832','6833','6834','6843','6844',

'6845','6846','6847','6868','6869','6912','6914','6915','6920','6921','6922','6923','6924','6925','6930','7011','7018','7019','7021','7022','2278','4710','4711','5078',

'4622','7028','1577','1949','5203','6423') then HLD\_med = **1**; else HLD\_med = **0**;

\* Diuretic (이뇨제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("1015","2621","4513","6628","6629","6630","6735","6736","6827","6828","6829","1638","1708","2625","2627","3564","3789","3857",

"3858","4237","4426","4432","4433","4605","4698","4699","4700","4869","5026","5136","5197","5198","5200","5220","5268","6635","6636","6637","6638","7075","7076",

"7077","1744","5562","2494","1129","2311","1069","2420") then Diuretic\_med = **1**; else Diuretic\_med = **0**;

\* Antidepressant (항우울제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("6131","2334","1075","1363","1737","1080","2034","4515","4281","1962","2296","2429","6285","1615","1625","2093","2270","4283",

"4748","6264","6876","6877","4955","3558","2475") then Antidepressant\_med = **1**; else Antidepressant\_med = **0**;

\* Antithrombotic (항혈전제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("2491","5114""6137","6170","6436","4658","1402","1521","1984","4501","3596","1686","1107","1110","4897","5179","6675","1369",

"4925","4952","4988","5015","5973","6159") then Antithrombotic\_med = **1**; else Antithrombotic\_med = **0**;

\* Dialysis\_related\_med (투석 관련 약제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("4557","5003","5043","1217","1218","1219","3026","3032","3879","4738","4802","4982","4983","5261","6944","6945","4871",

"5177","6703","5123","1046","1216","4680","4307","1050","5674","1378","1156") then Dialysis\_related\_med = **1**; else Dialysis\_related\_med = **0**;

\* Steroid (스테로이드);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("2969","1164","1165","1408","1419","1420","1422","1709","1933","1936","2170","2432","2433","1602")

then Steroid\_med = **1**; else Steroid\_med = **0**;

\* Immunosuppressants (면역억제제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("1392","1947","2342","1966","1124","1978","4514","4855","4856") then Immunosuppressants\_med = **1**; else Immunosuppressants\_med = **0**;

\* Antiviral\_med (이식, 항바이러스제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("4346","4595","1646","1029") then Antiviral\_med = **1**; else Antiviral\_med = **0**;

\* Transplant\_related\_med (기타 이식 관련 약제);

if substr(mcare\_div\_cd\_adj, **1**, **4**) in ("3594","1743","5204","1308","4226","4633","1699") then Transplant\_related\_med = **1**; else Transplant\_related\_med = **0**;

**run**;

\* count unique mother who has htn medication for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_medication

where htn\_med = **1**;

**quit**; \* 8,367;

\* count unique mother who has Antithrombotic\_med for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_medication

where Antithrombotic\_med = **1**;

**quit**; \* 3;

\* count unique mother who has Immunosuppressants\_med for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_medication

where Immunosuppressants\_med = **1**;

**quit**; \* 0;

\* count unique mother who has Antiviral\_med for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_medication

where Antiviral\_med = **1**;

**quit**; \* 0;

\* count unique mother who has Diuretic\_med for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t30\_0817\_m\_medication

where Diuretic\_med = **1**;

**quit**; \* 7,138;

\* 각 질병별 ppl list 만들기;

\* 1. HTN;

\* (24.01.22) HTN 정의 추가;

\* ICD-10 code: I10-I15, H350가 분만 전 3년 이내 2회 이상 진단된 환자 또는

고혈압 약제가 분만 전 3년 이내 2회 이상 처방된 환자;

\* (24.02.13) 정의 변경 - 진단은 빼고 약제로만;

\* (24.03.18) 정의 변경 - 진단과 약제를 모두 포함하되, 진단은 분만 전 3년 ~ 분만 전 1년의 기간 동안 2회 이상 진단된 환자로;

\* T40;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_comorbidity;

if htn = **1**;

**run**;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

keep indi\_dscm\_no mdcare\_strt\_dt htn;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_htn;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_htn as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_htn as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

\* 분만 전 1년 정의;

\* child bth date에서 1년 전으로;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_1y\_date = intnx("month", bth\_date\_new, -**12**);

format bth\_bf\_1y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 ~ 분만 전 1년 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_bf\_1y\_date then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_htn;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_htn nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_htn;

set zio.t40\_0817\_m\_htn;

rename mdcare\_strt\_dt = HTN\_mdcare\_strt\_dt;

**run**;

\* t30;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_comorbidity;

if htn = **1**;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

keep indi\_dscm\_no mdcare\_strt\_dt htn;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_htn;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_htn as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_htn as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_htn;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_htn nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

rename mdcare\_strt\_dt = HTN\_mdcare\_strt\_dt;

**run**;

**data** zio.t3040\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn zio.t40\_0817\_m\_htn;

**run**;

**proc** **sort** data=zio.t3040\_0817\_m\_htn nodupkey;

by indi\_dscm\_no;

**run**;

\* 최종 정의된 인원은 zio.t3040\_0817\_m\_htn;

\* 2. DM;

\* (24.01.22) DM 정의 추가;

\* ICD-10 code: E10, E11, E13, E14, T861가 분만 전 3년 이내 2회 이상 진단된 환자 또는

당뇨 약제가 분만 전 3년 이내 2번이상 처방된 환자;

\* (24.02.13) 정의 변경 - 진단은 빼고 약제로만;

\* (24.03.18) 정의 변경 - 진단과 약제를 모두 포함하되, 진단은 분만 전 3년 ~ 분만 전 1년의 기간 동안 2회 이상 진단된 환자로;

\* T40;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_comorbidity;

if dm = **1**;

**run**;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

keep indi\_dscm\_no mdcare\_strt\_dt dm;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_dm;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_dm as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_dm as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

\* 분만 전 1년 정의;

\* child bth date에서 1년 전으로;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_1y\_date = intnx("month", bth\_date\_new, -**12**);

format bth\_bf\_1y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 ~ 분만 전 1년 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_bf\_1y\_date then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_dm;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_dm nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_dm;

set zio.t40\_0817\_m\_dm;

rename mdcare\_strt\_dt = DM\_mdcare\_strt\_dt;

**run**;

\* t30;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_comorbidity;

if dm = **1**;

**run**;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

keep indi\_dscm\_no mdcare\_strt\_dt dm;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_dm;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_dm as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_dm as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_dm;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_dm nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm;

rename mdcare\_strt\_dt = DM\_mdcare\_strt\_dt;

**run**;

**data** zio.t3040\_0817\_m\_dm;

set zio.t30\_0817\_m\_dm zio.t40\_0817\_m\_dm;

**run**;

**proc** **sort** data=zio.t3040\_0817\_m\_dm nodupkey;

by indi\_dscm\_no;

**run**;

\* 최종 정의된 인원은 zio.t3040\_0817\_m\_dm;

\* 3. DSPDA;

\* (24.01.22) DSPDA 정의 추가;

\* ICD code: E75-E78가 분만 전 3년 이내 2회 이상 진단된 환자 또는

고지혈증 약제가 분만 전 3년 이내 2회 이상 처방된 환자;

\* (24.02.13) 정의 변경 - 진단은 빼고 약제로만;

\* (24.03.18) 정의 변경 - 진단과 약제를 모두 포함하되, 진단은 분만 전 3년 ~ 분만 전 1년의 기간 동안 2회 이상 진단된 환자로;

\* T40;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_comorbidity;

if dspda = **1**;

**run**;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

keep indi\_dscm\_no mdcare\_strt\_dt dspda;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_dspda;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_dspda as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_dspda as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

\* 분만 전 1년 정의;

\* child bth date에서 1년 전으로;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_1y\_date = intnx("month", bth\_date\_new, -**12**);

format bth\_bf\_1y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 ~ 분만 전 1년 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_bf\_1y\_date then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_dspda;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_dspda nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_dspda;

set zio.t40\_0817\_m\_dspda;

rename mdcare\_strt\_dt = DSPDA\_mdcare\_strt\_dt;

**run**;

\* t30;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_comorbidity;

if dspda = **1**;

**run**;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

keep indi\_dscm\_no mdcare\_strt\_dt dspda;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_dspda;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_dspda as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_dspda as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_dspda;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_dspda nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda;

rename mdcare\_strt\_dt = DSPDA\_mdcare\_strt\_dt;

**run**;

**data** zio.t3040\_0817\_m\_dspda;

set zio.t30\_0817\_m\_dspda zio.t40\_0817\_m\_dspda;

**run**;

**proc** **sort** data=zio.t3040\_0817\_m\_dspda nodupkey;

by indi\_dscm\_no;

**run**;

\* 최종 정의된 인원은 zio.t3040\_0817\_m\_dspda;

\* 4. MI;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_comorbidity;

if mi = **1**;

**run**;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

keep indi\_dscm\_no mdcare\_strt\_dt mi;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_mi;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_mi as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_mi as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_mi;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_mi nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_mi;

set zio.t40\_0817\_m\_mi;

rename mdcare\_strt\_dt = MI\_mdcare\_strt\_dt;

**run**;

\* 5. CHF;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_comorbidity;

if chf = **1**;

**run**;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

keep indi\_dscm\_no mdcare\_strt\_dt chf;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_chf;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_chf as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_chf as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_chf;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_chf nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_chf;

set zio.t40\_0817\_m\_chf;

rename mdcare\_strt\_dt = CHF\_mdcare\_strt\_dt;

**run**;

\* 6. CDO;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_comorbidity;

if cdo = **1**;

**run**;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

keep indi\_dscm\_no mdcare\_strt\_dt cdo;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_cdo;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_cdo as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_cdo as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_cdo;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_cdo nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_cdo;

set zio.t40\_0817\_m\_cdo;

rename mdcare\_strt\_dt = CDO\_mdcare\_strt\_dt;

**run**;

\* 7. TIA;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_comorbidity;

if tia = **1**;

**run**;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

keep indi\_dscm\_no mdcare\_strt\_dt tia;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_tia;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_tia as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_tia as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_tia;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_tia nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_tia;

set zio.t40\_0817\_m\_tia;

rename mdcare\_strt\_dt = TIA\_mdcare\_strt\_dt;

**run**;

\* 8. CLD;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_comorbidity;

if cld = **1**;

**run**;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

keep indi\_dscm\_no mdcare\_strt\_dt cld;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_cld;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_cld as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_cld as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_cld;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_cld nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_cld;

set zio.t40\_0817\_m\_cld;

rename mdcare\_strt\_dt = CLD\_mdcare\_strt\_dt;

**run**;

\* 9. COPD;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_comorbidity;

if copd = **1**;

**run**;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

keep indi\_dscm\_no mdcare\_strt\_dt copd;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_copd;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_copd as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_copd as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_copd;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_copd nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_copd;

set zio.t40\_0817\_m\_copd;

rename mdcare\_strt\_dt = COPD\_mdcare\_strt\_dt;

**run**;

\* 10. MALIGNANCY ;

\* 분만 전 3년 이내 2회 이상 진단자;

**data** zio.t40\_0817\_m\_Malignancy ;

set zio.t40\_0817\_m\_comorbidity;

if Malignancy = **1**;

**run**;

**data** zio.t40\_0817\_m\_Malignancy ;

set zio.t40\_0817\_m\_Malignancy ;

keep indi\_dscm\_no mdcare\_strt\_dt Malignancy;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_Malignancy;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_Malignancy as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_Malignancy as p left join zio.bfc\_0817\_c\_m as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_Malignancy;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_Malignancy nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

if group\_ >= **2**;

**run**;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_Malignancy;

set zio.t40\_0817\_m\_Malignancy;

rename mdcare\_strt\_dt = Malignancy\_mdcare\_strt\_dt;

**run**;

\* 11. GDM;

\* 23.09.11 GDM 정의 수정 - 임신 기간 중 3회 이상 찍힌 사람으로;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_comorbidity;

if gdm = **1**;

**run**;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_gdm;

keep indi\_dscm\_no mdcare\_strt\_dt gdm;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_gdm;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t40\_0817\_m\_gdm as

select p.\*, q.mother\_id, q.bth\_date

from zio.t40\_0817\_m\_gdm as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_gdm;

if indi\_dscm\_no = **.** then delete;

**run**;

\* 임신 기간 정의;

\* child bth date에서 10개월 전으로;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_gdm;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

start\_preg\_date = intnx("month", bth\_date\_new, -**10**);

format start\_preg\_date yymmdd10.;

**run**;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_gdm;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 임신 기간 중 gdm 진단 시, group\_ += 1;

**data** zio.t40\_0817\_m\_gdm;

set zio.t40\_0817\_m\_gdm;

by indi\_dscm\_no;

retain group\_ **1**;

if start\_preg\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t40\_0817\_m\_gdm;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_gdm nodupkey;

by indi\_dscm\_no;

**run**;

\* 24.07.12 GDM 정의 추가;

\* 3회/4회/5회 이상 진단자를 각각 정의;

**data** zio.t40\_0817\_m\_gdm\_3;

set zio.t40\_0817\_m\_gdm;

if group\_ >= **3**;

**run**;

**data** zio.t40\_0817\_m\_gdm\_3;

set zio.t40\_0817\_m\_gdm\_3;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_gdm\_3;

set zio.t40\_0817\_m\_gdm\_3;

rename mdcare\_strt\_dt = GDM\_mdcare\_strt\_dt;

**run**; \* 3회 GDM (기존)은 변수 이름을 그대로 GDM으로 유지;

**data** zio.t40\_0817\_m\_gdm\_4;

set zio.t40\_0817\_m\_gdm;

if group\_ >= **4**;

**run**;

**data** zio.t40\_0817\_m\_gdm\_4;

set zio.t40\_0817\_m\_gdm\_4;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_gdm\_4;

set zio.t40\_0817\_m\_gdm\_4;

rename mdcare\_strt\_dt = GDM4\_mdcare\_strt\_dt;

rename gdm = gdm4;

**run**; \* 4회 GDM은 변수 이름을 GDM4로 변경;

**data** zio.t40\_0817\_m\_gdm\_5;

set zio.t40\_0817\_m\_gdm;

if group\_ >= **5**;

**run**;

**data** zio.t40\_0817\_m\_gdm\_5;

set zio.t40\_0817\_m\_gdm\_5;

drop group\_;

**run**;

**data** zio.t40\_0817\_m\_gdm\_5;

set zio.t40\_0817\_m\_gdm\_5;

rename mdcare\_strt\_dt = GDM5\_mdcare\_strt\_dt;

rename gdm = gdm5;

**run**; \* 5회 GDM은 변수 이름을 GDM5로 변경;

**proc** **freq** data=zio.t40\_0817\_m\_gdm;

table group\_;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_m\_gdm

where bth\_date = "";

**quit**; \* ;

\* 12. PE;

**data** zio.t40\_0817\_m\_pe;

set zio.t40\_0817\_m\_comorbidity;

if pe = **1**;

**run**;

**data** zio.t40\_0817\_m\_pe;

set zio.t40\_0817\_m\_pe;

keep indi\_dscm\_no mdcare\_strt\_dt pe;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pe;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pe nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_pe;

set zio.t40\_0817\_m\_pe;

rename mdcare\_strt\_dt = PE\_mdcare\_strt\_dt;

**run**;

\* 13. CE;

**data** zio.t40\_0817\_m\_ce;

set zio.t40\_0817\_m\_comorbidity;

if ce = **1**;

**run**;

**data** zio.t40\_0817\_m\_ce;

set zio.t40\_0817\_m\_ce;

keep indi\_dscm\_no mdcare\_strt\_dt ce;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_ce;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_ce nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_ce;

set zio.t40\_0817\_m\_ce;

rename mdcare\_strt\_dt = CE\_mdcare\_strt\_dt;

**run**;

\* 14. PA;

**data** zio.t40\_0817\_m\_pa;

set zio.t40\_0817\_m\_comorbidity;

if pa = **1**;

**run**;

**data** zio.t40\_0817\_m\_pa;

set zio.t40\_0817\_m\_pa;

keep indi\_dscm\_no mdcare\_strt\_dt pa;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pa;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pa nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_pa;

set zio.t40\_0817\_m\_pa;

rename mdcare\_strt\_dt = PA\_mdcare\_strt\_dt;

**run**;

\* 15. PP;

**data** zio.t40\_0817\_m\_pp;

set zio.t40\_0817\_m\_comorbidity;

if pp = **1**;

**run**;

**data** zio.t40\_0817\_m\_pp;

set zio.t40\_0817\_m\_pp;

keep indi\_dscm\_no mdcare\_strt\_dt pp;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pp;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pp nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_pp;

set zio.t40\_0817\_m\_pp;

rename mdcare\_strt\_dt = PP\_mdcare\_strt\_dt;

**run**;

\* 16. NP;

**data** zio.t30\_0817\_m\_np;

set zio.t30\_0817\_m\_parity;

if np = **1**;

**run**;

**data** zio.t30\_0817\_m\_np;

set zio.t30\_0817\_m\_np;

keep indi\_dscm\_no mdcare\_strt\_dt np;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_np;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_np nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_np;

set zio.t30\_0817\_m\_np;

rename mdcare\_strt\_dt = NP\_mdcare\_strt\_dt;

**run**;

\* 17. PB; \* 이건 child table에서 정의했으므로, id가 child 임에 유의;

\* (24.07.22) preterm birth 산모 + 아이 코드 합집합으로 다시 변경;

\* child pb;

**data** zio.t40\_0817\_c\_pb;

set zio.t40\_0817\_c\_lgapb;

if pb = **1**;

**run**;

**data** zio.t40\_0817\_c\_pb;

set zio.t40\_0817\_c\_pb;

keep indi\_dscm\_no mdcare\_strt\_dt pb;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_pb;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_pb nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_pb;

set zio.t40\_0817\_c\_pb;

rename mdcare\_strt\_dt = PB\_child\_mdcare\_strt\_dt;

rename pb = pb\_child;

**run**;

\* mother pb;

**data** zio.t40\_0817\_m\_pb;

set zio.t40\_0817\_m\_comorbidity;

if pb = **1**;

**run**;

**data** zio.t40\_0817\_m\_pb;

set zio.t40\_0817\_m\_pb;

keep indi\_dscm\_no mdcare\_strt\_dt pb;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pb;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_m\_pb nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_m\_pb;

set zio.t40\_0817\_m\_pb;

rename mdcare\_strt\_dt = PB\_mom\_mdcare\_strt\_dt;

rename pb = pb\_mom;

**run**;

\* 18. LGA; \* 이건 child table에서 정의했으므로, id가 child 임에 유의;

**data** zio.t40\_0817\_c\_lga;

set zio.t40\_0817\_c\_lgapb;

if lga = **1**;

**run**;

**data** zio.t40\_0817\_c\_lga;

set zio.t40\_0817\_c\_lga;

keep indi\_dscm\_no mdcare\_strt\_dt lga;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_lga;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_lga nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_lga;

set zio.t40\_0817\_c\_lga;

rename mdcare\_strt\_dt = LGA\_mdcare\_strt\_dt;

**run**;

\* 19. NICU admission; \* 이건 child table에서 정의했으므로, id가 child 임에 유의;

**data** zio.t30\_0817\_c\_nicu;

set zio.t30\_0817\_c\_nicu;

if nicu = **1**;

**run**;

**data** zio.t30\_0817\_c\_nicu;

set zio.t30\_0817\_c\_nicu;

keep indi\_dscm\_no mdcare\_strt\_dt nicu;

**run**;

**proc** **sort** data=zio.t30\_0817\_c\_nicu;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t30\_0817\_c\_nicu nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_c\_nicu;

set zio.t30\_0817\_c\_nicu;

rename mdcare\_strt\_dt = NICU\_mdcare\_strt\_dt;

**run**;

\* 이하 medication, 24.06.12 추가;

\* 20. HTN\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_medication;

if HTN\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

keep indi\_dscm\_no mdcare\_strt\_dt HTN\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_htn\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_htn\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_htn\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 htn 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_htn\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_htn\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_htn\_med;

set zio.t30\_0817\_m\_htn\_med;

rename mdcare\_strt\_dt = HTN\_med\_mdcare\_strt\_dt;

