```
%*************************************************************************
*;
%*  Date: January 2016
*;
%*
*;
%*  This code is written by Bing Li along with Danielle Southern & Hude
*;
%*  Quan.  The code was used in a study titled, "DERIVING ICD-10 CODES
*;
%*  FOR PATIENT SAFETY INDICATORS FOR LARGE-SCALE SURVEILLANCE USING
*;
%*  ADMINISTRATIVE HOSPITAL DATA"
*;
%*
*;
%*************************************************************************
*;
/* ICD-10-CA for PSI ... BY D Southern et al. */
data a;
set a.sample;

array dxtp{25} $ 1 dxtype1-dxtype25;
d2=0;
do i=1 to 25;
If dxtp{i}='2' then d2=1;
end;

data a2;
set a;
/************/
/* may need to change the “n=25” to a different number
/* may need to change” dx_type_n” variable name & “dxcoden” variable name
/************/
array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

/* numbers*/
do i=1 to 25;
If sex='F' then female=1; else female=0;
If pt_age>=18 then age18=1; else age18=0;
If (pt_age<1 & pt_age~=.) then age0=1; else age0=0;
End;

/* FULL COHORT - RUN ON ALL DISCHARGES */
do i=1 to 25;
If dxtp{i}='2'& (substr(dx{i},1,4)='A020'| substr(dx{i},1,4)='A021'|
substr(dx{i},1,4)='A044'|
substr(dx{i},1,4)= 'A045'| substr(dx{i},1,4)='A047'|
substr(dx{i},1,4)='A048'|
substr(dx{i},1,4)='A049'| substr(dx{i},1,4)='A080'| substr(dx{i},1,4)=
'A081'|
substr(dx{i},1,4)='A410'| substr(dx{i},1,4)='A411'|
substr(dx{i},1,4)='A412'|
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substr(dx{i},1,4)='A414'| substr(dx{i},1,5)='A4150'| substr(dx{i},1,5)=
'A4151'|
substr(dx{i},1,5)='A4152'| substr(dx{i},1,5)='A4158'|
substr(dx{i},1,5)='A4180'|
substr(dx{i},1,5)='A4188'| substr(dx{i},1,4)= 'A419'|
substr(dx{i},1,4)='A490'|
substr(dx{i},1,4)='B309'| substr(dx{i},1,4)='B373'|
substr(dx{i},1,4)='B374'|
substr(dx{i},1,4)='B377'| substr(dx{i},1,5)= 'B3780'|
substr(dx{i},1,5)='B3781'|
substr(dx{i},1,4)='B956'| substr(dx{i},1,4)='B957'|
substr(dx{i},1,4)='B958'|
substr(dx{i},1,4)= 'B961'| substr(dx{i},1,4)='B962'|
substr(dx{i},1,4)='B964'|
substr(dx{i},1,4)='B965') then a=1;
If dxtp{i}='2'& (substr(dx{i},1,4)='B9681'| substr(dx{i},1,5)='B9688'|
substr(dx{i},1,4)= 'B974'|
substr(dx{i},1,3)='D62'| substr(dx{i},1,4)='D683'|
substr(dx{i},1,5)='E1010'|
substr(dx{i},1,5)='E1063'| substr(dx{i},1,5)= 'E1064'|
substr(dx{i},1,4)='E110'|
substr(dx{i},1,5)='E1110'| substr(dx{i},1,5)='E1111'|
substr(dx{i},1,5)='E1163'|
substr(dx{i},1,5)='E1164'| substr(dx{i},1,5)= 'E1363'|
substr(dx{i},1,5)='E1463'|
substr(dx{i},1,3)='E15'| substr(dx{i},1,4)='E160'|
substr(dx{i},1,4)='E272'|
substr(dx{i},1,4)= 'E860'| substr(dx{i},1,4)='E868'|
substr(dx{i},1,4)='E877'|
substr(dx{i},1,4)='E883'| substr(dx{i},1,4)='E891'|
substr(dx{i},1,4)='E892'|
substr(dx{i},1,4)= 'E893'| substr(dx{i},1,4)='F050'|
substr(dx{i},1,4)='F051'|
substr(dx{i},1,4)='F058'| substr(dx{i},1,4)='F059'| substr(dx{i},1,4)=
'G003'|
substr(dx{i},1,4)='G372'| substr(dx{i},1,4)='G540'|
substr(dx{i},1,4)='G562'|
substr(dx{i},1,4)='G971'| substr(dx{i},1,4)='G972') then b=1;
If dxtp{i}='2'& (substr(dx{i},1,4)= 'G978'| substr(dx{i},1,4)='H103'|
substr(dx{i},1,4)='H105'|
substr(dx{i},1,4)= 'H108'| substr(dx{i},1,4)='H109'| substr(dx{i},1,4)=
'H160'|
substr(dx{i},1,5)='H5980'| substr(dx{i},1,5)='H5988'|
substr(dx{i},1,4)='H910'|
substr(dx{i},1,4)='I200'| substr(dx{i},1,4)='I201'| substr(dx{i},1,5)=
'I2088'|
substr(dx{i},1,4)='I209'| substr(dx{i},1,4)='I210'|
substr(dx{i},1,4)='I211'|
substr(dx{i},1,4)= 'I212'| substr(dx{i},1,4)='I213'|
substr(dx{i},1,4)='I214'|
substr(dx{i},1,4)='I219'| substr(dx{i},1,4)='I220'|
substr(dx{i},1,4)='I221'|
substr(dx{i},1,4)= 'I228'| substr(dx{i},1,4)='I229'|
substr(dx{i},1,4)='I260'|
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substr(dx{i},1,4)='I269'| substr(dx{i},1,4)='I461'| substr(dx{i},1,4)=
'I469'|
substr(dx{i},1,4)='I472'| substr(dx{i},1,4)='I481') then c=1;
If dxtp{i}='2'& (substr(dx{i},1,5)='I4900'| substr(dx{i},1,5)='I4901'|
substr(dx{i},1,4)='I500'|