**run**;

\* 21. DM\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_medication;

if DM\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

keep indi\_dscm\_no mdcare\_strt\_dt DM\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_DM\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_DM\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_DM\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 DM\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_DM\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_DM\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_DM\_med;

set zio.t30\_0817\_m\_DM\_med;

rename mdcare\_strt\_dt = DM\_med\_mdcare\_strt\_dt;

**run**;

\* 22. HLD\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_medication;

if HLD\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

keep indi\_dscm\_no mdcare\_strt\_dt HLD\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_HLD\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_HLD\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_HLD\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 HLD\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_HLD\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_HLD\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_HLD\_med;

set zio.t30\_0817\_m\_HLD\_med;

rename mdcare\_strt\_dt = HLD\_med\_mdcare\_strt\_dt;

**run**;

\* 23. Diuretic\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_medication;

if Diuretic\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Diuretic\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Diuretic\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Diuretic\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Diuretic\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Diuretic\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Diuretic\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Diuretic\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Diuretic\_med;

set zio.t30\_0817\_m\_Diuretic\_med;

rename mdcare\_strt\_dt = Diuretic\_med\_mdcare\_strt\_dt;

**run**;

\* 24. Antidepressant\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_medication;

if Antidepressant\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Antidepressant\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antidepressant\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Antidepressant\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Antidepressant\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Antidepressant\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Antidepressant\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antidepressant\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Antidepressant\_med;

set zio.t30\_0817\_m\_Antidepressant\_med;

rename mdcare\_strt\_dt = Antidepre\_med\_mdcare\_strt\_dt;

**run**;

\* 25. Antithrombotic\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_medication;

if Antithrombotic\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Antithrombotic\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antithrombotic\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Antithrombotic\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Antithrombotic\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Antithrombotic\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Antithrombotic\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antithrombotic\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Antithrombotic\_med;

set zio.t30\_0817\_m\_Antithrombotic\_med;

rename mdcare\_strt\_dt = Antithrom\_med\_mdcare\_strt\_dt;

**run**;

\* 26. Dialysis\_related\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_medication;

if Dialysis\_related\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Dialysis\_related\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Dialysis\_related\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Dialysis\_related\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Dialysis\_related\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Dialysis\_related\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Dialysis\_related\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Dialysis\_related\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Dialysis\_related\_med;

set zio.t30\_0817\_m\_Dialysis\_related\_med;

rename mdcare\_strt\_dt = Dialysis\_med\_mdcare\_strt\_dt;

**run**;

\* 27. Steroid\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_medication;

if Steroid\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Steroid\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Steroid\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Steroid\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Steroid\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Steroid\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Steroid\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Steroid\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Steroid\_med;

set zio.t30\_0817\_m\_Steroid\_med;

rename mdcare\_strt\_dt = Steroid\_med\_mdcare\_strt\_dt;

**run**;

\* 28. Immunosuppressants\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_medication;

if Immunosuppressants\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Immunosuppressants\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Immuno\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Immuno\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Immuno\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Immunosuppressants\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Immuno\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Immuno\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Immuno\_med;

set zio.t30\_0817\_m\_Immuno\_med;

rename mdcare\_strt\_dt = Immuno\_med\_mdcare\_strt\_dt;

**run**;

\* 29. Antiviral\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_medication;

if Antiviral\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Antiviral\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antiviral\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Antiviral\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Antiviral\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Antiviral\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Antiviral\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Antiviral\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Antiviral\_med;

set zio.t30\_0817\_m\_Antiviral\_med;

rename mdcare\_strt\_dt = Antiviral\_med\_mdcare\_strt\_dt;

**run**;

\* 30. Transplant\_related\_med;

\* 분만 전 3년 이내 2회 이상 약물 복용자;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_medication;

if Transplant\_related\_med = **1**;

**run**;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

keep indi\_dscm\_no mdcare\_strt\_dt Transplant\_related\_med;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Transplant\_med;

by indi\_dscm\_no mdcare\_strt\_dt;

**run**;

\* child birth year 붙이기;

**proc** **sql**;

create table zio.t30\_0817\_m\_Transplant\_med as

select p.\*, q.mother\_id, q.bth\_date

from zio.t30\_0817\_m\_Transplant\_med as p left join zio.bfc\_0817\_c\_m\_nodup as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

\* 분만 전 3년 이내 정의;

\* child bth date에서 3년 전으로;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

mdcare\_strt\_dt\_new = INPUT(mdcare\_strt\_dt, yymmdd10.);

format mdcare\_strt\_dt\_new yymmdd10.;

**run**;

\* 분만 전 3년 이내 Transplant\_related\_med 진단 시, group\_ += 1;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

by indi\_dscm\_no;

retain group\_ **1**;

if bth\_bf\_3y\_date <= mdcare\_strt\_dt\_new <= bth\_date\_new then group\_ = group\_ + **1**;

if first.indi\_dscm\_no then group\_ = **1**;

**run**;

\* id, group 기준으로 역순 정렬하고 nodupkey 하면 맨 위에 최대 진단 횟수만 남음;

**proc** **sort** data=zio.t30\_0817\_m\_Transplant\_med;

by indi\_dscm\_no descending group\_;

**run**;

**proc** **sort** data=zio.t30\_0817\_m\_Transplant\_med nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

if group\_ >= **2**;

**run**;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

drop group\_;

**run**;

**data** zio.t30\_0817\_m\_Transplant\_med;

set zio.t30\_0817\_m\_Transplant\_med;

rename mdcare\_strt\_dt = Trans\_med\_mdcare\_strt\_dt;

**run**;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_gdm\_3 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm4, q.gdm4\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_gdm\_4 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm4 추가;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm5, q.gdm5\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_gdm\_5 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm5 추가;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_child, q.pb\_child\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_mom, q.pb\_mom\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_m\_pb as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.22 mother pb 다시 추가;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if gdm4 = **.** then gdm4 = **0**;

if gdm5 = **.** then gdm5 = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if pb\_mom = **.** then pb\_mom = **0**;

if pb\_child = **.** then pb\_child = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

/\*\* 출산 이전 발생한 질병으로 new 변수 생성; \*/

/\*\* dm, htn만; \*/

/\*data zio.study\_group\_1\_final; \*/

/\*set zio.study\_group\_1\_final; \*/

/\*if dm\_mdcare\_strt\_dt ^= . then dm\_year = substr(dm\_mdcare\_strt\_dt, 1, 4); else dm\_year = .; \*/

/\*if dm = 1 and dm\_year < byear then dm\_before\_preg = 1; \*/

/\*else dm\_before\_preg = 0; \*/

/\*run; \*/

/\*data zio.study\_group\_1\_final; \*/

/\*set zio.study\_group\_1\_final; \*/

/\*if htn\_mdcare\_strt\_dt ^= . then htn\_year = substr(htn\_mdcare\_strt\_dt, 1, 4); else htn\_year = .; \*/

/\*if htn = 1 and htn\_year < byear then htn\_before\_preg = 1; \*/

/\*else htn\_before\_preg = 0; \*/

/\*run;\*/

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

drop gdm\_before\_preg gdm\_year;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_1\_final

where bth\_wght = **.**;

**quit**; \* 13;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

\* (24.06.21) LBW null은 살려놓고, model 3에서만 해당인원 삭제하는 것으로 결정;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

\* (24.07.22) pb\_child = 1 or pb\_mom = 1 or 분만 예정일 조건 해당일 경우 pb\_real = 1로 정의;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if pb\_child = **1** or pb\_mom = **1** or (bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21**) then pb\_real = **1**; else pb\_real = **0**;

**run**; \* (24.07.22) or 조건으로 변경됨;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if gdm = **1** and dm = **1** then gdm = **0**;

if gdm4 = **1** and dm = **1** then gdm4 = **0**;

if gdm5 = **1** and dm = **1** then gdm5 = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.study\_group\_1\_final;

set zio.study\_group\_1\_final;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.study\_group\_1\_final n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final;

table htn;

**proc** **freq** data=zio.study\_group\_1\_final;

table dm;

**proc** **freq** data=zio.study\_group\_1\_final;

table dspda;

**proc** **freq** data=zio.study\_group\_1\_final;

table mi;

**proc** **freq** data=zio.study\_group\_1\_final;

table chf;

**proc** **freq** data=zio.study\_group\_1\_final;

table cdo;

**proc** **freq** data=zio.study\_group\_1\_final;

table tia;

**proc** **freq** data=zio.study\_group\_1\_final;

table cld;

**proc** **freq** data=zio.study\_group\_1\_final;

table copd;

**proc** **freq** data=zio.study\_group\_1\_final;

table Malignancy;

**proc** **freq** data=zio.study\_group\_1\_final;

table gdm;

**proc** **freq** data=zio.study\_group\_1\_final;

table gdm4;

**proc** **freq** data=zio.study\_group\_1\_final;

table gdm5;

**proc** **freq** data=zio.study\_group\_1\_final;

table pe;

**proc** **freq** data=zio.study\_group\_1\_final;

table ce;

**proc** **freq** data=zio.study\_group\_1\_final;

table pa;

**proc** **freq** data=zio.study\_group\_1\_final;

table pp;

**proc** **freq** data=zio.study\_group\_1\_final;

table np;

**proc** **freq** data=zio.study\_group\_1\_final;

table low\_bth\_wght;

**proc** **freq** data=zio.study\_group\_1\_final;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.study\_group\_1\_final;

table pb\_mom; \* preterm birth;

**proc** **freq** data=zio.study\_group\_1\_final;

table pb\_child; \* preterm birth;

**proc** **freq** data=zio.study\_group\_1\_final;

table lga;

**proc** **freq** data=zio.study\_group\_1\_final;

table sex\_type;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

**data** tmp;

set zio.study\_group\_1\_final;

if HTN\_med = **1**;

**run**;

\* child comorbidity define;

\* t40에서 뽑기;

**data** zio.t40\_0817\_c\_comorbidity;

set zio.t40\_0817\_c;

**run**;

**data** zio.t40\_0817\_c\_comorbidity;

set zio.t40\_0817\_c\_comorbidity;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q00", "Q01", "Q02", "Q03", "Q04", "Q05", "Q06", "Q07") then Q00\_07 = **1**; else Q00\_07 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q10", "Q11", "Q12", "Q13", "Q14", "Q15", "Q16", "Q17", "Q18") then Q10\_18 = **1**; else Q10\_18 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q20", "Q21", "Q22", "Q23", "Q24", "Q25", "Q26", "Q27", "Q28") then Q20\_28 = **1**; else Q20\_28 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q30", "Q31", "Q32", "Q33", "Q34") then Q30\_34 = **1**; else Q30\_34 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q35", "Q36", "Q37") then Q35\_37 = **1**; else Q35\_37 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q38", "Q39", "Q40", "Q41", "Q42", "Q43", "Q44", "Q45") then Q38\_45 = **1**; else Q38\_45 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q50", "Q51", "Q52", "Q53", "Q54", "Q55", "Q56") then Q50\_56 = **1**; else Q50\_56 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q60", "Q61", "Q62", "Q63", "Q64") then Q60\_64 = **1**; else Q60\_64 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q65", "Q66", "Q67", "Q68", "Q69", "Q70", "Q71", "Q72", "Q73", "Q74", "Q75", "Q76", "Q77", "Q78", "Q79") then Q65\_79 = **1**; else Q65\_79 = **0**;

if substr(mcex\_sick\_sym, **1**, **3**) in ("Q80", "Q81", "Q82", "Q83", "Q84", "Q85", "Q86", "Q87", "Q88", "Q89") then Q80\_89 = **1**; else Q80\_89 = **0**;

**run**; \* 여기까지는 상병진단기록이 id별 다수이므로, 절대 이 상태에서 drop dup 하면 안됨!;

\* count unique child who has Q00\_07 for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_c\_comorbidity

where Q00\_07 = **1**;

**quit**; \* 13,795; \* (24.07.31 수정후) 19,369;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_c\_comorbidity

where Q10\_18 = **1**;

**quit**; \* 69,851; \* (24.07.31 수정후) 99,503;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_1\_final 에 left join;

\* (24.07.23) mdcare\_strt\_dt까지 같이 가져오도록 코드 수정 중;

\* q00\_07;

**data** zio.t40\_0817\_c\_q00\_07;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q00\_07 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q00\_07;

by indi\_dscm\_no descending q00\_07;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q00\_07 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q00\_07;

set zio.t40\_0817\_c\_q00\_07;

rename mdcare\_strt\_dt = q00\_07\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07, q.q00\_07\_mdcare\_strt\_dt

from zio.study\_group\_1\_final as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q00\_07;

**run**; \* (24.07.31 수정후) 3 (1.24%);

\* q10\_18;

**data** zio.t40\_0817\_c\_q10\_18;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q10\_18 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q10\_18;

by indi\_dscm\_no descending q10\_18;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q10\_18 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q10\_18;

set zio.t40\_0817\_c\_q10\_18;

rename mdcare\_strt\_dt = q10\_18\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18, q.q10\_18\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q10\_18;

**run**; \* (24.07.31 수정후) 10 (4.13%);

\* q20\_28;

**data** zio.t40\_0817\_c\_q20\_28;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q20\_28 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q20\_28;

by indi\_dscm\_no descending q20\_28;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q20\_28 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q20\_28;

set zio.t40\_0817\_c\_q20\_28;

rename mdcare\_strt\_dt = q20\_28\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28, q.q20\_28\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q20\_28;

**run**; \* (24.07.31 수정후) 39 (16.12%);

\* q30\_34;

**data** zio.t40\_0817\_c\_q30\_34;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q30\_34 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q30\_34;

by indi\_dscm\_no descending q30\_34;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q30\_34 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q30\_34;

set zio.t40\_0817\_c\_q30\_34;

rename mdcare\_strt\_dt = q30\_34\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34, q.q30\_34\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q30\_34;

**run**; \* (24.07.31 수정후) 5 (2.07%);

\* q35\_37;

**data** zio.t40\_0817\_c\_q35\_37;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q35\_37 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q35\_37;

by indi\_dscm\_no descending q35\_37;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q35\_37 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q35\_37;

set zio.t40\_0817\_c\_q35\_37;

rename mdcare\_strt\_dt = q35\_37\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37, q.q35\_37\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q35\_37;

**run**; \* (24.07.31 수정후) 2 (0.83%);

\* q38\_45;

**data** zio.t40\_0817\_c\_q38\_45;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q38\_45 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q38\_45;

by indi\_dscm\_no descending q38\_45;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q38\_45 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q38\_45;

set zio.t40\_0817\_c\_q38\_45;

rename mdcare\_strt\_dt = q38\_45\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45, q.q38\_45\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q38\_45;

**run**; \* (24.07.31 수정후) 12 (4.96%);

\* q50\_56; \* 24.07.31 여기서부터 돌려놓고 감;

**data** zio.t40\_0817\_c\_q50\_56;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q50\_56 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q50\_56;

by indi\_dscm\_no descending q50\_56;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q50\_56 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q50\_56;

set zio.t40\_0817\_c\_q50\_56;

rename mdcare\_strt\_dt = q50\_56\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56, q.q50\_56\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q50\_56;

**run**; \* (24.07.31 수정후) 3 (1.24%);

\* q60\_64;

**data** zio.t40\_0817\_c\_q60\_64;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q60\_64 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q60\_64;

by indi\_dscm\_no descending q60\_64;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q60\_64 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q60\_64;

set zio.t40\_0817\_c\_q60\_64;

rename mdcare\_strt\_dt = q60\_64\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64, q.q60\_64\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q60\_64;

**run**; \* (24.07.31 수정후) 4 (1.65%);

\* q65\_79;

**data** zio.t40\_0817\_c\_q65\_79;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q65\_79 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q65\_79;

by indi\_dscm\_no descending q65\_79;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q65\_79 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q65\_79;

set zio.t40\_0817\_c\_q65\_79;

rename mdcare\_strt\_dt = q65\_79\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79, q.q65\_79\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q65\_79;

**run**; \* (24.07.31 수정후) 12 (4.96%);

\* q80\_89;

**data** zio.t40\_0817\_c\_q80\_89;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no q80\_89 mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q80\_89;

by indi\_dscm\_no descending q80\_89;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_q80\_89 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_q80\_89;

set zio.t40\_0817\_c\_q80\_89;

rename mdcare\_strt\_dt = q80\_89\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89, q.q80\_89\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table q80\_89;

**run**; \* (24.07.31 수정후) 3 (1.24%)

\* define any congenital malformation;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm;

table any\_cm;

**run**; \* (24.07.31 수정후) 67 (27.69%)

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_1\_final\_cm;

set zio.study\_group\_1\_final\_cm;

if q00\_07 = **0** then q00\_07\_mdcare\_strt\_dt = "";

if q10\_18 = **0** then q10\_18\_mdcare\_strt\_dt = "";

if q20\_28 = **0** then q20\_28\_mdcare\_strt\_dt = "";

if q30\_34 = **0** then q30\_34\_mdcare\_strt\_dt = "";

if q35\_37 = **0** then q35\_37\_mdcare\_strt\_dt = "";

if q38\_45 = **0** then q38\_45\_mdcare\_strt\_dt = "";

if q50\_56 = **0** then q50\_56\_mdcare\_strt\_dt = "";

if q60\_64 = **0** then q60\_64\_mdcare\_strt\_dt = "";

if q65\_79 = **0** then q65\_79\_mdcare\_strt\_dt = "";

if q80\_89 = **0** then q80\_89\_mdcare\_strt\_dt = "";

**run**;

\* 수도권/비수도권, 소득분위, insurance 붙이기;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc as

select p.\*, q.indi\_dscm\_no, q.gaibja\_type, q.calc\_ctrb\_vtile\_fd, q.rvsn\_addr\_cd

from zio.study\_group\_1\_final\_cm as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.std\_yyyy; \* 일단 이렇게 붙여보고, na check;

**quit**;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.study\_group\_1\_final\_cm\_bfc;

set zio.study\_group\_1\_final\_cm\_bfc;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.study\_group\_1\_final\_cm\_bfc;

set zio.study\_group\_1\_final\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.study\_group\_1\_final\_cm\_bfc;

set zio.study\_group\_1\_final\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* (24.01.03) Table 1 2차 정의 start \*\*\*

/\*\* Neurodevelopmental outcome; \*/ \* 24.07.31 코드 전체 돌리기 위해 임시로 주석, 이후 해제 필요!!;

/\*\* t40에서 뽑기; \*/

/\*data zio.t40\_0817\_c\_comorbidity; \*/

/\*set zio.t40\_0817\_c; \*/

/\*run; \*/

/\*\*/

/\*data zio.t40\_0817\_c\_comorbidity; \*/

/\*set zio.t40\_0817\_c\_comorbidity; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q00", "Q01", "Q02", "Q03", "Q04", "Q05", "Q06", "Q07") then Q00\_07 = 1; else Q00\_07 = 0; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q10", "Q11", "Q12", "Q13", "Q14", "Q15", "Q16", "Q17", "Q18") then Q10\_18 = 1; else Q10\_18 = 0; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q20", "Q21", "Q22", "Q23", "Q24", "Q25", "Q26", "Q27", "Q28") then Q20\_28 = 1; else Q20\_28 = 0; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q30", "Q31", "Q32", "Q33", "Q34") then Q30\_34 = 1; else Q30\_34 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q35", "Q36", "Q37") then Q35\_37 = 1; else Q35\_37 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q38", "Q39", "Q40", "Q41", "Q42", "Q43", "Q44", "Q45") then Q38\_45 = 1; else Q38\_45 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q50", "Q51", "Q52", "Q53", "Q54", "Q55", "Q56") then Q50\_56 = 1; else Q50\_56 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q60", "Q61", "Q62", "Q63", "Q64") then Q60\_64 = 1; else Q60\_64 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q65", "Q66", "Q67", "Q68", "Q69", "Q70", "Q71", "Q72", "Q73", "Q74", "Q75", "Q76", "Q77", "Q78", "Q79") then Q65\_79 = 1; else Q65\_79 = 0;\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("Q80", "Q81", "Q82", "Q83", "Q84", "Q85", "Q86", "Q87", "Q88", "Q89") then Q80\_89 = 1; else Q80\_89 = 0; \*/