substr(dx{i},1,4)= 'I501'| substr(dx{i},1,4)='I509'|
substr(dx{i},1,4)='I801'|
substr(dx{i},1,4)='I802'| substr(dx{i},1,4)='I822'| substr(dx{i},1,4)=
'I952'|
substr(dx{i},1,4)='I971'| substr(dx{i},1,4)='I978'|
substr(dx{i},1,4)='I979'|
substr(dx{i},1,4)='J150'| substr(dx{i},1,4)='J151'| substr(dx{i},1,4)=
'J152'|
substr(dx{i},1,4)='J155'| substr(dx{i},1,4)='J156'|
substr(dx{i},1,4)='J159'|
substr(dx{i},1,4)='J181'| substr(dx{i},1,4)= 'J210'|
substr(dx{i},1,5)='J3801'|
substr(dx{i},1,5)='J3802'| substr(dx{i},1,5)='J3809'|
substr(dx{i},1,4)='J690'|
substr(dx{i},1,4)='J698'| substr(dx{i},1,3)= 'J81'|
substr(dx{i},1,4)='J853'|
substr(dx{i},1,4)='J860'| substr(dx{i},1,4)='J869'|
substr(dx{i},1,4)='J942'|
substr(dx{i},1,5)= 'J9500'| substr(dx{i},1,5)='J9501'|
substr(dx{i},1,5)='J9502'|
substr(dx{i},1,5)='J9503'| substr(dx{i},1,5)='J9508') then d=1;
If dxtp{i}='2'& (substr(dx{i},1,4)='J951'| substr(dx{i},1,4)='J952'|
substr(dx{i},1,4)='J955'|
substr(dx{i},1,5)='J9580'| substr(dx{i},1,5)='J9581'|
substr(dx{i},1,5)='J9588'|
substr(dx{i},1,4)='J959'| substr(dx{i},1,4)='J960'|
substr(dx{i},1,4)='K223'|
substr(dx{i},1,4)='K650'| substr(dx{i},1,4)='K910'|
substr(dx{i},1,4)='K913'|
substr(dx{i},1,4)='L890'| substr(dx{i},1,4)='L891'|
substr(dx{i},1,4)='L892'|
substr(dx{i},1,4)='L893'| substr(dx{i},1,4)='L898'| substr(dx{i},1,4)=
'L899'|
substr(dx{i},1,4)='M966'| substr(dx{i},1,4)='M968'|
substr(dx{i},1,4)='M969'|
substr(dx{i},1,4)='N390'| substr(dx{i},1,4)='N990'| substr(dx{i},1,4)=
'N991'|
substr(dx{i},1,4)='N994'| substr(dx{i},1,5)='N9951'|
substr(dx{i},1,4)='N998'|
substr(dx{i},1,4)='N999'| substr(dx{i},1,4)='O086' |
substr(dx{i},1,4)='P033') then e=1;
If dxtp{i}='2'& (substr(dx{i},1,5)='O2950'| substr(dx{i},1,5)='O7020'|
substr(dx{i},1,5)='O7030'|
substr(dx{i},1,5)='O7090'| substr(dx{i},1,5)='O7110'|
substr(dx{i},1,5)='O7111'|
substr(dx{i},1,5)='O7118'| substr(dx{i},1,5)='O7130'|
substr(dx{i},1,5)='O7140' |
substr(dx{i},1,5)='O7150'| substr(dx{i},1,5)='O7160'|
substr(dx{i},1,5)='O7170'|
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substr(dx{i},1,5)='O7180'| substr(dx{i},1,5)='O7200'|
substr(dx{i},1,5)='O7210'|
substr(dx{i},1,5)='O7220'| substr(dx{i},1,5)='O7420'|
substr(dx{i},1,5)='O7430'|
substr(dx{i},1,5)='O7450'| substr(dx{i},1,5)='O7460'|
substr(dx{i},1,5)='O7480'|
substr(dx{i},1,5)='O7510'| substr(dx{i},1,5)='O7530'|
substr(dx{i},1,5)='O7540'|
substr(dx{i},1,5)='O7560'| substr(dx{i},1,5)='O8500'| substr(dx{i},1,5)=
'O8600'|
substr(dx{i},1,5)='O8610'| substr(dx{i},1,5)='O8620'|
substr(dx{i},1,5)='O8630'|
substr(dx{i},1,5)='O8680'| substr(dx{i},1,5)= 'O8710'|
substr(dx{i},1,5)='O8940'|
substr(dx{i},1,5)='O8950'| substr(dx{i},1,5)='O8980'|
substr(dx{i},1,5)='O9000'|
substr(dx{i},1,5)='O9010'| substr(dx{i},1,5)='O9020') then f=1;
If dxtp{i}='2'& (substr(dx{i},1,4)='P120'| substr(dx{i},1,4)='P123'|
substr(dx{i},1,4)='P128'| substr(dx{i},1,4)= 'P134'|
substr(dx{i},1,4)='P143'|
substr(dx{i},1,4)='P154'| substr(dx{i},1,4)='P158'|
substr(dx{i},1,4)='P360'|
substr(dx{i},1,4)= 'P361'| substr(dx{i},1,4)='P362'|
substr(dx{i},1,4)='P363'|
substr(dx{i},1,4)='P364'| substr(dx{i},1,4)='P368'|
substr(dx{i},1,4)='P369'|
substr(dx{i},1,3)= 'P38'| substr(dx{i},1,4)='R571'|
substr(dx{i},1,4)='R572'|
substr(dx{i},1,4)='R578'| substr(dx{i},1,4)='S000'| substr(dx{i},1,4)=
'S001'|
substr(dx{i},1,4)='S002'| substr(dx{i},1,4)='S003'|
substr(dx{i},1,4)='S004'|
substr(dx{i},1,4)='S005'| substr(dx{i},1,4)='S007'| substr(dx{i},1,4)=
'S008'|
substr(dx{i},1,4)='S009'| substr(dx{i},1,5)='S0100' |
substr(dx{i},1,5)='S0101'|
substr(dx{i},1,5)= 'S0110'| substr(dx{i},1,5)='S0120'|
substr(dx{i},1,5)='S0130' |
substr(dx{i},1,5)='S0140'| substr(dx{i},1,5)= 'S0150'|
substr(dx{i},1,5)='S0170'|
substr(dx{i},1,5)='S0180' | substr(dx{i},1,5)='S0190' |
substr(dx{i},1,4)='S025' |
substr(dx{i},1,4)='S030' | substr(dx{i},1,4)='S050' |
substr(dx{i},1,4)='S051' |
substr(dx{i},1,4)='S058' | substr(dx{i},1,4)='S059' |
substr(dx{i},1,4)='S060' |
substr(dx{i},1,4)='S061' | substr(dx{i},1,5)='S0625' |
substr(dx{i},1,5)='S0635' |
substr(dx{i},1,4)='S064' | substr(dx{i},1,4)='S065' |
substr(dx{i},1,4)='S066' |
substr(dx{i},1,5)='S0685' | substr(dx{i},1,4)='S069' |
substr(dx{i},1,4)='S090' |
substr(dx{i},1,4)='S098' | substr(dx{i},1,4)='S099' |
substr(dx{i},1,4)='S101' |
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substr(dx{i},1,4)='S109' | substr(dx{i},1,5)='S1348' |
substr(dx{i},1,5)='S1438' |
substr(dx{i},1,4)='S202' | substr(dx{i},1,4)='S204' |
substr(dx{i},1,4)='S208' |
substr(dx{i},1,4)='S300' | substr(dx{i},1,4)='S301' |
substr(dx{i},1,5)='S3080' |
substr(dx{i},1,5)='S3081' | substr(dx{i},1,5)='S3088' |
substr(dx{i},1,4)='S309' |
substr(dx{i},1,4)='S335' | substr(dx{i},1,4)='S351' |
substr(dx{i},1,4)='S352' |
substr(dx{i},1,4)='S355' |substr(dx{i},1,5)='S3908' |
substr(dx{i},1,4)='S398' |
substr(dx{i},1,4)='S399' | substr(dx{i},1,4)='S400' |
substr(dx{i},1,4)='S408' |
substr(dx{i},1,4)='S409' | substr(dx{i},1,5)='S4110' |
substr(dx{i},1,5)='S4111' |
substr(dx{i},1,5)='S4600' | substr(dx{i},1,5)='S4608' |
substr(dx{i},1,4)='S497' |
substr(dx{i},1,4)='S498' | substr(dx{i},1,4)='S499' |
substr(dx{i},1,4)='S500' |
substr(dx{i},1,4)='S501' | substr(dx{i},1,4)='S507' |
substr(dx{i},1,4)='S508' |
substr(dx{i},1,4)='S509' | substr(dx{i},1,5)='S5100' |
substr(dx{i},1,5)='S5101' |
substr(dx{i},1,5)='S5170' | substr(dx{i},1,5)='S5180' |
substr(dx{i},1,5)='S5190' |
substr(dx{i},1,4)='S598' | substr(dx{i},1,4)='S599' |
substr(dx{i},1,4)='S600' |
substr(dx{i},1,4)='S602' | substr(dx{i},1,4)='S607' |
substr(dx{i},1,4)='S608' |
substr(dx{i},1,4)='S609' | substr(dx{i},1,5)='S6100' |
substr(dx{i},1,5)='S6170' |
substr(dx{i},1,5)='S6180' | substr(dx{i},1,5)='S6190' |
substr(dx{i},1,5)='S6359' |
substr(dx{i},1,4)='S698' | substr(dx{i},1,4)='S699' |
substr(dx{i},1,4)='S700' |
substr(dx{i},1,4)='S701' | substr(dx{i},1,4)='S708' |
substr(dx{i},1,4)='S709' |
substr(dx{i},1,5)='S7110' | substr(dx{i},1,5)='S7111' |
substr(dx{i},1,5)='S7418' |
substr(dx{i},1,4)='S750' | substr(dx{i},1,4)='S799' |
substr(dx{i},1,4)='S800' |
substr(dx{i},1,4)='S801' | substr(dx{i},1,4)='S807' |
substr(dx{i},1,4)='S808' |
substr(dx{i},1,4)='S809' | substr(dx{i},1,5)='S8100' |
substr(dx{i},1,5)='S8101' |
substr(dx{i},1,5)='S8180' | substr(dx{i},1,5)='S8181' |
substr(dx{i},1,5)='S8190' |
substr(dx{i},1,5)='S8191' | substr(dx{i},1,4)='S836' |
substr(dx{i},1,4)='S898' |
substr(dx{i},1,4)='S899' | substr(dx{i},1,4)='S900' |
substr(dx{i},1,4)='S901' |
substr(dx{i},1,4)='S903' | substr(dx{i},1,4)='S907' |
substr(dx{i},1,4)='S908' |
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substr(dx{i},1,4)='S909' | substr(dx{i},1,5)='S9100' |
substr(dx{i},1,5)='S9110' |
substr(dx{i},1,5)='S9120' | substr(dx{i},1,5)='S9130' |
substr(dx{i},1,5)='S9349' |
substr(dx{i},1,4)='S998' | substr(dx{i},1,4)='S999' |
substr(dx{i},1,4)='T001' |
substr(dx{i},1,4)='T008' | substr(dx{i},1,4)='T009' |
substr(dx{i},1,4)='T090' |
substr(dx{i},1,4)='T110' | substr(dx{i},1,4)='T111' |
substr(dx{i},1,4)='T130' |
substr(dx{i},1,4)='T131' | substr(dx{i},1,4)='T140' |
substr(dx{i},1,4)='T149' |
substr(dx{i},1,3)= 'T16'| substr(dx{i},1,4)='T172'| substr(dx{i},1,4)=
'T173'|
substr(dx{i},1,4)='T174'| substr(dx{i},1,4)='T175'|
substr(dx{i},1,4)='T178'|
substr(dx{i},1,4)='T179'| substr(dx{i},1,4)='T180') then g=1;
If dxtp{i}='2'& (substr(dx{i},1,4)= 'T181'| substr(dx{i},1,4)='T182'|
substr(dx{i},1,4)='T183'| substr(dx{i},1,4)='T189'|
substr(dx{i},1,4)='T190'|
substr(dx{i},1,4)= 'T191'| substr(dx{i},1,4)='T200'| substr(dx{i},1,4)=
'T202'|
substr(dx{i},1,4)='T210'| substr(dx{i},1,4)= 'T211'|
substr(dx{i},1,4)='T212'|
substr(dx{i},1,4)= 'T213'| substr(dx{i},1,4)='T220'| substr(dx{i},1,4)=
'T224'|
substr(dx{i},1,4)='T230'| substr(dx{i},1,4)= 'T232'|
substr(dx{i},1,4)='T240'|
substr(dx{i},1,4)= 'T242'| substr(dx{i},1,4)='T250'| substr(dx{i},1,4)=