/\*\*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("F82", "R26", "R27") then MDD = 1; else MDD = 0; \* Motor developmental delay ; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("F70", "F71", "F72", "F73", "F78", "F79", "F83") \*/

/\*OR substr(mcex\_sick\_sym, 1, 4) in ("F800", "F801", "F802", "F808", "F809", "F810", "F811", "F812", "F813", "F818", "F819", "R480", "R488") then CDD = 1; else CDD = 0; \* Cognitive developmental delay ; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("F88", "F89") \*/

/\*OR substr(mcex\_sick\_sym, 1, 4) in ("F840", "F841", "F844", "F845", "F848", "F849", "F900", "F901", "F902", "F908", "F909") then ADHD = 1; else ADHD = 0; \* Autisum spectrum disorders/ADHD ; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("R25") OR substr(mcex\_sick\_sym, 1, 4) in ("F950", "F951", "F952", "F958", "F959", "F984", "F950", "F951", "F952", "F958", "F959", "F984", "F985", "F985")\*/

/\*then TICS = 1; else TICS = 0; \* Tics/stereotypic behavior ; \*/

/\*if substr(mcex\_sick\_sym, 1, 3) in ("G40", "G41", "R56") OR substr(mcex\_sick\_sym, 1, 4) in ("G253") then EFS = 1; else EFS = 0; \* Epileptic/febrile seizures ; \*/

/\*run; \* 여기까지는 상병진단기록이 id별 다수이므로, 절대 이 상태에서 drop dup 하면 안됨!; \*/

\* count unique child who has MDD for example, 2008-2017;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.t40\_0817\_c\_comorbidity

where MDD = **1**;

**quit**; \* 42,392; \* (24.07.31 수정후) 61,951;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_1\_final\_cm\_bfc 에 left join;

\* MDD;

**data** zio.t40\_0817\_c\_mdd;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no MDD mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_mdd;

by indi\_dscm\_no descending MDD;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_mdd nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_mdd;

set zio.t40\_0817\_c\_mdd;

rename mdcare\_strt\_dt = mdd\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD, q.mdd\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table MDD;

**run**; \* (24.07.31 수정후) 7 (2.89%)

\* CDD;

**data** zio.t40\_0817\_c\_cdd;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no CDD mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_cdd;

by indi\_dscm\_no descending CDD;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_cdd nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_cdd;

set zio.t40\_0817\_c\_cdd;

rename mdcare\_strt\_dt = cdd\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD, q.cdd\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table CDD;

**run**; \* (24.07.31 수정후) 3 (1.24%)

\* ADHD;

**data** zio.t40\_0817\_c\_adhd;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no ADHD mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_adhd;

by indi\_dscm\_no descending ADHD;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_adhd nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_adhd;

set zio.t40\_0817\_c\_adhd;

rename mdcare\_strt\_dt = adhd\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD, q.adhd\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table ADHD;

**run**; \* (24.07.31 수정후) 7 (2.89%)

\* Tics;

**data** zio.t40\_0817\_c\_tics;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no Tics mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_tics;

by indi\_dscm\_no descending Tics;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_tics nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_tics;

set zio.t40\_0817\_c\_tics;

rename mdcare\_strt\_dt = tics\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics, q.tics\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table Tics;

**run**; \* (24.07.31 수정후) 3 (1.24%)

\* EFS;

**data** zio.t40\_0817\_c\_efs;

set zio.t40\_0817\_c\_comorbidity;

keep indi\_dscm\_no EFS mdcare\_strt\_dt;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_efs;

by indi\_dscm\_no descending EFS;

**run**;

**proc** **sort** data=zio.t40\_0817\_c\_efs nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.t40\_0817\_c\_efs;

set zio.t40\_0817\_c\_efs;

rename mdcare\_strt\_dt = efs\_mdcare\_strt\_dt;

**run**;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS, q.efs\_mdcare\_strt\_dt

from zio.study\_group\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table EFS;

**run**; \* (24.07.31 수정후) 41 (16.94%)

\* define any Neurodevelopmental outcome;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_2;

table any\_neruo;

**run**; \* (24.07.31 수정후) 52 (21.49%)

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_1\_final\_cm\_bfc\_2;

if mdd = **0** then mdd\_mdcare\_strt\_dt = "";

if cdd = **0** then cdd\_mdcare\_strt\_dt = "";

if adhd = **0** then adhd\_mdcare\_strt\_dt = "";

if tics = **0** then tics\_mdcare\_strt\_dt = "";

if efs = **0** then efs\_mdcare\_strt\_dt = "";

**run**;

\*\*\* (24.01.25) Table 1 3차 정의 start \*\*\*

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB -> 삭제;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* target군만 남긴 mother exam table 가져오기;

**data** zio.g1eq\_0817\_m\_bthclsexm;

set zio.g1eq\_0817\_m\_target;

**run**;

**proc** **means** data=zio.g1eq\_0817\_m\_bthclsexm n nmiss mean median min max std;

**run**;

\* 검진일자 change to datetime;

\* (24.05.10) 검진일자 변수를 exmdrst\_judg\_dt에서 hme\_dt로 수정 (잘못되었었음);

**data** zio.g1eq\_0817\_m\_bthclsexm;

set zio.g1eq\_0817\_m\_bthclsexm;

hme\_dt\_new = input(hme\_dt, yymmdd10.);

format hme\_dt\_new yymmdd10.;

**run**;

\* birth date과 검진일자의 차이를 계산;

**data** zio.g1eq\_0817\_m\_bthclsexm;

set zio.g1eq\_0817\_m\_bthclsexm;

find\_closest\_exam = bth\_date\_new - hme\_dt\_new;

**run**;

\* 출산 이후의 검진 (차이가 음수) 은 모두 삭제;

**data** zio.g1eq\_0817\_m\_bthclsexm;

set zio.g1eq\_0817\_m\_bthclsexm;

if find\_closest\_exam < **0** and find\_closest\_exam ^= **.** then delete;

**run**;

\* find\_closest\_exam로 sort하고 mother-child id로 drop dup 하면 bth date랑 가장 가까운 검진 하나만 남음;

**proc** **sort** data=zio.g1eq\_0817\_m\_bthclsexm;

by mother\_id child\_id find\_closest\_exam;

**run**;

**proc** **sort** data=zio.g1eq\_0817\_m\_bthclsexm nodupkey;

by mother\_id child\_id;

**run**;

\* study\_group\_1\_final\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_1\_final\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.study\_group\_1\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table g1e\_urn\_prot;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

/\*data zio.study\_group\_1\_final\_cm\_bfc\_exm; \*/

/\*set zio.study\_group\_1\_final\_cm\_bfc\_exm; \*/

/\*if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = 1)\*/

/\*or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = 2) \*/

/\*or q\_smk\_yn = 2 or q\_smk\_yn = 3 then smoke = 1; else smoke = 0; \*/

/\*run; \*/

/\*proc freq data=zio.study\_group\_1\_final\_cm\_bfc\_exm; \*/

/\*table smoke; \*/

/\*run; \*/

\* dth (child) 정의;

**proc** **sql**;

create table zio.study\_group\_1\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_1\_final\_cm\_bfc\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.study\_group\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table bmi\_category;

**run**;

\* 여기까지, exam까지 붙여놓은 study group 1 final dataset은 zio.study\_group\_1\_final\_cm\_bfc\_exm;

# 2-2. Table 1 by study group 2

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* 12/08 회의 - 최종 study group 2 인원으로 확정;

\* 혈액/복막투석 1개월 이상자 중, 분만일 - 3년 <= 한번이라도 투석 <= 분만일 - 2개월인 52명으로;

\* 24.01.16 다태아 임신건 제외하고 재정의 - 49명;

\* 혈액투석 3y2m\_1m;

**data** tmp;

set zio.t3040\_0817\_m\_ESRF\_bld\_trgt\_kt;

keep indi\_dscm\_no;

if blood\_3y2m\_1m = **1**;

**run**;

\* 복막투석 3y2m\_1m;

**data** tmp2;

set zio.t3040\_0817\_m\_ESRF\_stmch\_trgt\_kt;

keep indi\_dscm\_no;

if stomache\_3y2m\_1m = **1**;

**run**;

**data** tmp3;

set tmp tmp2;

**run**;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from tmp3;

**quit**; \* 49; \* (24.07.29 수정후) 51;

**proc** **sort** data=tmp3 nodupkey;

by indi\_dscm\_no;

**run**;

**data** zio.study\_group\_2\_final;

set zio.bfc\_0817\_c\_m;

keep mother\_id mother\_byear child\_id byear sex\_type;

**run**;

**proc** **sort** data=zio.study\_group\_2\_final;

by mother\_id child\_id descending mother\_byear;

**run**;

**proc** **sort** data=zio.study\_group\_2\_final nodupkey;

by mother\_id child\_id mother\_byear;

**run**;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if mother\_byear = **.** then delete;

**run**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.\*

from tmp3 as p left join zio.study\_group\_2\_final as q

on p.indi\_dscm\_no = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_2\_final;

**quit**; \* 49; \* (24.07.29 수정후) 51;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_2\_final;

**quit**; \* 63; \* (24.07.29 수정후) 69;

\* mother age;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

mother\_age = byear - mother\_byear;

**run**;

\* (24.01.24 나이 구분 수정);

\* (24.06.20) 나이 구분 최종 수정;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final;

table age\_group;

**run**;

**data** tmp;

set zio.study\_group\_2\_final;

if age\_group = **4**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* 아이 문진 붙이기;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.\*

from zio.study\_group\_2\_final as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_2\_final;

**quit**; \* 49; \* (24.07.29 수정후) 51;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_2\_final;

**quit**; \* 63; \* (24.07.29 수정후) 69;

\* mother comorbidity define;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_gdm\_3 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.gdm4, q.gdm4\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_gdm\_4 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm4 추가;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.gdm5, q.gdm5\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_gdm\_5 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm5 추가;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_child, q.pb\_child\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_mom, q.pb\_mom\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_m\_pb as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.22 mother pb 다시 추가;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_2\_final as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if gdm4 = **.** then gdm4 = **0**;

if gdm5 = **.** then gdm5 = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if pb\_mom = **.** then pb\_mom = **0**;

if pb\_child = **.** then pb\_child = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_2\_final

where bth\_wght = **.**;

**quit**; \* 3;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

\* (24.07.22) pb\_child = 1 or pb\_mom = 1 or 분만 예정일 조건 해당일 경우 pb\_real = 1로 정의;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if pb\_child = **1** or pb\_mom = **1** or (bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21**) then pb\_real = **1**; else pb\_real = **0**;

**run**; \* (24.07.22) or 조건으로 변경됨;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if gdm = **1** and dm = **1** then gdm = **0**;

if gdm4 = **1** and dm = **1** then gdm4 = **0**;

if gdm5 = **1** and dm = **1** then gdm5 = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.study\_group\_2\_final;

set zio.study\_group\_2\_final;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.study\_group\_2\_final n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final;

table htn;

**proc** **freq** data=zio.study\_group\_2\_final;

table dm;

**proc** **freq** data=zio.study\_group\_2\_final;

table dspda;

**proc** **freq** data=zio.study\_group\_2\_final;

table mi;

**proc** **freq** data=zio.study\_group\_2\_final;

table chf;

**proc** **freq** data=zio.study\_group\_2\_final;

table cdo;

**proc** **freq** data=zio.study\_group\_2\_final;

table tia;

**proc** **freq** data=zio.study\_group\_2\_final;

table cld;

**proc** **freq** data=zio.study\_group\_2\_final;

table copd;

**proc** **freq** data=zio.study\_group\_2\_final;

table Malignancy;

**proc** **freq** data=zio.study\_group\_2\_final;

table gdm;

**proc** **freq** data=zio.study\_group\_2\_final;

table gdm4;

**proc** **freq** data=zio.study\_group\_2\_final;

table gdm5;

**proc** **freq** data=zio.study\_group\_2\_final;

table pe;

**proc** **freq** data=zio.study\_group\_2\_final;

table ce;

**proc** **freq** data=zio.study\_group\_2\_final;

table pa;

**proc** **freq** data=zio.study\_group\_2\_final;

table pp;

**proc** **freq** data=zio.study\_group\_2\_final;

table np;

**proc** **freq** data=zio.study\_group\_2\_final;

table low\_bth\_wght;

**proc** **freq** data=zio.study\_group\_2\_final;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.study\_group\_2\_final;

table lga;

**proc** **freq** data=zio.study\_group\_2\_final;

table sex\_type;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

\* child comorbidity define;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_2\_final 에 left join;

\* q00\_07;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07, q.q00\_07\_mdcare\_strt\_dt

from zio.study\_group\_2\_final as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q00\_07;

**run**; \* 0 (0.00%);

\* q10\_18;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18, q.q10\_18\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q10\_18;

**run**; \* 2 (3.17%);

\* q20\_28;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28, q.q20\_28\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q20\_28;

**run**; \* 10 (15.87%);

\* q30\_34;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34, q.q30\_34\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q30\_34;

**run**; \* 1 (1.59%);

\* q35\_37;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37, q.q35\_37\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q35\_37;

**run**; \* 0 (0.00%);

\* q38\_45;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45, q.q38\_45\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q38\_45;

**run**; \* 3 (4.76%);

\* q50\_56;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56, q.q50\_56\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q50\_56;

**run**; \* 1 (1.59%);

\* q60\_64;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64, q.q60\_64\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q60\_64;

**run**; \* 0 (0.00%);

\* q65\_79;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79, q.q65\_79\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q65\_79;

**run**; \* 1 (1.59%);

\* q80\_89;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89, q.q80\_89\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table q80\_89;

**run**; \* 1 (1.59%);

\* define any congenital malformation;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm;

table any\_cm;

**run**; \* 14 (22.22%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_2\_final\_cm;

set zio.study\_group\_2\_final\_cm;

if q00\_07 = **0** then q00\_07\_mdcare\_strt\_dt = "";

if q10\_18 = **0** then q10\_18\_mdcare\_strt\_dt = "";

if q20\_28 = **0** then q20\_28\_mdcare\_strt\_dt = "";

if q30\_34 = **0** then q30\_34\_mdcare\_strt\_dt = "";

if q35\_37 = **0** then q35\_37\_mdcare\_strt\_dt = "";

if q38\_45 = **0** then q38\_45\_mdcare\_strt\_dt = "";

if q50\_56 = **0** then q50\_56\_mdcare\_strt\_dt = "";

if q60\_64 = **0** then q60\_64\_mdcare\_strt\_dt = "";

if q65\_79 = **0** then q65\_79\_mdcare\_strt\_dt = "";

if q80\_89 = **0** then q80\_89\_mdcare\_strt\_dt = "";

**run**;

\* 수도권/비수도권, 소득분위, insurance 붙이기;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc as

select p.\*, q.indi\_dscm\_no, q.gaibja\_type, q.calc\_ctrb\_vtile\_fd, q.rvsn\_addr\_cd

from zio.study\_group\_2\_final\_cm as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.std\_yyyy; \* 일단 이렇게 붙여보고, na check;

**quit**;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.study\_group\_2\_final\_cm\_bfc;

set zio.study\_group\_2\_final\_cm\_bfc;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.study\_group\_2\_final\_cm\_bfc;

set zio.study\_group\_2\_final\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.study\_group\_2\_final\_cm\_bfc;

set zio.study\_group\_2\_final\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* (24.01.04) Table 1 2차 정의 start \*\*\*

\* Neurodevelopmental outcome;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_2\_final\_cm\_bfc 에 left join;

\* MDD;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD, q.mdd\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table MDD;

**run**; \* 2 (3.17%);

\* CDD;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD, q.cdd\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table CDD;

**run**; \* 4 (6.35%);

\* ADHD;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD, q.adhd\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table ADHD;

**run**; \* 3 (4.76%);

\* Tics;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics, q.tics\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table Tics;

**run**; \* 0 (0.00%);

\* EFS;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS, q.efs\_mdcare\_strt\_dt

from zio.study\_group\_2\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table EFS;

**run**; \* 15 (23.81%);

\* define any Neurodevelopmental outcome;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_2;

table any\_neruo;

**run**; \* 20 (31.75%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_2\_final\_cm\_bfc\_2;

set zio.study\_group\_2\_final\_cm\_bfc\_2;

if mdd = **0** then mdd\_mdcare\_strt\_dt = "";

if cdd = **0** then cdd\_mdcare\_strt\_dt = "";

if adhd = **0** then adhd\_mdcare\_strt\_dt = "";

if tics = **0** then tics\_mdcare\_strt\_dt = "";

if efs = **0** then efs\_mdcare\_strt\_dt = "";

**run**;

\*\*\* (24.01.25) Table 1 3차 정의 start \*\*\*

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* study group 1 - table 1에서 정의해둔 g1eq\_0817\_m\_bthclsexm를 study\_group\_2\_final\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_2\_final\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.study\_group\_2\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table g1e\_urn\_prot;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

/\*data zio.study\_group\_2\_final\_cm\_bfc\_exm; \*/

/\*set zio.study\_group\_2\_final\_cm\_bfc\_exm; \*/

/\*if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = 1)\*/

/\*or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = 2) \*/

/\*or q\_smk\_yn = 2 or q\_smk\_yn = 3 then smoke = 1; else smoke = 0; \*/

/\*run; \*/

/\*\*/

/\*proc freq data=zio.study\_group\_2\_final\_cm\_bfc\_exm; \*/

/\*table smoke; \*/

/\*run; \*/

\* dth (child) 정의;

**proc** **sql**;

create table zio.study\_group\_2\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_2\_final\_cm\_bfc\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_exm;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.study\_group\_2\_final\_cm\_bfc\_exm;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table bmi\_category;

**run**;

# 2-3. Table 1 by study group 3

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* 12/08 meeting 최종 study group 3 결정;

\* {(eGFR < 60 2회 OR albuminuria 1+ 이상 2회) within 분만 전 5년} or CKD code 진단 within 분만 전 5년;

\* (24.01.16) 다태아 제거됨;

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD\_fnl;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

**data** zio.study\_group\_3\_final;

set zio.bfc\_0817\_c\_m;

keep mother\_id mother\_byear child\_id byear sex\_type;

**run**;

**proc** **sort** data=zio.study\_group\_3\_final;

by mother\_id child\_id descending mother\_byear;

**run**;

**proc** **sort** data=zio.study\_group\_3\_final nodupkey;

by mother\_id child\_id mother\_byear;

**run**;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if mother\_byear = **.** then delete;

**run**;

**data** tmp;

set zio.g1eq\_0817\_m\_trgt\_cp\_exp\_CKD\_fnl;

keep mother\_id;

**run**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.\*

from tmp as p left join zio.study\_group\_3\_final as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_3\_final;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_final;

**quit**; \* 69,518; \* (24.07.29 수정후) 69,648;

\* mother age;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

mother\_age = byear - mother\_byear;

**run**;

\* (24.01.24 나이 구분 수정);

\* (24.06.20) 나이 구분 최종 수정;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final;

table age\_group;

**run**;

**data** tmp;

set zio.study\_group\_3\_final;

if age\_group = **4**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* 아이 문진 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.\*

from zio.study\_group\_3\_final as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_3\_final;

**quit**; \* 46,930; \* (24.07.29 수정후) 47,099;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_final;

**quit**; \* 69,518; \* (24.07.29 수정후) 69,648;

\* mother comorbidity define;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_gdm\_3 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.gdm4, q.gdm4\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_gdm\_4 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm4 추가;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.gdm5, q.gdm5\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_gdm\_5 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm5 추가;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_child, q.pb\_child\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_mom, q.pb\_mom\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_m\_pb as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.22 mother pb 다시 추가;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_final as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if gdm4 = **.** then gdm4 = **0**;

if gdm5 = **.** then gdm5 = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if pb\_mom = **.** then pb\_mom = **0**;

if pb\_child = **.** then pb\_child = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_final

where bth\_wght = **.**;