'T252'|
substr(dx{i},1,4)='T282'| substr(dx{i},1,4)= 'T360'|
substr(dx{i},1,4)='T361'|
substr(dx{i},1,4)= 'T365'| substr(dx{i},1,4)='T368'| substr(dx{i},1,4)=
'T369'|
substr(dx{i},1,4)='T378'| substr(dx{i},1,4)= 'T380'|
substr(dx{i},1,4)='T383'|
substr(dx{i},1,4)= 'T390'| substr(dx{i},1,4)='T391'|
substr(dx{i},1,4)='T393'|
substr(dx{i},1,4)='T398'| substr(dx{i},1,4)='T402'|
substr(dx{i},1,4)='T403'|
substr(dx{i},1,4)= 'T404'| substr(dx{i},1,4)='T406'|
substr(dx{i},1,4)='T412'|
substr(dx{i},1,4)= 'T413'| substr(dx{i},1,4)='T420'| substr(dx{i},1,4)=
'T421'|
substr(dx{i},1,4)='T424'| substr(dx{i},1,4)='T426'|
substr(dx{i},1,4)='T427'|
substr(dx{i},1,4)='T430'| substr(dx{i},1,4)='T432'| substr(dx{i},1,4)=
'T434'|
substr(dx{i},1,4)='T435'| substr(dx{i},1,4)='T438'|
substr(dx{i},1,4)='T445'|
substr(dx{i},1,4)='T447'| substr(dx{i},1,4)= 'T450'|
substr(dx{i},1,4)='T451'|
substr(dx{i},1,4)='T455'| substr(dx{i},1,4)='T457'|
substr(dx{i},1,4)='T458'|
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substr(dx{i},1,4)='T460' | substr(dx{i},1,4)='T461'|
substr(dx{i},1,4)='T462'|
substr(dx{i},1,4)= 'T464'| substr(dx{i},1,4)='T465'|
substr(dx{i},1,4)='T474'|
substr(dx{i},1,4)='T480'| substr(dx{i},1,4)='T486'| substr(dx{i},1,4)=
'T490'|
substr(dx{i},1,4)='T501'| substr(dx{i},1,4)='T502'|
substr(dx{i},1,4)='T503'|
substr(dx{i},1,4)='T508'| substr(dx{i},1,4)='T509' |
substr(dx{i},1,3)='T71' |
substr(dx{i},1,4)='T788'| substr(dx{i},1,4)='T792' |
substr(dx{i},1,4)='T793' |
substr(dx{i},1,4)='T796' | substr(dx{i},1,4)='T797' |
substr(dx{i},1,4)='T798'|
substr(dx{i},1,4)='T800') then h=1;
If dxtp{i}='2'& (substr(dx{i},1,4)='T801'| substr(dx{i},1,4)='T802'|
substr(dx{i},1,4)='T803'| substr(dx{i},1,4)='T805'|
substr(dx{i},1,4)='T806'|
substr(dx{i},1,4)='T808'| substr(dx{i},1,4)= 'T809'|
substr(dx{i},1,4)='T810'|
substr(dx{i},1,4)='T811'| substr(dx{i},1,4)='T812'|
substr(dx{i},1,4)='T813'|
substr(dx{i},1,4)='T814'| substr(dx{i},1,5)='T8152'|
substr(dx{i},1,5)='T8158'|
substr(dx{i},1,5)= 'T8159'| substr(dx{i},1,4)='T816'|
substr(dx{i},1,4)='T817'|
substr(dx{i},1,5)='T8180'| substr(dx{i},1,5)='T8181'| substr(dx{i},1,5)=
'T8182'|
substr(dx{i},1,5)='T8188'| substr(dx{i},1,4)='T819'|
substr(dx{i},1,4)='T820'|
substr(dx{i},1,4)='T821'| substr(dx{i},1,4)='T822'|
substr(dx{i},1,4)='T823'|
substr(dx{i},1,4)='T824'| substr(dx{i},1,4)= 'T825'|
substr(dx{i},1,4)='T826'|
substr(dx{i},1,4)='T827'| substr(dx{i},1,4)='T828'|
substr(dx{i},1,4)='T829'|
substr(dx{i},1,4)= 'T830'| substr(dx{i},1,4)='T831'|
substr(dx{i},1,4)='T832'|
substr(dx{i},1,4)='T833'| substr(dx{i},1,4)='T834'|
substr(dx{i},1,4)='T835'|
substr(dx{i},1,4)='T836'| substr(dx{i},1,4)='T838'|
substr(dx{i},1,4)='T839'|
substr(dx{i},1,5)='T8400'| substr(dx{i},1,5)='T8403'|
substr(dx{i},1,5)='T8404'|
substr(dx{i},1,5)='T8410') then j=1;
If dxtp{i}='2'& (substr(dx{i},1,5)='T8411'| substr(dx{i},1,5)='T8413'|
substr(dx{i},1,5)='T8414'| substr(dx{i},1,5)='T8415'| substr(dx{i},1,5)=
'T8419'|
substr(dx{i},1,5)='T8422'| substr(dx{i},1,5)='T8423'| substr(dx{i},1,5)=
'T8424'|
substr(dx{i},1,5)='T8428'| substr(dx{i},1,4)= 'T843'|
substr(dx{i},1,4)='T844'|
substr(dx{i},1,5)='T8453'| substr(dx{i},1,5)='T8454'|
substr(dx{i},1,5)='T8460'|
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```
substr(dx{i},1,5)='T8461'| substr(dx{i},1,5)= 'T8463'|
substr(dx{i},1,5)='T8464'|
substr(dx{i},1,5)='T8465'| substr(dx{i},1,5)='T8468'|
substr(dx{i},1,4)='T847'|
substr(dx{i},1,4)= 'T848'| substr(dx{i},1,4)='T849'|
substr(dx{i},1,4)='T850'|
substr(dx{i},1,4)='T851'| substr(dx{i},1,4)='T852'|
substr(dx{i},1,4)='T853'|
substr(dx{i},1,4)='T855'| substr(dx{i},1,4)= 'T856'|
substr(dx{i},1,4)='T857'|
substr(dx{i},1,4)='T858'| substr(dx{i},1,4)='T859'|
substr(dx{i},1,5)='T8742'|
substr(dx{i},1,5)= 'T8746'| substr(dx{i},1,5)='T8747'|
substr(dx{i},1,5)='T8748'|
substr(dx{i},1,5)='T8752'| substr(dx{i},1,5)='T8756'|
substr(dx{i},1,5)='T8757'|
substr(dx{i},1,5)= 'T8758'| substr(dx{i},1,4)='T882'|