**quit**; \* 2200;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

\* (24.07.22) pb\_child = 1 or pb\_mom = 1 or 분만 예정일 조건 해당일 경우 pb\_real = 1로 정의;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if pb\_child = **1** or pb\_mom = **1** or (bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21**) then pb\_real = **1**; else pb\_real = **0**;

**run**; \* (24.07.22) or 조건으로 변경됨;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if gdm = **1** and dm = **1** then gdm = **0**;

if gdm4 = **1** and dm = **1** then gdm4 = **0**;

if gdm5 = **1** and dm = **1** then gdm5 = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.study\_group\_3\_final;

set zio.study\_group\_3\_final;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.study\_group\_3\_final n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final;

table htn;

**proc** **freq** data=zio.study\_group\_3\_final;

table dm;

**proc** **freq** data=zio.study\_group\_3\_final;

table dspda;

**proc** **freq** data=zio.study\_group\_3\_final;

table mi;

**proc** **freq** data=zio.study\_group\_3\_final;

table chf;

**proc** **freq** data=zio.study\_group\_3\_final;

table cdo;

**proc** **freq** data=zio.study\_group\_3\_final;

table tia;

**proc** **freq** data=zio.study\_group\_3\_final;

table cld;

**proc** **freq** data=zio.study\_group\_3\_final;

table copd;

**proc** **freq** data=zio.study\_group\_3\_final;

table Malignancy;

**proc** **freq** data=zio.study\_group\_3\_final;

table gdm;

**proc** **freq** data=zio.study\_group\_3\_final;

table gdm4;

**proc** **freq** data=zio.study\_group\_3\_final;

table gdm5;

**proc** **freq** data=zio.study\_group\_3\_final;

table pe;

**proc** **freq** data=zio.study\_group\_3\_final;

table ce;

**proc** **freq** data=zio.study\_group\_3\_final;

table pa;

**proc** **freq** data=zio.study\_group\_3\_final;

table pp;

**proc** **freq** data=zio.study\_group\_3\_final;

table np;

**proc** **freq** data=zio.study\_group\_3\_final;

table low\_bth\_wght;

**proc** **freq** data=zio.study\_group\_3\_final;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.study\_group\_3\_final;

table lga;

**proc** **freq** data=zio.study\_group\_3\_final;

table sex\_type;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

\* child comorbidity define;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_3\_final 에 left join;

\* q00\_07;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07, q.q00\_07\_mdcare\_strt\_dt

from zio.study\_group\_3\_final as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q00\_07;

**run**; \* 304 (0.44%);

\* q10\_18;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18, q.q10\_18\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q10\_18;

**run**; \* 1,385 (1.99%);

\* q20\_28;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28, q.q20\_28\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q20\_28;

**run**; \* 2,190 (3.15%);

\* q30\_34;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34, q.q30\_34\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q30\_34;

**run**; \* 194 (0.28%);

\* q35\_37;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37, q.q35\_37\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q35\_37;

**run**; \* 116 (0.17%);

\* q38\_45;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45, q.q38\_45\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q38\_45;

**run**; \* 3,430 (4.93%);

\* q50\_56;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56, q.q50\_56\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q50\_56;

**run**; \* 807 (1.16%);

\* q60\_64;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64, q.q60\_64\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q60\_64;

**run**; \* 684 (0.98%);

\* q65\_79;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79, q.q65\_79\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q65\_79;

**run**; \* 2,236 (3.22%);

\* q80\_89;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89, q.q80\_89\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table q80\_89;

**run**; \* 456 (0.66%);

\* define any congenital malformation;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm;

table any\_cm;

**run**; \* 10,235 (14.72%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_3\_final\_cm;

set zio.study\_group\_3\_final\_cm;

if q00\_07 = **0** then q00\_07\_mdcare\_strt\_dt = "";

if q10\_18 = **0** then q10\_18\_mdcare\_strt\_dt = "";

if q20\_28 = **0** then q20\_28\_mdcare\_strt\_dt = "";

if q30\_34 = **0** then q30\_34\_mdcare\_strt\_dt = "";

if q35\_37 = **0** then q35\_37\_mdcare\_strt\_dt = "";

if q38\_45 = **0** then q38\_45\_mdcare\_strt\_dt = "";

if q50\_56 = **0** then q50\_56\_mdcare\_strt\_dt = "";

if q60\_64 = **0** then q60\_64\_mdcare\_strt\_dt = "";

if q65\_79 = **0** then q65\_79\_mdcare\_strt\_dt = "";

if q80\_89 = **0** then q80\_89\_mdcare\_strt\_dt = "";

**run**;

\* 수도권/비수도권, 소득분위, insurance 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc as

select p.\*, q.indi\_dscm\_no, q.gaibja\_type, q.calc\_ctrb\_vtile\_fd, q.rvsn\_addr\_cd

from zio.study\_group\_3\_final\_cm as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.std\_yyyy; \* 일단 이렇게 붙여보고, na check;

**quit**;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.study\_group\_3\_final\_cm\_bfc;

set zio.study\_group\_3\_final\_cm\_bfc;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.study\_group\_3\_final\_cm\_bfc;

set zio.study\_group\_3\_final\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.study\_group\_3\_final\_cm\_bfc;

set zio.study\_group\_3\_final\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* (24.01.04) Table 1 2차 정의 start \*\*\*

\* Neurodevelopmental outcome;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_3\_final\_cm\_bfc 에 left join;

\* MDD;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD, q.mdd\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table MDD;

**run**; \* 774 (1.11%);

\* CDD;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD, q.cdd\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table CDD;

**run**; \* 637 (0.92%);

\* ADHD;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD, q.adhd\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table ADHD;

**run**; \* 384 (0.55%);

\* Tics;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics, q.tics\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table Tics;

**run**; \* 270 (0.39%);

\* EFS;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS, q.efs\_mdcare\_strt\_dt

from zio.study\_group\_3\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table EFS;

**run**; \* 6,214 (8.94%);

\* define any Neurodevelopmental outcome;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_2;

table any\_neruo;

**run**; \* 7,576 (10.90%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_3\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_final\_cm\_bfc\_2;

if mdd = **0** then mdd\_mdcare\_strt\_dt = "";

if cdd = **0** then cdd\_mdcare\_strt\_dt = "";

if adhd = **0** then adhd\_mdcare\_strt\_dt = "";

if tics = **0** then tics\_mdcare\_strt\_dt = "";

if efs = **0** then efs\_mdcare\_strt\_dt = "";

**run**;

\*\*\* (24.01.25) Table 1 3차 정의 start \*\*\*

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* study group 1 - table 1에서 정의해둔 g1eq\_0817\_m\_bthclsexm를 study\_group\_3\_final\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_3\_final\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.study\_group\_3\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table g1e\_urn\_prot;

**run**;

\* ckd stage 정의;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

if g1e\_gfr ^= **.** and g1e\_gfr >= **30** and g1e\_gfr < **60** then ckd\_stage = **3**;

if g1e\_gfr ^= **.** and g1e\_gfr >= **15** and g1e\_gfr < **30** then ckd\_stage = **4**;

if g1e\_gfr ^= **.** and g1e\_gfr < **15** then ckd\_stage = **5**;

if g1e\_gfr ^= **.** and g1e\_gfr >= **60** then ckd\_stage = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table ckd\_stage;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

/\*data zio.study\_group\_3\_final\_cm\_bfc\_exm; \*/

/\*set zio.study\_group\_3\_final\_cm\_bfc\_exm; \*/

/\*if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = 1)\*/

/\*or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = 2) \*/

/\*or q\_smk\_yn = 2 or q\_smk\_yn = 3 then smoke = 1; else smoke = 0; \*/

/\*run; \*/

/\*\*/

/\*proc freq data=zio.study\_group\_3\_final\_cm\_bfc\_exm; \*/

/\*table smoke; \*/

/\*run; \*/

\* dth (child) 정의;

**proc** **sql**;

create table zio.study\_group\_3\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_3\_final\_cm\_bfc\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table bmi\_category;

**run**;

# 2-3-1. Table 1 by study group 3-1

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* 12/08 meeting 최종 study group 3 결정;

\* {(eGFR < 60 2회 OR albuminuria 1+ 이상 2회) within 분만 전 5년} or CKD code 진단 within 분만 전 5년;

\* (24.01.16) 다태아 제거됨;

\* (24.02.27) CKD 진단코드로 정의된 인원 제외한 study group 3-1 정의 ({(eGFR < 60 2회 OR albuminuria 1+ 이상 2회) within 분만 전 5년});

**proc** **sql**;

select count(unique indi\_dscm\_no)

from zio.g1eq\_0817\_m\_trgt\_CKDfnl\_2;

**quit**; \* 1,439; \* (24.07.29 수정후) 1,436;

**data** zio.study\_group\_3\_1\_final;

set zio.bfc\_0817\_c\_m;

keep mother\_id mother\_byear child\_id byear sex\_type;

**run**;

**proc** **sort** data=zio.study\_group\_3\_1\_final;

by mother\_id child\_id descending mother\_byear;

**run**;

**proc** **sort** data=zio.study\_group\_3\_1\_final nodupkey;

by mother\_id child\_id mother\_byear;

**run**;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if mother\_byear = **.** then delete;

**run**;

**data** tmp;

set zio.g1eq\_0817\_m\_trgt\_CKDfnl\_2;

keep mother\_id;

**run**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.\*

from tmp as p left join zio.study\_group\_3\_1\_final as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_3\_1\_final;

**quit**; \* 1,439; \* (24.07.29 수정후) 1,436;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_1\_final;

**quit**; \* 2,037; \* (24.07.29 수정후) 2,033;

\* mother age;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

mother\_age = byear - mother\_byear;

**run**;

\* (24.01.24 나이 구분 수정);

\* (24.06.20) 나이 구분 최종 수정;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table age\_group;

**run**;

**data** tmp;

set zio.study\_group\_3\_1\_final;

if age\_group = **4**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* 아이 문진 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.\*

from zio.study\_group\_3\_1\_final as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.study\_group\_3\_1\_final;

**quit**; \* 1,439; \* (24.08.01 수정후) 1,436;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_1\_final;

**quit**; \* 2,037; \* (24.08.01 수정후) 2,033;

\* mother comorbidity define;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_gdm\_3 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm4, q.gdm4\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_gdm\_4 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm4 추가;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.gdm5, q.gdm5\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_gdm\_5 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm5 추가;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_child, q.pb\_child\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_mom, q.pb\_mom\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_m\_pb as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.22 mother pb 다시 추가;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if gdm4 = **.** then gdm4 = **0**;

if gdm5 = **.** then gdm5 = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if pb\_mom = **.** then pb\_mom = **0**;

if pb\_child = **.** then pb\_child = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.study\_group\_3\_1\_final

where bth\_wght = **.**;

**quit**; \* 79;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

\* (24.07.22) pb\_child = 1 or pb\_mom = 1 or 분만 예정일 조건 해당일 경우 pb\_real = 1로 정의;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if pb\_child = **1** or pb\_mom = **1** or (bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21**) then pb\_real = **1**; else pb\_real = **0**;

**run**; \* (24.07.22) or 조건으로 변경됨;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if gdm = **1** and dm = **1** then gdm = **0**;

if gdm4 = **1** and dm = **1** then gdm4 = **0**;

if gdm5 = **1** and dm = **1** then gdm5 = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.study\_group\_3\_1\_final;

set zio.study\_group\_3\_1\_final;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.study\_group\_3\_1\_final n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table htn;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table dm;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table dspda;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table mi;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table chf;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table cdo;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table tia;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table cld;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table copd;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table Malignancy;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table gdm;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table gdm4;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table gdm5;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table pe;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table ce;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table pa;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table pp;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table np;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table low\_bth\_wght;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table lga;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table sex\_type;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

\* child comorbidity define;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_3\_1\_final 에 left join;

\* q00\_07;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07, q.q00\_07\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q00\_07;

**run**; \* 5 (0.25%);

\* q10\_18;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18, q.q10\_18\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q10\_18;

**run**; \* 25 (1.23%);

\* q20\_28;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28, q.q20\_28\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q20\_28;

**run**; \* 61 (2.99%);

\* q30\_34;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34, q.q30\_34\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q30\_34;

**run**; \* 3 (0.15%);

\* q35\_37;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37, q.q35\_37\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q35\_37;

**run**; \* 4 (0.20%);

\* q38\_45;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45, q.q38\_45\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q38\_45;

**run**; \* 84 (4.12%);

\* q50\_56;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56, q.q50\_56\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q50\_56;

**run**; \* 13 (0.64%);

\* q60\_64;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64, q.q60\_64\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q60\_64;

**run**; \* 13 (0.64%);

\* q65\_79;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79, q.q65\_79\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q65\_79;

**run**; \* 49 (2.41%);

\* q80\_89;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89, q.q80\_89\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table q80\_89;

**run**; \* 11 (0.54%);

\* define any congenital malformation;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm;

table any\_cm;

**run**; \* 236 (11.59%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_3\_1\_final\_cm;

set zio.study\_group\_3\_1\_final\_cm;

if q00\_07 = **0** then q00\_07\_mdcare\_strt\_dt = "";

if q10\_18 = **0** then q10\_18\_mdcare\_strt\_dt = "";

if q20\_28 = **0** then q20\_28\_mdcare\_strt\_dt = "";

if q30\_34 = **0** then q30\_34\_mdcare\_strt\_dt = "";

if q35\_37 = **0** then q35\_37\_mdcare\_strt\_dt = "";

if q38\_45 = **0** then q38\_45\_mdcare\_strt\_dt = "";

if q50\_56 = **0** then q50\_56\_mdcare\_strt\_dt = "";

if q60\_64 = **0** then q60\_64\_mdcare\_strt\_dt = "";

if q65\_79 = **0** then q65\_79\_mdcare\_strt\_dt = "";

if q80\_89 = **0** then q80\_89\_mdcare\_strt\_dt = "";

**run**;

\* 수도권/비수도권, 소득분위, insurance 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc as

select p.\*, q.indi\_dscm\_no, q.gaibja\_type, q.calc\_ctrb\_vtile\_fd, q.rvsn\_addr\_cd

from zio.study\_group\_3\_1\_final\_cm as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.std\_yyyy; \* 일단 이렇게 붙여보고, na check;

**quit**;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc;

set zio.study\_group\_3\_1\_final\_cm\_bfc;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc;

set zio.study\_group\_3\_1\_final\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc;

set zio.study\_group\_3\_1\_final\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* (24.01.04) Table 1 2차 정의 start \*\*\*

\* Neurodevelopmental outcome;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 study\_group\_3\_1\_final\_cm\_bfc 에 left join;

\* MDD;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD, q.mdd\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table MDD;

**run**; \* 9 (0.44%);

\* CDD;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD, q.cdd\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table CDD;

**run**; \* 9 (0.44%);

\* ADHD;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD, q.adhd\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table ADHD;

**run**; \* 11 (0.54%);

\* Tics;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics, q.tics\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table Tics;

**run**; \* 6 (0.29%);

\* EFS;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS, q.efs\_mdcare\_strt\_dt

from zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table EFS;

**run**; \* 109 (5.35%);

\* define any Neurodevelopmental outcome;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

table any\_neruo;

**run**; \* 131 (6.43%);

\* correct mdcare\_strt\_dt;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_2;

if mdd = **0** then mdd\_mdcare\_strt\_dt = "";

if cdd = **0** then cdd\_mdcare\_strt\_dt = "";

if adhd = **0** then adhd\_mdcare\_strt\_dt = "";

if tics = **0** then tics\_mdcare\_strt\_dt = "";

if efs = **0** then efs\_mdcare\_strt\_dt = "";

**run**;

\*\*\* (24.01.25) Table 1 3차 정의 start \*\*\*

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* study group 1 - table 1에서 정의해둔 g1eq\_0817\_m\_bthclsexm를 study\_group\_3\_1\_final\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_3\_1\_final\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

table g1e\_urn\_prot;

**run**;

\* ckd stage 정의;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

if g1e\_gfr ^= **.** and g1e\_gfr >= **30** and g1e\_gfr < **60** then ckd\_stage = **3**;

if g1e\_gfr ^= **.** and g1e\_gfr >= **15** and g1e\_gfr < **30** then ckd\_stage = **4**;

if g1e\_gfr ^= **.** and g1e\_gfr < **15** then ckd\_stage = **5**;

if g1e\_gfr ^= **.** and g1e\_gfr >= **60** then ckd\_stage = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

table ckd\_stage;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

/\*data zio.study\_group\_3\_1\_final\_cm\_bfc\_exm; \*/

/\*set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm; \*/

/\*if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = 1)\*/

/\*or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = 2) \*/

/\*or q\_smk\_yn = 2 or q\_smk\_yn = 3 then smoke = 1; else smoke = 0; \*/

/\*run; \*/

/\*\*/

/\*proc freq data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm; \*/

/\*table smoke; \*/

/\*run; \*/

\* dth (child) 정의;

**proc** **sql**;

create table zio.study\_group\_3\_1\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.study\_group\_3\_1\_final\_cm\_bfc\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

table bmi\_category;

**run**;

# 2-4. Table 1 by control group

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (24.01.16) 다태아 제거됨;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_final\_2;

**quit**; \* 488,209; \* (24.07.29 수정후) 487,478;

**data** zio.control\_group\_final;

set zio.bfc\_0817\_c\_m;

keep mother\_id mother\_byear child\_id byear sex\_type;

**run**;

**proc** **sort** data=zio.control\_group\_final;

by mother\_id child\_id descending mother\_byear;

**run**;

**proc** **sort** data=zio.control\_group\_final nodupkey;

by mother\_id child\_id mother\_byear;

**run**;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if mother\_byear = **.** then delete;

**run**;

**data** tmp;

set zio.control\_group\_final\_2;

keep mother\_id;

**run**;

**proc** **sort** data=tmp nodupkey;

by mother\_id;

**run**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.\*

from tmp as p left join zio.control\_group\_final as q

on p.mother\_id = q.mother\_id;

**quit**;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_final;

**quit**; \* 488,209; \* (24.07.29 수정후) 487,478;

**proc** **sql**;

select count(unique child\_id)

from zio.control\_group\_final;

**quit**; \* 714,739; \* (24.07.29 수정후) 713,776;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if child\_id = **.** then delete;

**run**;

\* mother age;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

mother\_age = byear - mother\_byear;

**run**;

\* (24.01.24 나이 구분 수정);

\* (24.06.20) 나이 구분 최종 수정;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.control\_group\_final;

table age\_group;

**run**;

**data** tmp;

set zio.control\_group\_final;

if age\_group = **4**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* 아이 문진 붙이기;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.\*

from zio.control\_group\_final as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother;

**proc** **sql**;

select count(unique mother\_id)

from zio.control\_group\_final;

**quit**; \* 488,208; \* (24.08.01 수정후) 487,477;

\* count unique child;

**proc** **sql**;

select count(unique child\_id)

from zio.control\_group\_final;

**quit**; \* 714,739; \* (24.08.01 수정후) 713,776;

\* mother comorbidity define;

\* 마지막 table에 각 질병 list 붙이기;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_gdm\_3 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.gdm4, q.gdm4\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_gdm\_4 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm4 추가;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.gdm5, q.gdm5\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_gdm\_5 as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.12 gdm5 추가;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_child, q.pb\_child\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.pb\_mom, q.pb\_mom\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_m\_pb as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**; \* 24.07.22 mother pb 다시 추가;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.control\_group\_final as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if gdm4 = **.** then gdm4 = **0**;

if gdm5 = **.** then gdm5 = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if pb\_mom = **.** then pb\_mom = **0**;

if pb\_child = **.** then pb\_child = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.control\_group\_final

where bth\_wght = **.**;

**quit**; \* 27,531;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

\* (24.07.22) pb\_child = 1 or pb\_mom = 1 or 분만 예정일 조건 해당일 경우 pb\_real = 1로 정의;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if pb\_child = **1** or pb\_mom = **1** or (bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21**) then pb\_real = **1**; else pb\_real = **0**;

**run**; \* (24.07.22) or 조건으로 변경됨;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if gdm = **1** and dm = **1** then gdm = **0**;

if gdm4 = **1** and dm = **1** then gdm4 = **0**;

if gdm5 = **1** and dm = **1** then gdm5 = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.control\_group\_final;

set zio.control\_group\_final;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.control\_group\_final n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.control\_group\_final;

table htn;

**proc** **freq** data=zio.control\_group\_final;

table dm;

**proc** **freq** data=zio.control\_group\_final;

table dspda;

**proc** **freq** data=zio.control\_group\_final;

table mi;

**proc** **freq** data=zio.control\_group\_final;

table chf;

**proc** **freq** data=zio.control\_group\_final;

table cdo;

**proc** **freq** data=zio.control\_group\_final;

table tia;

**proc** **freq** data=zio.control\_group\_final;

table cld;

**proc** **freq** data=zio.control\_group\_final;

table copd;

**proc** **freq** data=zio.control\_group\_final;

table Malignancy;

**proc** **freq** data=zio.control\_group\_final;

table gdm;

**proc** **freq** data=zio.control\_group\_final;

table gdm4;

**proc** **freq** data=zio.control\_group\_final;

table gdm5;

**proc** **freq** data=zio.control\_group\_final;

table pe;

**proc** **freq** data=zio.control\_group\_final;

table ce;

**proc** **freq** data=zio.control\_group\_final;

table pa;

**proc** **freq** data=zio.control\_group\_final;

table pp;

**proc** **freq** data=zio.control\_group\_final;

table np;

**proc** **freq** data=zio.control\_group\_final;

table low\_bth\_wght;

**proc** **freq** data=zio.control\_group\_final;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.control\_group\_final;

table pb\_mom; \* preterm birth;

**proc** **freq** data=zio.control\_group\_final;

table pb\_child; \* preterm birth;

**proc** **freq** data=zio.control\_group\_final;

table lga;

**proc** **freq** data=zio.control\_group\_final;

table sex\_type;

**run**;

**proc** **freq** data=zio.control\_group\_final;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.control\_group\_final;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

\* child comorbidity define;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 control\_group\_final 에 left join;

\* q00\_07;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07, q.q00\_07\_mdcare\_strt\_dt

from zio.control\_group\_final as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q00\_07;

**run**; \* 2,311 (0.32%);

\* q10\_18;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18, q.q10\_18\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q10\_18;

**run**; \* 11,105 (1.55%);

\* q20\_28;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28, q.q20\_28\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q20\_28;

**run**; \* 18,502 (2.59%);

\* q30\_34;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34, q.q30\_34\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q30\_34;

**run**; \* 1,596 (0.22%);

\* q35\_37;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37, q.q35\_37\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q35\_37;

**run**; \* 876 (0.12%);

\* q38\_45;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45, q.q38\_45\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q38\_45;

**run**; \* 32,275 (4.52%);

\* q50\_56;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56, q.q50\_56\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q50\_56;

**run**; \* 6,827 (0.96%);

\* q60\_64;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64, q.q60\_64\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q60\_64;

**run**; \* 4,225 (0.59%);

\* q65\_79;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79, q.q65\_79\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q65\_79;

**run**; \* 20,011 (2.80%);

\* q80\_89;

**proc** **sql**;

create table zio.control\_group\_final\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89, q.q80\_89\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table q80\_89;

**run**; \* 3,866 (0.54%);

\* define any congenital malformation;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm;

table any\_cm;

**run**; \* 89,668 (12.55%);

\* correct mdcare\_strt\_dt;

**data** zio.control\_group\_final\_cm;

set zio.control\_group\_final\_cm;

if q00\_07 = **0** then q00\_07\_mdcare\_strt\_dt = "";

if q10\_18 = **0** then q10\_18\_mdcare\_strt\_dt = "";

if q20\_28 = **0** then q20\_28\_mdcare\_strt\_dt = "";

if q30\_34 = **0** then q30\_34\_mdcare\_strt\_dt = "";

if q35\_37 = **0** then q35\_37\_mdcare\_strt\_dt = "";

if q38\_45 = **0** then q38\_45\_mdcare\_strt\_dt = "";

if q50\_56 = **0** then q50\_56\_mdcare\_strt\_dt = "";

if q60\_64 = **0** then q60\_64\_mdcare\_strt\_dt = "";

if q65\_79 = **0** then q65\_79\_mdcare\_strt\_dt = "";

if q80\_89 = **0** then q80\_89\_mdcare\_strt\_dt = "";

**run**;

\* 수도권/비수도권, 소득분위, insurance 붙이기;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc as

select p.\*, q.indi\_dscm\_no, q.gaibja\_type, q.calc\_ctrb\_vtile\_fd, q.rvsn\_addr\_cd

from zio.control\_group\_final\_cm as p left join zio.bfc\_0817\_m as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.std\_yyyy; \* 일단 이렇게 붙여보고, na check;

**quit**;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.control\_group\_final\_cm\_bfc;

set zio.control\_group\_final\_cm\_bfc;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.control\_group\_final\_cm\_bfc;

set zio.control\_group\_final\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.control\_group\_final\_cm\_bfc;

set zio.control\_group\_final\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* (24.01.04) Table 1 2차 정의 start \*\*\*

\* Neurodevelopmental outcome;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 control\_group\_final\_cm\_bfc 에 left join;

\* MDD;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD, q.mdd\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table MDD;

**run**; \* 5,763 (0.81%);

\* CDD;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD, q.cdd\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table CDD;

**run**; \* 3,914 (0.55%);

\* ADHD;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD, q.adhd\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table ADHD;

**run**; \* 2,488 (0.35%);

\* Tics;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics, q.tics\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table Tics;

**run**; \* 1,960 (0.27%);

\* EFS;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS, q.efs\_mdcare\_strt\_dt

from zio.control\_group\_final\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table EFS;

**run**; \* 50,666 (7.09%);

\* define any Neurodevelopmental outcome;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_2;

table any\_neruo;

**run**; \* 60,533 (8.47%);

\* correct mdcare\_strt\_dt;

**data** zio.control\_group\_final\_cm\_bfc\_2;

set zio.control\_group\_final\_cm\_bfc\_2;

if mdd = **0** then mdd\_mdcare\_strt\_dt = "";

if cdd = **0** then cdd\_mdcare\_strt\_dt = "";

if adhd = **0** then adhd\_mdcare\_strt\_dt = "";

if tics = **0** then tics\_mdcare\_strt\_dt = "";

if efs = **0** then efs\_mdcare\_strt\_dt = "";

**run**;

\*\*\* (24.01.25) Table 1 3차 정의 start \*\*\*

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* study group 1 - table 1에서 정의해둔 g1eq\_0817\_m\_bthclsexm를 control\_group\_final\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.control\_group\_final\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.control\_group\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table g1e\_urn\_prot;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

/\*data zio.control\_group\_final\_cm\_bfc\_exm; \*/

/\*set zio.control\_group\_final\_cm\_bfc\_exm; \*/

/\*if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = 1)\*/

/\*or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = 2) \*/

/\*or q\_smk\_yn = 2 or q\_smk\_yn = 3 then smoke = 1; else smoke = 0; \*/

/\*run; \*/

/\*\*/

/\*proc freq data=zio.control\_group\_final\_cm\_bfc\_exm; \*/

/\*table smoke; \*/

/\*run; \*/

\* dth (child) 정의;

**proc** **sql**;

create table zio.control\_group\_final\_cm\_bfc\_exm as

select p.\*, q.\*

from zio.control\_group\_final\_cm\_bfc\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table bmi\_category;

**run**;

# 2-5. Concat all study groups for analysis

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* create flag variable;

**data** zio.study\_group\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

study\_group\_1 = **1**;

**run**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_exm;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

study\_group\_2 = **1**;

**run**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

study\_group\_3 = **1**;

**run**;

**data** zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm;

study\_group\_3\_1 = **1**;

**run**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

control\_group = **1**;

**run**;

\* study group 1, 2, 3 + control group;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.study\_group\_1\_final\_cm\_bfc\_exm zio.study\_group\_2\_final\_cm\_bfc\_exm zio.study\_group\_3\_final\_cm\_bfc\_exm zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

\* study group 1, 2, 3-1 + control group;

**data** zio.final\_data\_for\_analysis\_sg3\_1;

set zio.study\_group\_1\_final\_cm\_bfc\_exm zio.study\_group\_2\_final\_cm\_bfc\_exm zio.study\_group\_3\_1\_final\_cm\_bfc\_exm zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

if study\_group\_1 = **1** then study\_group = **1**;

if study\_group\_2 = **1** then study\_group = **2**;

if study\_group\_3 = **1** then study\_group = **3**;

if control\_group = **1** then study\_group = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table study\_group;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_1;

set zio.final\_data\_for\_analysis\_sg3\_1;

if study\_group\_1 = **1** then study\_group = **1**;

if study\_group\_2 = **1** then study\_group = **2**;

if study\_group\_3\_1 = **1** then study\_group = **3**;

if control\_group = **1** then study\_group = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table study\_group;

**run**;

\* BMI category: Missing을 하나의 category로 추가;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

if bmi\_category = **.** then bmi\_category = **3**;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_1;

set zio.final\_data\_for\_analysis\_sg3\_1;

if bmi\_category = **.** then bmi\_category = **3**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table bmi\_category;

**run**;

**proc** **export** data=zio.final\_data\_for\_analysis\_sg3

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/final\_data\_for\_analysis\_sg3\_BmiMissingCategory.csv'

dbms=csv

replace;

**run**;

**proc** **export** data=zio.final\_data\_for\_analysis\_sg3\_1

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/final\_data\_for\_analysis\_sg3\_1.csv'

dbms=csv

replace;

**run**;

**proc** **means** data=zio.final\_data\_for\_analysis\_sg3 n nmiss;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table study\_group;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table any\_cm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table any\_neruo;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table study\_group;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table any\_cm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table any\_neruo;

**run**;

\*\*\*\* BMI imputation을 group별 mean 값으로 할때 \*\*\*\*;

\* copy data for bmi imputation;

**data** zio.study\_grp\_1\_final\_cm\_bfc\_exm\_bmi;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

**run**;

**data** zio.study\_grp\_2\_final\_cm\_bfc\_exm\_bmi;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

**run**;

**data** zio.study\_grp\_3\_final\_cm\_bfc\_exm\_bmi;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

**run**;

/\*data zio.study\_grp\_3\_1\_final\_cm\_bfc\_exm\_bmi; \*/

/\*set zio.study\_group\_3\_1\_final\_cm\_bfc\_exm; \*/

/\*run; \*/

**data** zio.cntrl\_grp\_final\_cm\_bfc\_exm\_bmi;

set zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

\* bmi mean imputation by group;

\* original bmi 변수는 Orig\_g1e\_bmi로 대치, imputed 된 variable 은 g1e\_bmi임;

**proc** **stdize** data=zio.study\_grp\_1\_final\_cm\_bfc\_exm\_bmi out=zio.study\_grp\_1\_final\_cm\_bfc\_exm\_bmi

oprefix=Orig\_

reponly

method=MEAN;

var g1e\_bmi;

**run**;

**proc** **stdize** data=zio.study\_grp\_2\_final\_cm\_bfc\_exm\_bmi out=zio.study\_grp\_2\_final\_cm\_bfc\_exm\_bmi

oprefix=Orig\_

reponly

method=MEAN;

var g1e\_bmi;

**run**;

**proc** **stdize** data=zio.study\_grp\_3\_final\_cm\_bfc\_exm\_bmi out=zio.study\_grp\_3\_final\_cm\_bfc\_exm\_bmi

oprefix=Orig\_

reponly

method=MEAN;

var g1e\_bmi;

**run**;

**proc** **stdize** data=zio.cntrl\_grp\_final\_cm\_bfc\_exm\_bmi out=zio.cntrl\_grp\_final\_cm\_bfc\_exm\_bmi

oprefix=Orig\_

reponly

method=MEAN;

var g1e\_bmi;

**run**;

\* study group 1, 2, 3 + control group;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.study\_grp\_1\_final\_cm\_bfc\_exm\_bmi zio.study\_grp\_2\_final\_cm\_bfc\_exm\_bmi zio.study\_grp\_3\_final\_cm\_bfc\_exm\_bmi zio.cntrl\_grp\_final\_cm\_bfc\_exm\_bmi;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if study\_group\_1 = **1** then study\_group = **1**;

if study\_group\_2 = **1** then study\_group = **2**;

if study\_group\_3 = **1** then study\_group = **3**;

if control\_group = **1** then study\_group = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table study\_group;

**run**;

\* categorical BMI 재정의;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table bmi\_category;

**run**;

\* smoke EDA;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table smoke;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table smoke;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table smoke;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table smoke;

**run**;

\* 연도에 따른 g1e\_hb\_smk\_new 변수 생성;

\* 0: 해당, 1: 비해당;

**data** zio.study\_group\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

g1e\_hb\_smk\_new = g1e\_hb\_smk;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**data** zio.study\_group\_2\_final\_cm\_bfc\_exm;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

g1e\_hb\_smk\_new = g1e\_hb\_smk;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

g1e\_hb\_smk\_new = g1e\_hb\_smk;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

g1e\_hb\_smk\_new = g1e\_hb\_smk;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table g1e\_hb\_smk\_new;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table g1e\_hb\_smk\_new;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table g1e\_hb\_smk\_new;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table g1e\_hb\_smk\_new;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table q\_smk\_yn;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table q\_smk\_yn;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table q\_smk\_yn;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table q\_smk\_yn;

**run**;

**proc** **freq** data=zio.study\_group\_1\_final\_cm\_bfc\_exm;

table income\_level;

**run**;

**proc** **freq** data=zio.study\_group\_2\_final\_cm\_bfc\_exm;

table income\_level;

**run**;

**proc** **freq** data=zio.study\_group\_3\_final\_cm\_bfc\_exm;

table income\_level;

**run**;

**proc** **freq** data=zio.control\_group\_final\_cm\_bfc\_exm;

table income\_level;

**run**;

\* (24.05.14) income\_level category: Missing을 하나의 category로 추가;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

if income\_level = **.** then income\_level = **6**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table income\_level;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_1;

set zio.final\_data\_for\_analysis\_sg3\_1;

if income\_level = **.** then income\_level = **6**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table income\_level;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if income\_level = **.** then income\_level = **6**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table income\_level;

**run**;

/\*\* (24.05.17) age\_group 세분화: <19, 20-29, 30-34, 35-40, >40; \*/

/\*data zio.final\_data\_for\_analysis\_sg3\_bmi; \*/

/\*set zio.final\_data\_for\_analysis\_sg3\_bmi; \*/

/\*if mother\_age < 20 then age\_group = 1; \*/

/\*if mother\_age >= 20 and mother\_age < 30 then age\_group = 2; \*/

/\*if mother\_age >= 30 and mother\_age < 35 then age\_group = 3; \*/

/\*if mother\_age >= 35 and mother\_age < 40 then age\_group = 4; \*/

/\*if mother\_age >= 40 then age\_group = 5; \*/

/\*run; \*/

/\*\*/

/\*proc freq data=zio.final\_data\_for\_analysis\_sg3\_bmi; \*/

/\*table age\_group; \*/

/\*run; \*/

\* 잘 나눠졌는지 test;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if age\_group = **5**;

**run**;

**proc** **freq** data=tmp;

table mother\_age;

**run**;

**proc** **means** data=zio.final\_data\_for\_analysis\_sg3\_bmi n nmiss;

**run**;

\* (24.06.10) APO outcome 추가;

\* (pregnancy outcome) GDM, PE, PB, PA 중 하나, (neonatal outcome) LBW, LGA, NICU, Mortality 중에 하나라도 해당될 경우 APO = 1;

\* (24.06.21 수정) (pregnancy outcome) GDM, PE, PB, PA 중 하나, (neonatal outcome) LBW 중에 하나라도 해당될 경우 APO = 1;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

if gdm = **1** or pe = **1** or pb\_real = **1** or pa = **1** or low\_bth\_wght = **1** then APO = **1**; else APO = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table APO;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_1;

set zio.final\_data\_for\_analysis\_sg3\_1;

if gdm = **1** or pe = **1** or pb\_real = **1** or pa = **1** or low\_bth\_wght = **1** then APO = **1**; else APO = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_1;

table APO;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if gdm = **1** or pe = **1** or pb\_real = **1** or pa = **1** or low\_bth\_wght = **1** then APO = **1**; else APO = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table APO;

**run**;

\* study group 별 APO N수 확인;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_1;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table child\_dth;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3;

table study\_group \* low\_bth\_wght;

**run**;

\* APO 분석용 data;

\* BMI mean impute, SMOKE . encoded to 0;

\* smoke 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table g1e\_hb\_smk\_new q\_smk\_yn;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if g1e\_hb\_smk\_new = **1** or q\_smk\_yn = **2** or q\_smk\_yn = **3** then smoke = **1**;

if g1e\_hb\_smk\_new = **0** or q\_smk\_yn = **1** then smoke = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table smoke;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_bmi;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

if smoke = **.** then smoke = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_bmi;

table smoke;

**run**;

\* cumulative incidence plot 그리기 위해, follow-up time 변수 생성;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

mdd\_mdcare\_strt\_dt\_new = INPUT(mdd\_mdcare\_strt\_dt, yymmdd10.);

format mdd\_mdcare\_strt\_dt\_new yymmdd10.;

cdd\_mdcare\_strt\_dt\_new = INPUT(cdd\_mdcare\_strt\_dt, yymmdd10.);

format cdd\_mdcare\_strt\_dt\_new yymmdd10.;

adhd\_mdcare\_strt\_dt\_new = INPUT(adhd\_mdcare\_strt\_dt, yymmdd10.);

format adhd\_mdcare\_strt\_dt\_new yymmdd10.;

tics\_mdcare\_strt\_dt\_new = INPUT(tics\_mdcare\_strt\_dt, yymmdd10.);

format tics\_mdcare\_strt\_dt\_new yymmdd10.;

efs\_mdcare\_strt\_dt\_new = INPUT(efs\_mdcare\_strt\_dt, yymmdd10.);

format efs\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3;

set zio.final\_data\_for\_analysis\_sg3;

if mdd\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new ^= **.** then mdd\_time = mdd\_mdcare\_strt\_dt\_new - bth\_date\_new;

if cdd\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new ^= **.** then cdd\_time = cdd\_mdcare\_strt\_dt\_new - bth\_date\_new;

if adhd\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new ^= **.** then adhd\_time = adhd\_mdcare\_strt\_dt\_new - bth\_date\_new;

if tics\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new ^= **.** then tics\_time = tics\_mdcare\_strt\_dt\_new - bth\_date\_new;

if efs\_mdcare\_strt\_dt\_new ^= **.** and bth\_date\_new ^= **.** then efs\_time = efs\_mdcare\_strt\_dt\_new - bth\_date\_new;

**run**;

**data** zio.t30\_0817\_m\_htn;

set zio.t30\_0817\_m\_htn;

bth\_date\_new = INPUT(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

bth\_bf\_3y\_date = intnx("month", bth\_date\_new, -**36**);

format bth\_bf\_3y\_date yymmdd10.;

**run**;

**proc** **export** data=zio.final\_data\_for\_analysis\_sg3

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/final\_data\_for\_analysis\_sg3.csv'

dbms=csv

replace;

**run**;

**proc** **export** data=zio.final\_data\_for\_analysis\_sg3\_1

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/final\_data\_for\_analysis\_sg3\_1.csv'

dbms=csv

replace;

**run**;

**proc** **export** data=zio.final\_data\_for\_analysis\_sg3\_bmi

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/final\_data\_for\_analysis\_sg3\_apo.csv'

dbms=csv

replace;

**run**;

# 3-1. Analysis by study group 1

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* exam까지 붙여놓은 study group 1 final dataset은 zio.study\_group\_1\_final\_cm\_bfc\_exm;

**proc** **means** data=zio.study\_group\_1\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

\* stepwise selection - any\_cm;

ods html;

ods graphics on;