substr(dx{i},1,4)='T883'|
substr(dx{i},1,4)= 'T884'| substr(dx{i},1,4)='T885'|
substr(dx{i},1,4)='T886') then k=1;

if a=1 | b=1 | c=1 | d=1 | e=1 | f=1 | g=1 | h=1 | j=1 | k=1 then
anypsi=1; else anypsi=0;
end;

drop i;
run;
proc freq;
tables anypsi;
run;


/* Events proximally threatening to life or to major vital organs*/
data a3;
set a2;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

if pt_age>=18 then do;
severity=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='G372' | substr(dx{i},1,4)=' I210' |
substr(dx{i},1,4)='I211' | substr(dx{i},1,4)='I212' |
substr(dx{i},1,4)='I213' | substr(dx{i},1,4)='I214' |
substr(dx{i},1,4)='I219' | substr(dx{i},1,4)='I220' |
substr(dx{i},1,4)='I221' |
substr(dx{i},1,4)='I228' | substr(dx{i},1,4)='I229' |
substr(dx{i},1,4)='I260' | substr(dx{i},1,4)='I461' |
substr(dx{i},1,4)='I469' |
substr(dx{i},1,4)='I472' | substr(dx{i},1,5)='I4900' |
substr(dx{i},1,5)='I4901' | substr(dx{i},1,4)='J960' |
substr(dx{i},1,4)='K223' |
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```
substr(dx{i},1,4)='K650' | substr(dx{i},1,5)='O7420' |
substr(dx{i},1,5)='O7430' | substr(dx{i},1,5)='O7510' |
substr(dx{i},1,5)='O7540' | substr(dx{i},1,4)='R571' |
substr(dx{i},1,4)='R572' | substr(dx{i},1,4)='R578' |
substr(dx{i},1,3)='T71' |
substr(dx{i},1,4)='T800' | substr(dx{i},1,4)='T805' |
substr(dx{i},1,4)='T811' | substr(dx{i},1,4)='T882' |
substr(dx{i},1,4)='T883' |
substr(dx{i},1,4)='T884' | substr(dx{i},1,4)='T886') then severity=1;
End;
end;
run;
proc freq;
tables severity /missing;
run;

data a4;
set a3;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;
/* Hospital-acquired Infections*/

If pt_age>=18 then do;
do i=1 to 25;
infection=0;
If dxtp{i}='2' & (substr(dx{i},1,4)='A020' | substr(dx{i},1,4)='A021' |
substr(dx{i},1,4)='A044' | substr(dx{i},1,4)='A045' |
substr(dx{i},1,4)='A047' | substr(dx{i},1,4)='A048' |
substr(dx{i},1,4)='A049' | substr(dx{i},1,4)='A080' |
substr(dx{i},1,4)='A081' |
substr(dx{i},1,4)='A410' | substr(dx{i},1,4)='A411' |
substr(dx{i},1,4)='A412' | substr(dx{i},1,4)='A414' |
substr(dx{i},1,5)='A4150' |
substr(dx{i},1,5)='A4151' | substr(dx{i},1,5)='A4152' |
substr(dx{i},1,5)='A4158' | substr(dx{i},1,5)='A4180' |
substr(dx{i},1,5)='A4188' | substr(dx{i},1,4)='A419' |
substr(dx{i},1,4)='A490' | substr(dx{i},1,4)='B309' |
substr(dx{i},1,4)='B373' |
substr(dx{i},1,4)='B374' | substr(dx{i},1,4)='B377' |
substr(dx{i},1,5)='B3780' | substr(dx{i},1,5)='B3781' |
substr(dx{i},1,4)='B956' |
substr(dx{i},1,4)='B957' | substr(dx{i},1,4)='B958' |
substr(dx{i},1,4)='B961' | substr(dx{i},1,4)='B962' |
substr(dx{i},1,4)='B964' |
substr(dx{i},1,4)='B965' | substr(dx{i},1,5)='B9681' |
substr(dx{i},1,5)='B9688' | substr(dx{i},1,4)='B974' |
substr(dx{i},1,4)='G003' |
substr(dx{i},1,4)='J150' | substr(dx{i},1,4)='J151' |
substr(dx{i},1,4)='J152' | substr(dx{i},1,4)='J155' |
substr(dx{i},1,4)='J156' |
substr(dx{i},1,4)='J159' | substr(dx{i},1,4)='J181' |
substr(dx{i},1,4)='J210' | substr(dx{i},1,4)='J853' |
substr(dx{i},1,4)='J860' |
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```
substr(dx{i},1,4)='J869' | substr(dx{i},1,5)='J9501' |
substr(dx{i},1,4)='K650' | substr(dx{i},1,4)='N390' |
substr(dx{i},1,5)='N9951' |
substr(dx{i},1,5)='O7530' | substr(dx{i},1,5)='O8500' |
substr(dx{i},1,5)='O8600' | substr(dx{i},1,5)='O8610' |
substr(dx{i},1,5)='O8620' | substr(dx{i},1,5)='O8620' |
substr(dx{i},1,5)='O8630' | substr(dx{i},1,5)='O8680' |
substr(dx{i},1,4)='P360' |
substr(dx{i},1,4)='P361' | substr(dx{i},1,4)='P362' |
substr(dx{i},1,4)='P363' | substr(dx{i},1,4)='P364' |
substr(dx{i},1,4)='P368' |
substr(dx{i},1,4)='P369' | substr(dx{i},1,4)='P38' |
substr(dx{i},1,4)='R572' | substr(dx{i},1,4)='T814' |
substr(dx{i},1,4)='T826' |
substr(dx{i},1,4)='T827' | substr(dx{i},1,4)='T835' |
substr(dx{i},1,4)='T836' | substr(dx{i},1,5)='T8453' |
substr(dx{i},1,5)='T8454' |
substr(dx{i},1,5)='T8460' | substr(dx{i},1,5)='T8461' |
substr(dx{i},1,5)='T8463' | substr(dx{i},1,5)='T8464' |
substr(dx{i},1,5)='T8465' | substr(dx{i},1,5)='T8468' |
substr(dx{i},1,4)='T847' | substr(dx{i},1,4)='T857' |
substr(dx{i},1,5)='T8742' | substr(dx{i},1,5)='T8746' |
substr(dx{i},1,5)='T8747' | substr(dx{i},1,5)='T8748') then infection=1;
End;
End;
run;
proc freq;
tables infection /missing;
run;

data a5;
set a4;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;
/* Decubitus ulcer*/
If pt_age>=18 then do;
ulcer=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='L890' | substr(dx{i},1,4)='L891' |
substr(dx{i},1,4)='L892' | substr(dx{i},1,4)='L893' |
substr(dx{i},1,4)='L898' | substr(dx{i},1,4)='L899') then ulcer=1;
End;
End;
proc freq;
tables ulcer /missing;
run;

/* Endocrine & Metabolic Complications (electrolyte abnormalities,
diabetes, etc)*/
data a6;
set a5;

array dxtp{25} $ 1 dxtype1-dxtype25;
```

```
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
endocrine=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,5)='E1010' | substr(dx{i},1,5)='E1063' |
substr(dx{i},1,5)='E1064' | substr(dx{i},1,4)='E110' |
substr(dx{i},1,5)='E1110' | substr(dx{i},1,5)='E1111' |
substr(dx{i},1,5)='E1163' | substr(dx{i},1,5)='E1164' |
substr(dx{i},1,5)='E1363' | substr(dx{i},1,5)='E1463' |
substr(dx{i},1,3)='E15' | substr(dx{i},1,4)='E160' |
substr(dx{i},1,4)='E272' |
substr(dx{i},1,4)='E891' | substr(dx{i},1,4)='E892' |
substr(dx{i},1,4)='E893' | substr(dx{i},1,4)='G372' |
substr(dx{i},1,4)='T503')
then endocrine=1;
End;
End;
proc freq;
tables endocrine /missing;
run;

/* Venous Thromboembolic Events */
data a7;
set a6;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
vte=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='I260' | substr(dx{i},1,4)='I269' |
substr(dx{i},1,4)='I801' | substr(dx{i},1,4)='I802' |
substr(dx{i},1,4)='I822' | substr(dx{i},1,5)='O8710') then vte=1;
End;
End;
proc freq;
tables vte /missing;
run;

/*Cardiac Complications*/
data a8;
set a7;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
cardiac=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='I200' | substr(dx{i},1,4)='I201' |
substr(dx{i},1,5)='I2088' | substr(dx{i},1,4)='I209' |
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substr(dx{i},1,4)='I210' | substr(dx{i},1,4)='I211' |
substr(dx{i},1,4)='I212' | substr(dx{i},1,4)='I213' |
substr(dx{i},1,4)='I214' |
substr(dx{i},1,4)='I219' | substr(dx{i},1,4)='I220' |
substr(dx{i},1,4)='I221' | substr(dx{i},1,4)='I228' |
substr(dx{i},1,4)='I229' |
substr(dx{i},1,4)='I461' | substr(dx{i},1,4)='I469' |
substr(dx{i},1,4)='I472' | substr(dx{i},1,4)='I481' |
substr(dx{i},1,5)='I4900' |
substr(dx{i},1,5)='I4901' | substr(dx{i},1,4)='I500' |
substr(dx{i},1,4)='I501' | substr(dx{i},1,4)='I509' |
substr(dx{i},1,3)='J81' |
substr(dx{i},1,5)='O7420'/*| substr(dx{i},1,4)='S26811'*/ |
substr(dx{i},1,4)='T820' | substr(dx{i},1,4)='T821' |
substr(dx{i},1,4)='T822' | substr(dx{i},1,4)='T825' |
substr(dx{i},1,4)='T826' | substr(dx{i},1,4)='T827' |
substr(dx{i},1,4)='T828' |
substr(dx{i},1,4)='T829') then cardiac=1;
End;
End;
proc freq;
tables cardiac /missing;
run;

/* Respiratory Complications*/
data a9;
set a8;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
respiratory=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='J150' | substr(dx{i},1,4)='J151' |
substr(dx{i},1,4)='J152' | substr(dx{i},1,4)='J155' |
substr(dx{i},1,4)='J156' | substr(dx{i},1,4)='J159' |
substr(dx{i},1,4)='J181' | substr(dx{i},1,4)='J210' |
substr(dx{i},1,5)='J3801' |
substr(dx{i},1,5)='J3802' | substr(dx{i},1,5)='J3809' |
substr(dx{i},1,4)='J690' | substr(dx{i},1,4)='J698' |
substr(dx{i},1,4)='J853' |
substr(dx{i},1,4)='J860' | substr(dx{i},1,4)='J869' |
substr(dx{i},1,4)='J942' | substr(dx{i},1,5)='J9500' |
substr(dx{i},1,5)='J9501' |
substr(dx{i},1,5)='J9502' | substr(dx{i},1,5)='J9503' |
substr(dx{i},1,5)='J9508' | substr(dx{i},1,4)='J951' |
substr(dx{i},1,4)='J952' |