**proc** **glmselect** data=zio.study\_group\_1\_final\_cm\_bfc\_exm plots=all;

class any\_cm (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') MDD (ref='0') CDD (ref='0')

ADHD (ref='0') TICS (ref='0') EFS (ref='0') any\_neruo (ref='0');

model any\_cm = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

MDD CDD ADHD TICS EFS any\_neruo /\* Neurodevelopmental outcome \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

ods graphics off;

ods html close;

\* stepwise selection - any\_neruo;

ods html;

ods graphics on;

**proc** **glmselect** data=zio.study\_group\_1\_final\_cm\_bfc\_exm plots=all;

class any\_neruo (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') Q00\_07 (ref='0') Q10\_18 (ref='0')

Q30\_34 (ref='0') Q35\_37 (ref='0') Q38\_45 (ref='0') Q50\_56 (ref='0') Q60\_64 (ref='0') Q65\_79 (ref='0') Q80\_89 (ref='0') any\_cm (ref='0');

model any\_neruo = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

Q00\_07 Q10\_18 Q30\_34 Q35\_37 Q38\_45 Q50\_56 Q60\_64 Q65\_79 Q80\_89 any\_cm /\* Congenital malformation \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

ods graphics off;

ods html close;

\* 일단 선행연구 변수들로 간단하게 psmatch, logistic;

\* control group 붙이기;

**data** zio.study\_group\_1\_final\_cm\_bfc\_exm;

set zio.study\_group\_1\_final\_cm\_bfc\_exm;

kt = **1**;

**run**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

kt = **0**;

**run**;

**data** zio.study\_group\_1\_wth\_control;

set zio.study\_group\_1\_final\_cm\_bfc\_exm zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

\* change byear to numeric for psmatching;

**data** zio.study\_group\_1\_wth\_control;

set zio.study\_group\_1\_wth\_control;

num\_byear = input(byear, comma9.);

**run**;

\* psmatching;

/\*ODS GRAPHICS ON; \*/

**proc** **psmatch** data = zio.study\_group\_1\_wth\_control ;

class kt htn dm;

psmodel kt(Treated = '1') = mother\_age htn dm num\_byear;

match method = greedy(k=**5**) stat=lps caliper=**.**;

assess lps var=(mother\_age htn dm num\_byear)/ weight = none;

output out(obs=match)= zio.study\_group\_1\_psmatched lps=\_Lps matchid = \_MatchID;

**run**;

/\* draw histogram of propensity score \*/

**proc** **univariate** data=zio.study\_group\_1\_psmatched noprint;

class kt;

histogram \_PS\_ / normal (color=red) nrows=**2**;

**run**;

\* any\_cm;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_1\_psmatched;

class kt(ref='0');

model any\_cm (event='1') =

kt / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_1\_psmatched;

class sex\_type (ref='1') kt(ref='0') htn(ref='0') dm(ref='0');

model any\_cm (event='1') =

kt

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

\* any\_neruo;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_1\_psmatched;

class kt(ref='0');

model any\_neruo (event='1') =

kt / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_1\_psmatched;

class sex\_type (ref='1') kt(ref='0') htn(ref='0') dm(ref='0');

model any\_neruo (event='1') =

kt

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

# 3-2. Analysis by study group 2

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* exam까지 붙여놓은 study group 2 final dataset은 zio.study\_group\_2\_final\_cm\_bfc\_exm;

**proc** **means** data=zio.study\_group\_2\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

\* stepwise selection - any\_cm;

ods html;

ods graphics on;

**proc** **glmselect** data=zio.study\_group\_2\_final\_cm\_bfc\_exm plots=all;

class any\_cm (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') MDD (ref='0') CDD (ref='0')

ADHD (ref='0') TICS (ref='0') EFS (ref='0') any\_neruo (ref='0');

model any\_cm = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

MDD CDD ADHD TICS EFS any\_neruo /\* Neurodevelopmental outcome \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

ods graphics off;

ods html close;

\* stepwise selection - any\_neruo;

ods html;

ods graphics on;

**proc** **glmselect** data=zio.study\_group\_2\_final\_cm\_bfc\_exm plots=all;

class any\_neruo (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') Q00\_07 (ref='0') Q10\_18 (ref='0')

Q30\_34 (ref='0') Q35\_37 (ref='0') Q38\_45 (ref='0') Q50\_56 (ref='0') Q60\_64 (ref='0') Q65\_79 (ref='0') Q80\_89 (ref='0') any\_cm (ref='0');

model any\_neruo = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

Q00\_07 Q10\_18 Q30\_34 Q35\_37 Q38\_45 Q50\_56 Q60\_64 Q65\_79 Q80\_89 any\_cm /\* Congenital malformation \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

ods graphics off;

ods html close;

\* 일단 선행연구 변수들로 간단하게 psmatch, logistic;

\* control group 붙이기;

**data** zio.study\_group\_2\_final\_cm\_bfc\_exm;

set zio.study\_group\_2\_final\_cm\_bfc\_exm;

eskd = **1**;

**run**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

eskd = **0**;

**run**;

**data** zio.study\_group\_2\_wth\_control;

set zio.study\_group\_2\_final\_cm\_bfc\_exm zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

\* change byear to numeric for psmatching;

**data** zio.study\_group\_2\_wth\_control;

set zio.study\_group\_2\_wth\_control;

num\_byear = input(byear, comma9.);

**run**;

\* psmatching;

/\*ODS GRAPHICS ON; \*/

**proc** **psmatch** data = zio.study\_group\_2\_wth\_control ;

class eskd htn dm;

psmodel eskd(Treated = '1') = mother\_age htn dm num\_byear;

match method = greedy(k=**5**) stat=lps caliper=**.**;

assess lps var=(mother\_age htn dm num\_byear)/ weight = none;

output out(obs=match)= zio.study\_group\_2\_psmatched lps=\_Lps matchid = \_MatchID;

**run**;

/\* draw histogram of propensity score \*/

**proc** **univariate** data=zio.study\_group\_2\_psmatched noprint;

class eskd;

histogram \_PS\_ / normal (color=red) nrows=**2**;

**run**;

\* any\_cm;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_2\_psmatched;

class eskd(ref='0');

model any\_cm (event='1') =

eskd / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_2\_psmatched;

class sex\_type (ref='1') eskd(ref='0') htn(ref='0') dm(ref='0');

model any\_cm (event='1') =

eskd

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

\* any\_neruo;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_2\_psmatched;

class eskd(ref='0');

model any\_neruo (event='1') =

eskd / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_2\_psmatched;

class sex\_type (ref='1') eskd(ref='0') htn(ref='0') dm(ref='0');

model any\_neruo (event='1') =

eskd

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

# 3-3. Analysis by study group 3

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* exam까지 붙여놓은 study group 3 final dataset은 zio.study\_group\_3\_final\_cm\_bfc\_exm;

**proc** **means** data=zio.study\_group\_3\_final\_cm\_bfc\_exm n nmiss mean median min max std;

**run**;

\* stepwise selection - any\_cm;

ods html;

ods graphics on;

**proc** **glmselect** data=zio.study\_group\_3\_final\_cm\_bfc\_exm plots=all;

class any\_cm (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') MDD (ref='0') CDD (ref='0')

ADHD (ref='0') TICS (ref='0') EFS (ref='0') any\_neruo (ref='0');

model any\_cm = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

MDD CDD ADHD TICS EFS any\_neruo /\* Neurodevelopmental outcome \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

ods graphics off;

ods html close;

\* stepwise selection - any\_neruo;

/\*ods html; \*/

/\*ods graphics on; \*/

**proc** **glmselect** data=zio.study\_group\_3\_final\_cm\_bfc\_exm plots=all;

class any\_neruo (ref='0') sex\_type (ref='1') smoke (ref='0') HTN (ref='0') DM (ref='0') DSPDA (ref='0') MI (ref='0') CHF (ref='0') CDO (ref='0') TIA (ref='0') CLD (ref='0')

COPD (ref='0') Malignancy (ref='0') GDM (ref='0') PE (ref='0') CE (ref='0') PA (ref='0') PP (ref='0') NP (ref='0') LGA (ref='0') pb\_real (ref='0') Q00\_07 (ref='0') Q10\_18 (ref='0')

Q30\_34 (ref='0') Q35\_37 (ref='0') Q38\_45 (ref='0') Q50\_56 (ref='0') Q60\_64 (ref='0') Q65\_79 (ref='0') Q80\_89 (ref='0') any\_cm (ref='0');

model any\_neruo = HTN DM DSPDA MI CHF CDO TIA CLD COPD Malignancy /\* Comorbidity before pregnancy; \*/

GDM PE CE PA PP NP LGA pb\_real /\* pregnancy outcomes \*/ low\_bth\_wght bth\_wght sex\_type /\* child exam \*/

Q00\_07 Q10\_18 Q30\_34 Q35\_37 Q38\_45 Q50\_56 Q60\_64 Q65\_79 Q80\_89 any\_cm /\* Congenital malformation \*/

g1e\_bmi g1e\_bp\_sys g1e\_bp\_dia g1e\_urn\_prot g1e\_hgb g1e\_tot\_chol smoke /\* mother exam \*/ /\* g1e\_crtn g1e\_gfr의 경우, 결측이 너무 많아 일단 삭제 \*/

/ details=all stats=all;

**run**;

/\*ods graphics off; \*/

/\*ods html close; \*/

\* 일단 선행연구 변수들로 간단하게 psmatch, logistic;

\* control group 붙이기;

**data** zio.study\_group\_3\_final\_cm\_bfc\_exm;

set zio.study\_group\_3\_final\_cm\_bfc\_exm;

ckd = **1**;

**run**;

**data** zio.control\_group\_final\_cm\_bfc\_exm;

set zio.control\_group\_final\_cm\_bfc\_exm;

ckd = **0**;

**run**;

**data** zio.study\_group\_3\_wth\_control;

set zio.study\_group\_3\_final\_cm\_bfc\_exm zio.control\_group\_final\_cm\_bfc\_exm;

**run**;

\* change byear to numeric for psmatching;

**data** zio.study\_group\_3\_wth\_control;

set zio.study\_group\_3\_wth\_control;

num\_byear = input(byear, comma9.);

**run**;

\* psmatching;

/\*ODS GRAPHICS ON; \*/

**proc** **psmatch** data = zio.study\_group\_3\_wth\_control ;

class ckd htn dm;

psmodel ckd(Treated = '1') = mother\_age htn dm num\_byear;

match method = greedy(k=**5**) stat=lps caliper=**.**;

assess lps var=(mother\_age htn dm num\_byear)/ weight = none;

output out(obs=match)= zio.study\_group\_3\_psmatched lps=\_Lps matchid = \_MatchID;

**run**;

/\* draw histogram of propensity score \*/

**proc** **univariate** data=zio.study\_group\_3\_psmatched noprint;

class ckd;

histogram \_PS\_ / normal (color=red) nrows=**2**;

**run**;

\* any\_cm;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_3\_psmatched;

class ckd(ref='0');

model any\_cm (event='1') =

ckd / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_3\_psmatched;

class sex\_type (ref='1') ckd(ref='0') htn(ref='0') dm(ref='0');

model any\_cm (event='1') =

ckd

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

\* any\_neruo;

\* logistic unadjusted model;

**proc** **logistic** data=zio.study\_group\_3\_psmatched;

class ckd(ref='0');

model any\_neruo (event='1') =

ckd / link=logit technique=fisher;

**run**;

\* logistic adjusted model;

**proc** **logistic** data=zio.study\_group\_3\_psmatched;

class sex\_type (ref='1') ckd(ref='0') htn(ref='0') dm(ref='0');

model any\_neruo (event='1') =

ckd

mother\_age

htn

dm

sex\_type / link=logit technique=fisher;

**run**;

# \* 번외. T3040에서 초산/경산/자연분만/제왕절개 확인

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (23.12.07) mother T30에서 초산/경산/자연분만/제왕절개 확인;

\* EDI 코드, 기존코드 모두 추가되어 있음;

**data** zio.t30\_0817\_m\_deliverytype;

set zio.t30\_0817\_m;

if substr(mcare\_div\_cd\_adj, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then first\_birth = **1**;

if substr(mcare\_div\_cd\_adj, **1**, **6**) in ("H5960S", "H5984S", "H6141S", "H59600", "H59840", "H61410", "H60520")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H5960", "H5984", "H6141", "H6052", "H6114", "H6117", "H6128")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4356", "R3136", "R3146", "RA433", "RA313", "RA317", "R4362", "RA362", "R4508", "R4510", "R4518")

then multiple\_birth = **1**;

if substr(mcare\_div\_cd\_adj, **1**, **6**) in ("H5950S", "H5960S", "H5971S", "H5984S", "H6134S", "H6141S", "H59500", "H59600", "H59710", "H59840", "H61340", "H61410",

"H60510", "H60520", "H61250")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H5950", "H5960", "H5971", "H5984", "H6134", "H6141", "H6051", "H6052", "H6125")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4356", "R3136", "R3146", "RA433",

"RA313", "RA317", "R4362", "RA362", "RA380", "R4380")

then natural\_birth = **1**;

if substr(mcare\_div\_cd\_adj, **1**, **5**) in ("H6113", "H6114", "H6116", "H6117", "H6124", "H6128", "H6122")

or substr(mcare\_div\_cd\_adj, **1**, **5**) in ("R4507", "R4508", "R4509", "R4510", "R4517", "R4518", "R4514")

then cesarean\_section = **1**;

**run**;

\* mother T40에서 초산/경산/자연분만/제왕절개 확인;

\* EDI 코드, 기존코드 모두 추가되어 있음;

**data** zio.t40\_0817\_m\_deliverytype;

set zio.t40\_0817\_m;

if substr(mcex\_sick\_sym, **1**, **6**) in ("H5950S", "H5971S", "H6134S", "H59500", "H59710", "H61340", "H60510")

or substr(mcex\_sick\_sym, **1**, **5**) in ("H5950", "H5971", "H6134", "H6051", "H6113", "H6116", "H6124", "H6130")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4507", "R4509", "R4517")

then first\_birth = **1**;

if substr(mcex\_sick\_sym, **1**, **6**) in ("H5960S", "H5984S", "H6141S", "H59600", "H59840", "H61410", "H60520")

or substr(mcex\_sick\_sym, **1**, **5**) in ("H5960", "H5984", "H6141", "H6052", "H6114", "H6117", "H6128")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4356", "R3136", "R3146", "RA433", "RA313", "RA317", "R4362", "RA362", "R4508", "R4510", "R4518")

then multiple\_birth = **1**;

if substr(mcex\_sick\_sym, **1**, **6**) in ("H5950S", "H5960S", "H5971S", "H5984S", "H6134S", "H6141S", "H59500", "H59600", "H59710", "H59840", "H61340", "H61410",

"H60510", "H60520", "H61250")

or substr(mcex\_sick\_sym, **1**, **5**) in ("H5950", "H5960", "H5971", "H5984", "H6134", "H6141", "H6051", "H6052", "H6125")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4351", "R3131", "R3141", "RA431", "RA311", "RA315", "R4361", "RA361", "R4356", "R3136", "R3146", "RA433",

"RA313", "RA317", "R4362", "RA362", "RA380", "R4380")

then natural\_birth = **1**;

if substr(mcex\_sick\_sym, **1**, **5**) in ("H6113", "H6114", "H6116", "H6117", "H6124", "H6128", "H6122")

or substr(mcex\_sick\_sym, **1**, **5**) in ("R4507", "R4508", "R4509", "R4510", "R4517", "R4518", "R4514")

then cesarean\_section = **1**;

**run**;

\* t3040 합치기;

**data** tmp;

set zio.t30\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt first\_birth multiple\_birth natural\_birth cesarean\_section;

**run**;

**data** tmp2;

set zio.t40\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt first\_birth multiple\_birth natural\_birth cesarean\_section;

**run**;

**data** zio.t3040\_0817\_m\_deliverytype;

set tmp tmp2;

**run**;

\* 각각 drop dup해서 target table에 붙이기;

\* 24.01.16 target table을 다태아 제외한 table로 변경;

\* (24.02.05) mdcare\_strt\_dt 포함해서 코드 다시 짬;

\* first\_birth;

**data** tmp;

set zio.t3040\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt first\_birth;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending first\_birth mdcare\_strt\_dt;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp;

set tmp;

mdcare\_strt\_year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **sql**;

create table zio.target\_mother\_deliverytype as

select p.\*, q.\*

from zio.bfc\_0817\_c\_m\_nodup as p left join tmp as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.mdcare\_strt\_year;

**quit**;

**data** zio.target\_mother\_deliverytype;

set zio.target\_mother\_deliverytype;

rename mdcare\_strt\_year = first\_birth\_year;

**run**;

\* multiple\_birth;

**data** tmp;

set zio.t3040\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt multiple\_birth;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending multiple\_birth mdcare\_strt\_dt;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp;

set tmp;

multiple\_birth\_year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **sql**;

create table zio.target\_mother\_deliverytype as

select p.\*, q.\*

from zio.target\_mother\_deliverytype as p left join tmp as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.multiple\_birth\_year;

**quit**;

\* natural\_birth;

**data** tmp;

set zio.t3040\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt natural\_birth;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending natural\_birth mdcare\_strt\_dt;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp;

set tmp;

natural\_birth\_year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **sql**;

create table zio.target\_mother\_deliverytype as

select p.\*, q.\*

from zio.target\_mother\_deliverytype as p left join tmp as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.natural\_birth\_year;

**quit**;

\* cesarean\_section;

**data** tmp;

set zio.t3040\_0817\_m\_deliverytype;

keep indi\_dscm\_no mdcare\_strt\_dt cesarean\_section;

**run**;

**proc** **sort** data=tmp;

by indi\_dscm\_no descending cesarean\_section mdcare\_strt\_dt;

**run**;

**proc** **sort** data=tmp nodupkey;

by indi\_dscm\_no;

**run**;

**data** tmp;

set tmp;

cesarean\_section\_year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **sql**;

create table zio.target\_mother\_deliverytype as

select p.\*, q.\*

from zio.target\_mother\_deliverytype as p left join tmp as q

on p.mother\_id = q.indi\_dscm\_no and p.byear = q.cesarean\_section\_year;

**quit**;

**data** zio.target\_mother\_deliverytype;

set zio.target\_mother\_deliverytype;

if first\_birth = **.** then first\_birth = **0**;

if multiple\_birth = **.** then multiple\_birth = **0**;

if natural\_birth = **.** then natural\_birth = **0**;

if cesarean\_section = **.** then cesarean\_section = **0**;

**run**;

\* mother count;

**proc** **sql**;

select count(unique mother\_id)

from zio.target\_mother\_deliverytype

where first\_birth = **1**;

**quit**; \* 1,823,892;

**proc** **sql**;

select count(unique mother\_id)

from zio.target\_mother\_deliverytype

where multiple\_birth = **1**;

**quit**; \* 1,045,263;

**proc** **sql**;

select count(unique mother\_id)

from zio.target\_mother\_deliverytype

where natural\_birth = **1**;

**quit**; \* 1,557,741;

**proc** **sql**;

select count(unique mother\_id)

from zio.target\_mother\_deliverytype

where cesarean\_section = **1**;

**quit**; \* 1,025,335;

**proc** **sql**;

select count(unique mother\_id)

from zio.target\_mother\_deliverytype;

**quit**; \* 2,605,422;

\* child count;

**proc** **sql**;

select count(unique child\_id)

from zio.target\_mother\_deliverytype

where first\_birth = **1**;

**quit**; \* 1,824,782;

**proc** **sql**;

select count(unique child\_id)

from zio.target\_mother\_deliverytype

where multiple\_birth = **1**;

**quit**; \* 1,045,792;

**proc** **sql**;

select count(unique child\_id)

from zio.target\_mother\_deliverytype

where natural\_birth = **1**;

**quit**; \* 1,558,460;

**proc** **sql**;

select count(unique child\_id)

from zio.target\_mother\_deliverytype

where cesarean\_section = **1**;

**quit**; \* 1,025,849;

**proc** **sql**;

select count(unique child\_id)

from zio.target\_mother\_deliverytype;