substr(dx{i},1,4)='J955' | substr(dx{i},1,5)='J9580' |
substr(dx{i},1,5)='J9581' | substr(dx{i},1,5)='J9588' |
substr(dx{i},1,4)='J959' |
substr(dx{i},1,4)='J960' | substr(dx{i},1,4)='S202'  |
substr(dx{i},1,4)='T173' | substr(dx{i},1,4)='T174' |
substr(dx{i},1,4)='T175' | substr(dx{i},1,4)='T178' |
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substr(dx{i},1,4)='T179' | substr(dx{i},1,3)='T71' |
substr(dx{i},1,4)='T797' | substr(dx{i},1,5)='T8181') then respiratory=1;
End;
End;
proc freq;
tables respiratory /missing;
run;

/* Hemorrhagic Events*/
data a10;
set a9;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
Hemorrhagic=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,3)='D62' | substr(dx{i},1,4)='D683' |
substr(dx{i},1,4)='J942' | substr(dx{i},1,5)='J9500' |
substr(dx{i},1,5)='O7170' | substr(dx{i},1,5)='O7180' |
substr(dx{i},1,5)='O7200' | substr(dx{i},1,5)='O7210' |
substr(dx{i},1,5)='O7220' | substr(dx{i},1,5)='O9020' |
substr(dx{i},1,4)='P120' | substr(dx{i},1,4)='S064' |
substr(dx{i},1,4)='S065' |
substr(dx{i},1,4)='S066'  | substr(dx{i},1,4)='T792' |
substr(dx{i},1,4)='T810') then Hemorrhagic=1;
End;
End;
proc freq;
tables Hemorrhagic /missing;
run;

/* Drug Related Adverse Events*/
data a11;
set a10;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
drug=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='D683' | substr(dx{i},1,4)='E160' |
substr(dx{i},1,4)='E883' | substr(dx{i},1,4)='H910' |
substr(dx{i},1,4)='I952' | substr(dx{i},1,5)='O7450' |
substr(dx{i},1,4)='T360' | substr(dx{i},1,4)='T361' |
substr(dx{i},1,4)='T365' |
substr(dx{i},1,4)='T368' | substr(dx{i},1,4)='T369' |
substr(dx{i},1,4)='T378' | substr(dx{i},1,4)='T380' |
substr(dx{i},1,4)='T383' |
substr(dx{i},1,4)='T390' | substr(dx{i},1,4)='T391' |
substr(dx{i},1,4)='T393' | substr(dx{i},1,4)='T398' |
substr(dx{i},1,4)='T402' |
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```
substr(dx{i},1,4)='T403' | substr(dx{i},1,4)='T404' |
substr(dx{i},1,4)='T406' | substr(dx{i},1,4)='T412' |
substr(dx{i},1,4)='T413' |
substr(dx{i},1,4)='T420' | substr(dx{i},1,4)='T421' |
substr(dx{i},1,4)='T424' | substr(dx{i},1,4)='T426' |
substr(dx{i},1,4)='T427' |
substr(dx{i},1,4)='T430' | substr(dx{i},1,4)='T432' |
substr(dx{i},1,4)='T434' | substr(dx{i},1,4)='T435' |
substr(dx{i},1,4)='T438' |
substr(dx{i},1,4)='T445' | substr(dx{i},1,4)='T447' |
substr(dx{i},1,4)='T450' | substr(dx{i},1,4)='T451' |
substr(dx{i},1,4)='T455' |
substr(dx{i},1,4)='T457' | substr(dx{i},1,4)='T458' |
substr(dx{i},1,4)='T460' | substr(dx{i},1,4)='T461' |
substr(dx{i},1,4)='T462' |
substr(dx{i},1,4)='T464' | substr(dx{i},1,4)='T465' |
substr(dx{i},1,4)='T474' | substr(dx{i},1,4)='T480' |
substr(dx{i},1,4)='T486' |
substr(dx{i},1,4)='T490' | substr(dx{i},1,4)='T501' |
substr(dx{i},1,4)='T502' | substr(dx{i},1,4)='T509' |
substr(dx{i},1,4)='T808' |
substr(dx{i},1,4)='T809' | substr(dx{i},1,5)='T8180' |
substr(dx{i},1,4)='T882' | substr(dx{i},1,4)='T883' |
substr(dx{i},1,4)='T886')
then drug=1;
End;
End;
proc freq;
tables drug /missing;
run;

/* Adverse events related to fluid management*/
data a12;
set a11;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
fluid=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='E860' | substr(dx{i},1,4)='E868' |
substr(dx{i},1,4)='E877' | substr(dx{i},1,4)='G372' |
substr(dx{i},1,4)='T503' | substr(dx{i},1,4)='T808' |
substr(dx{i},1,4)='T809') then fluid=1;
End;
End;
proc freq;
tables fluid /missing;
run;

/* Obstetrical Complications affecting mother*/
data a13;
set a12;
```

```
array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
obstetrics=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='O086' | substr(dx{i},1,5)='O2950' |
substr(dx{i},1,5)='O7020' | substr(dx{i},1,5)='O7030' |
substr(dx{i},1,5)='O7090' | substr(dx{i},1,5)='O7110' |
substr(dx{i},1,5)='O7111' | substr(dx{i},1,5)='O7118' |
substr(dx{i},1,5)='O7130' | substr(dx{i},1,5)='O7140' |