**quit**; \* 3,637,903;

# \* 번외. 전체 인원의 검진 평균 횟수 계산

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

**data** zio.g1eq\_0817\_m\_countexam;

set zio.g1eq\_0817\_m;

**run**;

**proc** **sql**;

create table zio.g1eq\_0817\_m\_countexam as

select \*, count(hme\_dt) as exam\_N

from zio.g1eq\_0817\_m\_countexam

group by indi\_dscm\_no;

**quit**; \* 12/20 여기까지 돌려놓고 감;

**data** zio.tmp;

set zio.g1eq\_0817\_m\_countexam;

**run**;

**proc** **sort** data=zio.tmp nodupkey;

by indi\_dscm\_no;

**run**;

**proc** **freq** data=zio.tmp;

table exam\_N;

**run**;

**proc** **means** data=zio.tmp n nmiss mean median min max std;

**run**;

# Thesis) 1. 전체 산모 코호트로 재시작

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (24.05.27) multiple pregnancy만 모두 제외한 nodup target list로 시작;

\* count unique mother id with child;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0817\_c\_m\_nodup;

**quit**; \* 2,605,422;

\* count unique child id with mother;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0817\_c\_m\_nodup;

**quit**; \* 3,637,903;

**proc** **means** data=zio.bfc\_0817\_c\_m\_nodup n nmiss;

**run**;

\* copy data for prediction model;

**data** zio.bfc\_0817\_c\_m\_nodup\_cpy;

set zio.bfc\_0817\_c\_m\_nodup;

**run**;

\* bth\_date 가져오기 위해 영유아 검진 붙이기;

**proc** **sql**;

create table zio.bfc\_0817\_c\_m\_nodup\_cpy as

select p.\*, q.\*

from zio.bfc\_0817\_c\_m\_nodup\_cpy as p left join zio.i1234567q\_rst\_0817\_c\_nodup as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

\* count unique mother id with child;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0817\_c\_m\_nodup\_cpy;

**quit**; \* 2,605,422;

\* count unique child id with mother;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0817\_c\_m\_nodup\_cpy;

**quit**; \* 3,637,903;

\* change to datetime;

**data** zio.bfc\_0817\_c\_m\_nodup\_cpy;

set zio.bfc\_0817\_c\_m\_nodup\_cpy;

bth\_date\_new = input(bth\_date, yymmdd10.);

format bth\_date\_new yymmdd10.;

**run**;

**proc** **sort** data=zio.bfc\_0817\_c\_m\_nodup\_cpy;

by indi\_dscm\_no child\_id exmd\_bz\_yyyy;

**run**;

\* mother\_byear = . 인 n수 count;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0817\_c\_m\_nodup\_cpy

where mother\_byear = '';

**quit**;

\* byear가 없는 mother 삭제;

**data** zio.bfc\_0817\_c\_m\_nodup\_cpy;

set zio.bfc\_0817\_c\_m\_nodup\_cpy;

if mother\_byear = **.** then delete;

**run**;

\* 삭제 후 재확인;

\* count unique mother id with child;

**proc** **sql**;

select count(unique mother\_id)

from zio.bfc\_0817\_c\_m\_nodup\_cpy;

**quit**; \* 2,591,757;

\* count unique child id with mother;

**proc** **sql**;

select count(unique child\_id)

from zio.bfc\_0817\_c\_m\_nodup\_cpy;

**quit**; \* 3,623,763;

**proc** **means** data=zio.bfc\_0817\_c\_m\_nodup\_cpy n nmiss;

**run**;

**proc** **freq** data=zio.bfc\_0817\_c\_m\_nodup\_cpy;

tables sex\_type;

**run**;

\* mother age;

**data** zio.bfc\_0817\_c\_m\_nodup\_cpy;

set zio.bfc\_0817\_c\_m\_nodup\_cpy;

mother\_age = byear - mother\_byear;

**run**;

**proc** **means** data=zio.bfc\_0817\_c\_m\_nodup\_cpy n nmiss;

**run**;

**data** zio.bfc\_0817\_c\_m\_nodup\_cpy;

set zio.bfc\_0817\_c\_m\_nodup\_cpy;

if mother\_age < **25** then age\_group = **1**; \* under 25;

if mother\_age >= **25** and mother\_age < **30** then age\_group = **2**; \* 25~29;

if mother\_age >= **30** and mother\_age < **35** then age\_group = **3**; \* 30~34;

if mother\_age >= **35** and mother\_age < **40** then age\_group = **4**; \* 35~39;

if mother\_age >= **40** then age\_group = **5**; \* over 40;

**run**;

**proc** **freq** data=zio.bfc\_0817\_c\_m\_nodup\_cpy;

table age\_group;

**run**;

**data** zio.prediction\_dta;

set zio.bfc\_0817\_c\_m\_nodup\_cpy;

**run**;

\* mother comorbidity define;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.htn, q.htn\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t3040\_0817\_m\_htn as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.dm, q.dm\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t3040\_0817\_m\_dm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.dspda, q.dspda\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t3040\_0817\_m\_dspda as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.mi, q.mi\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_mi as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.chf, q.chf\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_chf as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.cdo, q.cdo\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_cdo as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.tia, q.tia\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_tia as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.cld, q.cld\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_cld as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.copd, q.copd\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_copd as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Malignancy, q.Malignancy\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_Malignancy as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.gdm, q.gdm\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_gdm as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.pe, q.pe\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_pe as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.ce, q.ce\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_ce as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.pa, q.pa\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_pa as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.pp, q.pp\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_m\_pp as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.np, q.np\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_np as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.lga, q.lga\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_c\_lga as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 10.16 LGA 추가;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.pb, q.pb\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t40\_0817\_c\_pb as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.nicu, q.nicu\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_c\_nicu as q

on p.child\_id = q.indi\_dscm\_no;

**quit**; \* 24.02.26 NICU admission 추가;

\* 24.06.12 이하 약제 추가;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.HTN\_med, q.HTN\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_HTN\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.DM\_med, q.DM\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_DM\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.HLD\_med, q.HLD\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_HLD\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Diuretic\_med, q.Diuretic\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Diuretic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Antidepressant\_med, q.Antidepre\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Antidepressant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Antithrombotic\_med, q.Antithrom\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Antithrombotic\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Dialysis\_related\_med, q.Dialysis\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Dialysis\_related\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Steroid\_med, q.Steroid\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Steroid\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Immunosuppressants\_med, q.Immuno\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Immuno\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Antiviral\_med, q.Antiviral\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Antiviral\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**proc** **sql**;

create table zio.prediction\_dta as

select p.\*, q.indi\_dscm\_no, q.Transplant\_related\_med, q.Trans\_med\_mdcare\_strt\_dt

from zio.prediction\_dta as p left join zio.t30\_0817\_m\_Transplant\_med as q

on p.mother\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

if htn = **.** then htn = **0**;

if dm = **.** then dm = **0**;

if dspda = **.** then dspda = **0**;

if mi = **.** then mi = **0**;

if chf = **.** then chf = **0**;

if cdo = **.** then cdo = **0**;

if tia = **.** then tia = **0**;

if cld = **.** then cld = **0**;

if copd = **.** then copd = **0**;

if Malignancy = **.** then Malignancy = **0**;

if gdm = **.** then gdm = **0**;

if pe = **.** then pe = **0**;

if ce = **.** then ce = **0**;

if pa = **.** then pa = **0**;

if pp = **.** then pp = **0**;

if np = **.** then np = **0**;

if lga = **.** then lga = **0**;

if pb = **.** then pb = **0**;

if nicu = **.** then nicu = **0**;

if HTN\_med = **.** then HTN\_med = **0**;

if DM\_med = **.** then DM\_med = **0**;

if HLD\_med = **.** then HLD\_med = **0**;

if Diuretic\_med = **.** then Diuretic\_med = **0**;

if Antidepressant\_med = **.** then Antidepressant\_med = **0**;

if Antithrombotic\_med = **.** then Antithrombotic\_med = **0**;

if Dialysis\_related\_med = **.** then Dialysis\_related\_med = **0**;

if Steroid\_med = **.** then Steroid\_med = **0**;

if Immunosuppressants\_med = **.** then Immunosuppressants\_med = **0**;

if Antiviral\_med = **.** then Antiviral\_med = **0**;

if Transplant\_related\_med = **.** then Transplant\_related\_med = **0**;

**run**;

**proc** **sql**;

select count(unique child\_id)

from zio.prediction\_dta

where bth\_wght = **.**;

**quit**; \* 316,901;

\* low birth weight 정의;

\* 2.5kg 미만일 경우 1;

\* (24.06.21) LBW null은 살려놓고, model 3에서만 해당인원 삭제하는 것으로 결정;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

if (bth\_wght ^= **.** and bth\_wght < **2.5**) then low\_bth\_wght = **1**;

else if (bth\_wght ^= **.** and bth\_wght >= **2.5**) then low\_bth\_wght = **0**;

**run**;

\* 조산 추가 정의;

\* pb = 1 (조산) 이고 분만 예정일보다 3주 이상 빨리 태어난 아기만 pb\_real = 1로 정의;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

exp\_date\_new = INPUT(exp\_date, yymmdd10.);

format exp\_date\_new yymmdd10.;

**run**;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

if pb = **1** and bth\_date\_new ^= **.** and exp\_date\_new ^=**.** and

bth\_date\_new <= exp\_date\_new - **21** then pb\_real = **1**; else pb\_real = **0**;

**run**;

\* (23.12.29 추가) GDM 인원에서 DM 진단 인원 제외;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

if gdm = **1** and dm = **1** then gdm = **0**;

**run**;

\* (24.02.26 추가) 분만 이후 1년 이내 NICU = 1인 아기만 NICU\_1y = 1로 정의;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

nicu\_mdcare\_strt\_dt\_new = INPUT(nicu\_mdcare\_strt\_dt, yymmdd10.);

format nicu\_mdcare\_strt\_dt\_new yymmdd10.;

**run**;

**data** zio.prediction\_dta;

set zio.prediction\_dta;

if nicu = **1** and bth\_date\_new ^= **.** and nicu\_mdcare\_strt\_dt\_new ^=**.** and

bth\_date\_new <= nicu\_mdcare\_strt\_dt\_new and nicu\_mdcare\_strt\_dt\_new <= bth\_date\_new + **365** then NICU\_1y = **1**; else NICU\_1y = **0**;

**run**;

**proc** **means** data=zio.prediction\_dta n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.prediction\_dta;

table htn;

**proc** **freq** data=zio.prediction\_dta;

table dm;

**proc** **freq** data=zio.prediction\_dta;

table dspda;

**proc** **freq** data=zio.prediction\_dta;

table mi;

**proc** **freq** data=zio.prediction\_dta;

table chf;

**proc** **freq** data=zio.prediction\_dta;

table cdo;

**proc** **freq** data=zio.prediction\_dta;

table tia;

**proc** **freq** data=zio.prediction\_dta;

table cld;

**proc** **freq** data=zio.prediction\_dta;

table copd;

**proc** **freq** data=zio.prediction\_dta;

table Malignancy;

**proc** **freq** data=zio.prediction\_dta;

table gdm;

**proc** **freq** data=zio.prediction\_dta;

table pe;

**proc** **freq** data=zio.prediction\_dta;

table ce;

**proc** **freq** data=zio.prediction\_dta;

table pa;

**proc** **freq** data=zio.prediction\_dta;

table pp;

**proc** **freq** data=zio.prediction\_dta;

table np;

**proc** **freq** data=zio.prediction\_dta;

table low\_bth\_wght;

**proc** **freq** data=zio.prediction\_dta;

table pb\_real; \* preterm birth;

**proc** **freq** data=zio.prediction\_dta;

table lga;

**proc** **freq** data=zio.prediction\_dta;

table sex\_type;

**run**;

**proc** **freq** data=zio.prediction\_dta;

table nicu\_1y;

**run**;

**proc** **freq** data=zio.prediction\_dta;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

\* child comorbidity define;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 prediction\_dta 에 left join;

\* q00\_07;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q00\_07

from zio. prediction\_dta as p left join zio.t40\_0817\_c\_q00\_07 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q00\_07 = **.** then q00\_07 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q00\_07;

**run**; \* 12,790 (0.35%);

\* q10\_18;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q10\_18

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q10\_18 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q10\_18 = **.** then q10\_18 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q10\_18;

**run**; \* 66,232 (1.83%);

\* q20\_28;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q20\_28

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q20\_28 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q20\_28 = **.** then q20\_28 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q20\_28;

**run**; \* 98,958 (2.73%);

\* q30\_34;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q30\_34

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q30\_34 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q30\_34 = **.** then q30\_34 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q30\_34;

**run**; \* 9,727 (0.27%);

\* q35\_37;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q35\_37

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q35\_37 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q35\_37 = **.** then q35\_37 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q35\_37;

**run**; \* 5,343 (0.15%);

\* q38\_45;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q38\_45

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q38\_45 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q38\_45 = **.** then q38\_45 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q38\_45;

**run**; \* 150,783 (4.16%);

\* q50\_56;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q50\_56

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q50\_56 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q50\_56 = **.** then q50\_56 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q50\_56;

**run**; \* 38,491 (1.06%);

\* q60\_64;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q60\_64

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q60\_64 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q60\_64 = **.** then q60\_64 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q60\_64;

**run**; \* 22,063 (0.61%);

\* q65\_79;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q65\_79

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q65\_79 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q65\_79 = **.** then q65\_79 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q65\_79;

**run**; \* 101,983 (2.81%);

\* q80\_89;

**proc** **sql**;

create table zio.prediction\_dta\_cm as

select p.\*, q.indi\_dscm\_no, q.q80\_89

from zio.prediction\_dta\_cm as p left join zio.t40\_0817\_c\_q80\_89 as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q80\_89 = **.** then q80\_89 = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table q80\_89;

**run**; \* 21,578 (0.60%);

\* define any congenital malformation;

**data** zio.prediction\_dta\_cm;

set zio.prediction\_dta\_cm;

if q00\_07 = **1** or q10\_18 = **1** or q20\_28 = **1** or q30\_34 = **1** or q35\_37 = **1** or q38\_45 = **1** or q50\_56 = **1** or q60\_64 = **1** or q65\_79 = **1** or q80\_89 = **1** then any\_cm = **1**;

else any\_cm = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm;

table any\_cm;

**run**; \* 463,035 (12.78%);

\* 수도권/비수도권, 소득분위, insurance;

\* 수도권/비수도권 정의;

\* (24.01.25 수정, 광역시와 others로)

서울: 11, 인천: 28, 경기: 41, 부산: 26, 대구: 27, 광주: 29, 대전: 30, 울산: 31;

**data** zio.prediction\_dta\_cm\_bfc;

set zio.prediction\_dta\_cm;

if substr(rvsn\_addr\_cd, **1**, **2**) in ("11", "28", "41", "26", "27", "29", "30", "31") then sudogwon = **1**;

else sudogwon = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc;

table sudogwon;

**run**;

\* 소득분위 정의;

\* 분포 확인;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc;

table calc\_ctrb\_vtile\_fd;

**run**;

**data** zio.prediction\_dta\_cm\_bfc;

set zio.prediction\_dta\_cm\_bfc;

if (calc\_ctrb\_vtile\_fd >= **0** and calc\_ctrb\_vtile\_fd <= **4**) or gaibja\_type = **7** or gaibja\_type = **8** then income\_level = **1**;

if (calc\_ctrb\_vtile\_fd >= **5** and calc\_ctrb\_vtile\_fd <= **8**) then income\_level = **2**;

if (calc\_ctrb\_vtile\_fd >= **9** and calc\_ctrb\_vtile\_fd <= **12**) then income\_level = **3**;

if (calc\_ctrb\_vtile\_fd >= **13** and calc\_ctrb\_vtile\_fd <= **16**) then income\_level = **4**;

if (calc\_ctrb\_vtile\_fd >= **17** and calc\_ctrb\_vtile\_fd <= **20**) then income\_level = **5**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc;

table income\_level;

**run**;

\* type of insurance 정의;

**data** zio.prediction\_dta\_cm\_bfc;

set zio.prediction\_dta\_cm\_bfc;

if gaibja\_type = **1** or gaibja\_type = **2** then insurance\_type = **1**; \* 지역가입자;

if gaibja\_type = **5** or gaibja\_type = **6** then insurance\_type = **2**; \* 직장가입자;

if gaibja\_type = **7** or gaibja\_type = **8** then insurance\_type = **3**; \* 의료급여;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc;

table insurance\_type;

**run**;

\*\*\* Table 1 2차 정의 start \*\*\*

\* Neurodevelopmental outcome;

\* 각 분류별 column 떼서 내림차순 정렬 후 drop dup;

\* 이후 prediction\_dta\_cm\_bfc 에 left join;

\* MDD;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.MDD

from zio.prediction\_dta\_cm\_bfc as p left join zio.t40\_0817\_c\_mdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if MDD = **.** then MDD = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table MDD;

**run**; \* 40,043 (1.11%);

\* CDD;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.CDD

from zio.prediction\_dta\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_cdd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if CDD = **.** then CDD = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table CDD;

**run**; \* 40,153 (1.11%);

\* ADHD;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.ADHD

from zio.prediction\_dta\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_adhd as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if ADHD = **.** then ADHD = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table ADHD;

**run**; \* 25,794 (0.71%);

\* Tics;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.Tics

from zio.prediction\_dta\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_tics as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if Tics = **.** then Tics = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table Tics;

**run**; \* 16,127 (0.45%);

\* EFS;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2 as

select p.\*, q.indi\_dscm\_no, q.EFS

from zio.prediction\_dta\_cm\_bfc\_2 as p left join zio.t40\_0817\_c\_efs as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if EFS = **.** then EFS = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table EFS;

**run**; \* 341,588 (9.43%);

\* define any Neurodevelopmental outcome;

**data** zio.prediction\_dta\_cm\_bfc\_2;

set zio.prediction\_dta\_cm\_bfc\_2;

if mdd = **1** or cdd = **1** or adhd = **1** or tics = **1** or efs = **1** then any\_neruo = **1**;

else any\_neruo = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2;

table any\_neruo;

**run**; \* 421,844 (11.64%);

\*\*\* Table 1 3차 정의 start \*\*\*

\* 결측이 많아 문진변수는 안 쓸 것 같지만 일단 붙여놓자;

\* Examination variables;

\* BMI: G1E\_BMI;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* GFR (ml/min): G1E\_GFR;

\* HbA1c (%): G1E\_HGB;

\* Current or ex-smoker, No (%)

\* 검진 테이블에서 산모-아이 조합별 출산일자에 가장 가까운 검진 한 행만 남기고 drop;

\* study group 1 - table 1에서 정의해둔 g1eq\_0817\_m\_bthclsexm를 prediction\_dta\_cm\_bfc\_2에 붙이기;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2\_exm as

select p.\*, q.\*

from zio.prediction\_dta\_cm\_bfc\_2 as p left join zio.g1eq\_0817\_m\_bthclsexm as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**proc** **means** data=zio.prediction\_dta\_cm\_bfc\_2\_exm n nmiss mean median min max std;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table g1e\_urn\_prot;

**run**;

\* 흡연 정의;

\* (24.05.10) 2002~2008, 2009~ g1e\_hb\_smk mapping 다름. 정의 수정;

**data** zio.prediction\_dta\_cm\_bfc\_2\_exm;

set zio.prediction\_dta\_cm\_bfc\_2\_exm;

if (exmd\_bz\_yyyy >= '2002' and exmd\_bz\_yyyy <= '2008' and g1e\_hb\_smk = **1**)

or (exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **2**)

or q\_smk\_yn = **2** or q\_smk\_yn = **3** then smoke = **1**; else smoke = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table smoke;

**run**;

\* dth (child) 정의;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2\_exm as

select p.\*, q.\*

from zio.prediction\_dta\_cm\_bfc\_2\_exm as p left join user.tg\_dth\_c as q

on p.child\_id = q.indi\_dscm\_no;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2\_exm;

set zio.prediction\_dta\_cm\_bfc\_2\_exm;

if dth\_assmd\_dt ^= **.** then child\_dth = **1**; else child\_dth = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table child\_dth;

**run**;

\* categorical BMI;

**data** zio.prediction\_dta\_cm\_bfc\_2\_exm;

set zio.prediction\_dta\_cm\_bfc\_2\_exm;

if g1e\_bmi ^= **.** and g1e\_bmi >= **18.5** and g1e\_bmi < **25** then bmi\_category = **0**; \* normal (ref);

if g1e\_bmi ^= **.** and g1e\_bmi < **18.5** then bmi\_category = **1**; \* 저체중;

if g1e\_bmi ^= **.** and g1e\_bmi >= **25** then bmi\_category = **2**; \* 비만;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table bmi\_category;

**run**;

\* study group 1, 2, 3 붙이기;

**proc** **sql**;

create table zio.prediction\_dta\_cm\_bfc\_2\_exm as

select p.\*, q.mother\_id, q.child\_id, q.study\_group

from zio.prediction\_dta\_cm\_bfc\_2\_exm as p left join zio.final\_data\_for\_analysis\_sg3 as q

on p.mother\_id = q.mother\_id and p.child\_id = q.child\_id;

**quit**;

**data** zio.prediction\_dta\_cm\_bfc\_2\_exm;

set zio.prediction\_dta\_cm\_bfc\_2\_exm;

if study\_group = **0** or study\_group = **.** then kidney\_disease = **0**; else kidney\_disease = **1**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table kidney\_disease;

**run**;

\* APO 정의;

**data** zio.prediction\_dta\_cm\_bfc\_2\_exm;

set zio.prediction\_dta\_cm\_bfc\_2\_exm;

if gdm = **1** or pe = **1** or pb\_real = **1** or pa = **1** or low\_bth\_wght = **1** then APO = **1**; else APO = **0**;

**run**;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table APO;

**run**;

\* 약제 확인;

**proc** **freq** data=zio.prediction\_dta\_cm\_bfc\_2\_exm;

table HTN\_med

DM\_med

HLD\_med

Diuretic\_med

Antidepressant\_med

Antithrombotic\_med

Dialysis\_related\_med

Steroid\_med

Immunosuppressants\_med

Antiviral\_med

Transplant\_related\_med;

**run**;

**proc** **export** data=zio.prediction\_dta\_cm\_bfc\_2\_exm

outfile='/userdata12/room718/data\_source/user\_data/zio\_data/prediction\_dta.csv'

dbms=csv

replace;

**run**;

# CM Paper) 1. Plots and tables

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (24.07.03) CM paper를 위한 plots, tables code start;

\* Copy final dataset;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3;

**run**;

\* study group 1,2 합치기;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group\_1 = **1** or study\_group\_2 = **1** then study\_group\_1\_2 = **1**; else study\_group\_1\_2 = **0**;

**run**;

\* study\_group 변수의 1, 2 category를 모두 1로 변경;

\* 이제 study\_group 변수는 다음과 같이 categorized 되어있음;

\* study\_group = 1 then KT/ESKD group;

\* study\_group = 3 then CKD group;

\* study\_group = 0 then Healthy (control) group;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group = **2** then study\_group = **1**;

**run**;

\* check study\_group;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group;

**run**; \* ok;

\* smoke 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table g1e\_hb\_smk\_new q\_smk\_yn;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if g1e\_hb\_smk\_new = **1** or q\_smk\_yn = **2** or q\_smk\_yn = **3** then smoke = **1**;

if g1e\_hb\_smk\_new = **0** or q\_smk\_yn = **1** then smoke = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table smoke;

**run**;

\* G1E\_URN\_PROT 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if G1E\_URN\_PROT >= **3** then proturia = **1**;

if G1E\_URN\_PROT = **1** or G1E\_URN\_PROT = **2** then proturia = **0**;

**run**;

\* Baseline characteristics for study group 1+2 -----------------------------------------------------------------------------------------;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group = **1**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**proc** **freq** data=tmp;

table htn;

**proc** **freq** data=tmp;

table dm;

**proc** **freq** data=tmp;

table dspda;

**proc** **freq** data=tmp;

table mi;

**proc** **freq** data=tmp;

table chf;

**proc** **freq** data=tmp;

table cdo;

**proc** **freq** data=tmp;

table tia;

**proc** **freq** data=tmp;

table cld;

**proc** **freq** data=tmp;

table copd;

**proc** **freq** data=tmp;

table Malignancy;

**proc** **freq** data=tmp;

table gdm;

**proc** **freq** data=tmp;

table gdm4;

**proc** **freq** data=tmp;

table gdm5;

**proc** **freq** data=tmp;

table pe;

**proc** **freq** data=tmp;

table ce;

**proc** **freq** data=tmp;

table pa;

**proc** **freq** data=tmp;

table pp;

**proc** **freq** data=tmp;

table np;

**proc** **freq** data=tmp;

table low\_bth\_wght;

**proc** **freq** data=tmp;

table pb\_real; \* preterm birth;

**proc** **freq** data=tmp;

table pb\_mom; \* preterm birth;

**proc** **freq** data=tmp;

table pb\_child; \* preterm birth;

**proc** **freq** data=tmp;

table lga;

**proc** **freq** data=tmp;

table sex\_type;

**run**;

**proc** **freq** data=tmp;

table nicu\_1y;

**run**;

**proc** **freq** data=tmp;

table any\_cm;

**run**;

**proc** **freq** data=tmp;

table q00\_07;

**run**;

**proc** **freq** data=tmp;

table q10\_18;

**run**;

**proc** **freq** data=tmp;

table q20\_28;

**run**;

**proc** **freq** data=tmp;

table q30\_34;

**run**;

**proc** **freq** data=tmp;

table q35\_37;

**run**;

**proc** **freq** data=tmp;

table q38\_45;

**run**;

**proc** **freq** data=tmp;

table q50\_56;

**run**;

**proc** **freq** data=tmp;

table q60\_64;

**run**;

**proc** **freq** data=tmp;

table q65\_79;

**run**;

**proc** **freq** data=tmp;

table q80\_89;

**run**;

**proc** **freq** data=tmp;

table any\_neruo;

**run**;

**proc** **freq** data=tmp;

table mdd;

**run**;

**proc** **freq** data=tmp;

table cdd;

**run**;

**proc** **freq** data=tmp;

table adhd;

**run**;

**proc** **freq** data=tmp;

table tics;

**run**;

**proc** **freq** data=tmp;

table efs;

**run**;

\* Age;

**proc** **freq** data=tmp;

table age\_group;

**run**;

\* BMI;

**proc** **freq** data=tmp;

table bmi\_category;

**run**;

**proc** **freq** data=tmp;

table smoke;

**run**;

**proc** **freq** data=tmp;

table proturia;

**run**;

\* Nulliparity;

**proc** **freq** data=tmp;

table np;

**run**;

\* Family income level;

**proc** **freq** data=tmp;

table income\_level;

**run**;

\* Urbanity, n ;

**proc** **freq** data=tmp;

table sudogwon;

**run**;

\* TABLE 1. Baseline characteristics and pregnancy outcomes of the study population ------------------------------------------------------------------------ ;

\* Age;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* age\_group;

**run**;

\* BMI;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* bmi\_category;

**run**; \* NAs does not divide by study groups;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table bmi\_category;

**run**;

\* Maternal comorbidity - 1;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* htn study\_group \* dm study\_group \* dspda study\_group \* mi study\_group \* chf;

**run**;

\* Maternal comorbidity - 2;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* cdo study\_group \* tia study\_group \* cld study\_group \* copd study\_group \* Malignancy;

**run**;

\* smoke 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table g1e\_hb\_smk\_new q\_smk\_yn;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if g1e\_hb\_smk\_new = **1** or q\_smk\_yn = **2** or q\_smk\_yn = **3** then smoke = **1**;

if g1e\_hb\_smk\_new = **0** or q\_smk\_yn = **1** then smoke = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if g1e\_gfr > **900** and g1e\_gfr <= **1000**;

**run**;

\* G1E\_URN\_PROT 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if G1E\_URN\_PROT >= **3** then proturia = **1**;

if G1E\_URN\_PROT = **1** or G1E\_URN\_PROT = **2** then proturia = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table proturia;

**run**;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* GFR (ml/min): G1E\_GFR;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* Current or ex-smoker, No (%);

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group = **3**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**proc** **freq** data=tmp;

table proturia;

**run**;

**proc** **freq** data=tmp;

table smoke;

**run**;

\* Nulliparity;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* np;

**run**;

\* Pregnancy outcomes;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* gdm study\_group \* pe study\_group \* pb\_real study\_group \* ce study\_group \* pa study\_group \* pp;

**run**;

\* Family income level;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* income\_level;

**run**;

\* Urbanity, n ;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* sudogwon;

**run**;

\* Neonatal outcomes;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* sex\_type study\_group \* low\_bth\_wght;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_CM;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table low\_bth\_wght;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* LGA study\_group \* nicu\_1y study\_group \* child\_dth;

**run**;

\* ------------------------------------------------------------------------------------------------------------------------------------------ ;

\* Table 2. Prevalence of congenital malformations by maternal kidney disease ---------------------------------------------------------------------------- ;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* any\_cm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q00\_07;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q10\_18;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q20\_28;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q30\_34;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q35\_37;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q38\_45;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q50\_56;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q60\_64;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q65\_79;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q80\_89;

**run**;

\* Table S2. Yearly prevalence rates of congenital malformations (2008 ~ 2017) --------------------------------------------------------------------- ;

\* create year variable;

**data** zio.final\_data\_for\_analysis\_sg3\_CM;

set zio.final\_data\_for\_analysis\_sg3\_CM;

q00\_07\_year = substr(q00\_07\_mdcare\_strt\_dt, **1**, **4**);

q10\_18\_year = substr(q10\_18\_mdcare\_strt\_dt, **1**, **4**);

q20\_28\_year = substr(q20\_28\_mdcare\_strt\_dt, **1**, **4**);

q30\_34\_year = substr(q30\_34\_mdcare\_strt\_dt, **1**, **4**);

q35\_37\_year = substr(q35\_37\_mdcare\_strt\_dt, **1**, **4**);

q38\_45\_year = substr(q38\_45\_mdcare\_strt\_dt, **1**, **4**);

q50\_56\_year = substr(q50\_56\_mdcare\_strt\_dt, **1**, **4**);

q60\_64\_year = substr(q60\_64\_mdcare\_strt\_dt, **1**, **4**);

q65\_79\_year = substr(q65\_79\_mdcare\_strt\_dt, **1**, **4**);

q80\_89\_year = substr(q80\_89\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q00\_07\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q10\_18\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q20\_28\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q30\_34\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q35\_37\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q38\_45\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q50\_56\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q60\_64\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q65\_79\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table study\_group \* q80\_89\_year;

**run**;

**data** zio.t40\_0817\_c\_comorbidity;

set zio.t40\_0817\_c\_comorbidity;

year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c\_comorbidity;

table year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_CM;

table byear;

**run**;

**data** zio.t40\_0817\_c\_q00\_07;

set zio.t40\_0817\_c\_q00\_07;

q00\_07\_year = substr(q00\_07\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c\_q00\_07;

table q00\_07 \* q00\_07\_year;

**run**;

**data** zio.t40\_0817\_c\_q10\_18;

set zio.t40\_0817\_c\_q10\_18;

q10\_18\_year = substr(q10\_18\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c\_q10\_18;

table q10\_18 \* q10\_18\_year;

**run**;

**data** zio.t40\_0817\_c\_q20\_28;

set zio.t40\_0817\_c\_q20\_28;

q20\_28\_year = substr(q20\_28\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c\_q20\_28;

table q20\_28 \* q20\_28\_year;

**run**;

**data** zio.t40\_0817\_c\_q30\_34;

set zio.t40\_0817\_c\_q30\_34;

q30\_34\_year = substr(q30\_34\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_c\_q30\_34;

table q30\_34 \* q30\_34\_year;

**run**;

\* 16, 17 따로 확인하기;

**data** zio.t40\_0817\_c\_comorbidity\_1617;

set zio.t40\_0817\_c\_comorbidity;

if year = '2016' or year = '2017';

**run**;

\* 16, 17은 아이디가 다 .이다,, 아이디를 붙인 t20 table에 문제가 있나?

\* t20 16, 17 확인하기;

**data** zio.t20\_0817\_c\_1617;

set zio.t20\_0817\_c;

if year = '2016' or year = '2017';

**run**;

\* m table도 확인하기;

**data** zio.t40\_0817\_m\_comorbidity;

set zio.t40\_0817\_m\_comorbidity;

year = substr(mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.t40\_0817\_m\_comorbidity;

table year;

**run**;

**data** zio.t40\_0817\_m\_comorbidity\_1617;

set zio.t40\_0817\_m\_comorbidity;

if year = '2016' or year = '2017';

**run**;

# NEURO Paper) 1. Plots and tables

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (24.07.15) NEURO, APO paper를 위한 plots, tables code start;

\* Copy final dataset;

**data** zio.final\_data\_for\_analysis\_sg3\_ne;

set zio.final\_data\_for\_analysis\_sg3;

**run**;

\* check study\_group;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group;

**run**; \* ok;

\* TABLE 1. Baseline characteristics and pregnancy outcomes of the study population ------------------------------------------------------------------------ ;

\* Age;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* age\_group;

**run**;

\* BMI;

/\*proc freq data=zio.final\_data\_for\_analysis\_sg3\_ne; \*/

/\*table study\_group \* bmi\_category; \*/

/\*run; \* NAs does not divide by study groups; \*/

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **1**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

\* Maternal comorbidity - 1;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* htn study\_group \* dm study\_group \* dspda study\_group \* mi study\_group \* chf;

**run**;

\* Maternal comorbidity - 2;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* cdo study\_group \* tia study\_group \* cld study\_group \* copd study\_group \* Malignancy;

**run**;

\* smoke 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_ne;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if exmd\_bz\_yyyy ^= **.** and exmd\_bz\_yyyy >= '2009' and g1e\_hb\_smk = **1** then g1e\_hb\_smk\_new = **0**;

if g1e\_hb\_smk = **2** then g1e\_hb\_smk\_new = **1**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table g1e\_hb\_smk\_new q\_smk\_yn;

**run**;

**data** zio.final\_data\_for\_analysis\_sg3\_ne;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if g1e\_hb\_smk\_new = **1** or q\_smk\_yn = **2** or q\_smk\_yn = **3** then smoke = **1**;

if g1e\_hb\_smk\_new = **0** or q\_smk\_yn = **1** then smoke = **0**;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **1**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if g1e\_gfr > **900** and g1e\_gfr <= **1000**;

**run**;

\* G1E\_URN\_PROT 변수 통합;

**data** zio.final\_data\_for\_analysis\_sg3\_ne;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if G1E\_URN\_PROT >= **3** then proturia = **1**;

if G1E\_URN\_PROT = **1** or G1E\_URN\_PROT = **2** then proturia = **0**;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table proturia;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* proturia;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **1**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* proturia;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* proturia;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* proturia;

**run**;

\* Serum creatinine (mg/dL): G1E\_CRTN;

\* GFR (ml/min): G1E\_GFR;

\* Urine albuminuria: G1E\_URN\_PROT, 1: 음성, 2: 약양성, 3: 양성 (+1), 4: 양성 (+2), 5: 양성 (+3), 6: 양성 (+4);

\* Current or ex-smoker, No (%);

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **0**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**proc** **freq** data=tmp;

table proturia;

**run**;

**proc** **freq** data=tmp;

table smoke;

**run**;

\* Nulliparity;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* np;

**run**;

\* Pregnancy outcomes;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* gdm study\_group \* pe study\_group \* pb\_real study\_group \* ce study\_group \* pa study\_group \* pp;

**run**;

\* gdm 따로;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* gdm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* gdm4;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* gdm5;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table gdm;

**run**;

\* pb\_real, pb 각 체크;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* pb;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* pb\_mom;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* pb\_child;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* pb\_real;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* pb\_child;

**run**;

**proc** **sql**;

select count(unique child\_id)

from tmp

where exp\_date\_new = **.**;

**quit**; \* ;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if pb\_child = **.**;

**run**;

\* Family income level;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* income\_level;

**run**;

\* Urbanity, n ;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* sudogwon;

**run**;

\* Neonatal outcomes;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* sex\_type study\_group \* low\_bth\_wght;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_ne;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table low\_bth\_wght;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* LGA study\_group \* nicu\_1y study\_group \* child\_dth;

**run**;

\* ------------------------------------------------------------------------------------------------------------------------------------------ ;

\* Table 2. Prevalence of congenital malformations by maternal kidney disease ---------------------------------------------------------------------------- ;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* any\_cm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q00\_07;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q10\_18;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q20\_28;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q30\_34;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q35\_37;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q38\_45;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q50\_56;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q60\_64;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q65\_79;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* q80\_89;

**run**;

\* Yearly prevalence rates of neurodevelopmental outcomes (2008 ~ 2017) ;

\* create year variable;

**data** zio.final\_data\_for\_analysis\_sg3\_ne;

set zio.final\_data\_for\_analysis\_sg3\_ne;

mdd\_year = substr(mdd\_mdcare\_strt\_dt, **1**, **4**);

cdd\_year = substr(cdd\_mdcare\_strt\_dt, **1**, **4**);

adhd\_year = substr(adhd\_mdcare\_strt\_dt, **1**, **4**);

tics\_year = substr(tics\_mdcare\_strt\_dt, **1**, **4**);

efs\_year = substr(efs\_mdcare\_strt\_dt, **1**, **4**);

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* mdd\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* cdd\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* adhd\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* tics\_year;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_ne;

table study\_group \* efs\_year;

**run**;

\* Incidence rate (per million population/year);

# APO Paper) 1. Plots and tables

OPTIONS VALIDVARNAME=ANY;

LIBNAME user "/userdata12/room718/data\_source/user\_data";

LIBNAME zio "/userdata12/room718/data\_source/user\_data/zio";

LIBNAME ziodata "/userdata12/room718/data\_source/user\_data/zio\_data";

\* (24.08.01) APO paper를 위한 plots, tables code start;

\* Copy final dataset;

**data** zio.final\_data\_for\_analysis\_sg3\_apo;

set zio.final\_data\_for\_analysis\_sg3\_bmi;

**run**;

\* check study\_group;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group;

**run**; \* ok;

\* APO, n;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* APO;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **1**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* bmi\_category;

**run**;

\* smoke;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **0**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **1**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **2**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **3**;

**run**;

**proc** **freq** data=tmp;

table study\_group \* smoke;

**run**;

\* bmi\_category;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* bmi\_category;

**run**;

\* Nulliparity;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* np;

**run**;

\* Family income level;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* income\_level;

**run**;

\* Urbanity, n ;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* sudogwon;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* htn;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* dm;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* dspda;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* ce;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* sex\_type;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **0**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **1**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **2**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

**data** tmp;

set zio.final\_data\_for\_analysis\_sg3\_apo;

if study\_group = **3**;

**run**;

**proc** **means** data=tmp n nmiss mean median min max std;

**run**;

\* t-test and chi-square test;

\* group이 3개 이상이므로,

\* continuous ~ categorical (study group으로 고정) 일 경우 t test 대신 ANOVA로 변경하여 진행;

\* categorical ~ categorical (study group으로 고정) 일 경우 chi square test 진행;

\* ANOVA for continuous variables;

**proc** **glm** data=zio.final\_data\_for\_analysis\_sg3\_apo;

class study\_group;

model g1e\_bmi = study\_group;

**run**;

**proc** **glm** data=zio.final\_data\_for\_analysis\_sg3\_apo;

class study\_group;

model bth\_wght = study\_group;

**run**;

\* chi square test for categorical variables;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* age\_group / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* np / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* smoke / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* bmi\_category / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* income\_level / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* sudogwon / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* htn / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* dm / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* dspda / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* ce / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* sex\_type / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* APO / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* gdm / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* pe / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* pb\_real / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* pa / chisq expected;

**run**;

**proc** **freq** data=zio.final\_data\_for\_analysis\_sg3\_apo;

table study\_group \* low\_bth\_wght / chisq expected;

**run**;