substr(dx{i},1,5)='O7150' | substr(dx{i},1,5)='O7160' |
substr(dx{i},1,5)='O7170' | substr(dx{i},1,5)='O7180' |
substr(dx{i},1,5)='O7200' | substr(dx{i},1,5)='O7210' |
substr(dx{i},1,5)='O7220' | substr(dx{i},1,5)='O7420' |
substr(dx{i},1,5)='O7430' | substr(dx{i},1,5)='O7450' |
substr(dx{i},1,5)='O7460' | substr(dx{i},1,5)='O7480' |
substr(dx{i},1,5)='O7510' | substr(dx{i},1,5)='O7530' |
substr(dx{i},1,5)='O7540' | substr(dx{i},1,5)='O7560' |
substr(dx{i},1,5)='O8500' | substr(dx{i},1,5)='O8600' |
substr(dx{i},1,5)='O8610' | substr(dx{i},1,5)='O8620' |
substr(dx{i},1,5)='O8630' | substr(dx{i},1,5)='O8680' |
substr(dx{i},1,5)='O8710' | substr(dx{i},1,5)='O8940' |
substr(dx{i},1,5)='O8950' | substr(dx{i},1,5)='O8980' |
substr(dx{i},1,5)='O9000' | substr(dx{i},1,5)='O9010' |
substr(dx{i},1,5)='O9020') then obstetrics=1;
End;
End;
proc freq;
tables obstetrics /missing;
run;

/* Obstetrical Complications affecting fetus*/
data a14;
set a13;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;
if pt_age<=1 | sex='F' then do;
fetus=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='P033' | substr(dx{i},1,4)='P120' |
substr(dx{i},1,4)='P123' | substr(dx{i},1,4)='P128' |
substr(dx{i},1,4)='P134' | substr(dx{i},1,4)='P143' |
substr(dx{i},1,4)='P154' | substr(dx{i},1,4)='P158' |
substr(dx{i},1,4)='P360' |
substr(dx{i},1,4)='P361' | substr(dx{i},1,4)='P362' |
substr(dx{i},1,4)='P363' | substr(dx{i},1,4)='P364' |
substr(dx{i},1,4)='P368' |
substr(dx{i},1,4)='P369' | substr(dx{i},1,3)='P38') then fetus=1;
End;
end;
proc freq;
```

```
tables fetus /missing;
run;

/* Complications Directly Related to Surgery*/
data a15;
set a14;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
surgery=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,5)='H5980' | substr(dx{i},1,4)='M966' |
substr(dx{i},1,5)='O7540' | substr(dx{i},1,5)='O8600' |
substr(dx{i},1,5)='O9000' | substr(dx{i},1,4)='T810' |
substr(dx{i},1,4)='T811' |
substr(dx{i},1,4)='T812' | substr(dx{i},1,4)='T813' |
substr(dx{i},1,5)='T8152' | substr(dx{i},1,5)='T8158' |
substr(dx{i},1,5)='T8159' |
substr(dx{i},1,4)='T816' | substr(dx{i},1,5)='T8181' |
substr(dx{i},1,5)='T8188' | substr(dx{i},1,4)='T819') then surgery=1;
End;
End;
proc freq;
tables surgery /missing;
run;

/* Traumatic injuries (non-procedural) arising in hospital*/
data a16;
set a15;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
trauma=0;
do i=1 to 25;
If (substr(dx{i},1,3)='W01' | substr(dx{i},1,3)='W03' |
substr(dx{i},1,3)='W04' | substr(dx{i},1,3)='W05' |
substr(dx{i},1,3)='W06' |
substr(dx{i},1,3)='W07' | substr(dx{i},1,3)='W08' |
substr(dx{i},1,3)='W10' | substr(dx{i},1,3)='W13' |
substr(dx{i},1,3)='W17' |
substr(dx{i},1,3)='W18' | substr(dx{i},1,3)='W19' |
substr(dx{i},1,3)='W20' | substr(dx{i},1,3)='W22' |
substr(dx{i},1,3)='W23' |
substr(dx{i},1,3)='W24' | substr(dx{i},1,3)='W25' |
substr(dx{i},1,3)='W26' | substr(dx{i},1,3)='W27' |
substr(dx{i},1,3)='W29' |
substr(dx{i},1,3)='W31' | substr(dx{i},1,3)='W32' |
substr(dx{i},1,3)='W33' | substr(dx{i},1,3)='W34' |
substr(dx{i},1,3)='W35' |
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substr(dx{i},1,3)='W36' | substr(dx{i},1,3)='W37' |
substr(dx{i},1,3)='W38' | substr(dx{i},1,3)='W40' |
substr(dx{i},1,3)='W41' |
substr(dx{i},1,3)='W42' | substr(dx{i},1,3)='W43' |
substr(dx{i},1,3)='W44' | substr(dx{i},1,3)='W45' |
substr(dx{i},1,3)='W46' |
substr(dx{i},1,3)='W49' | substr(dx{i},1,3)='W50' |
substr(dx{i},1,3)='W51' | substr(dx{i},1,3)='W52' |
substr(dx{i},1,3)='W53' |
substr(dx{i},1,3)='W54' | substr(dx{i},1,3)='W55' |
substr(dx{i},1,3)='W57' | substr(dx{i},1,3)='W60' |
substr(dx{i},1,3)='W64' |
substr(dx{i},1,3)='W65' | substr(dx{i},1,3)='W66' |
substr(dx{i},1,3)='W67' | substr(dx{i},1,3)='W68' |
substr(dx{i},1,3)='W73' |
substr(dx{i},1,3)='W74' | substr(dx{i},1,3)='W75' |
substr(dx{i},1,3)='W76' | substr(dx{i},1,3)='W77' |
substr(dx{i},1,3)='W86' |
substr(dx{i},1,3)='W87' | substr(dx{i},1,3)='W88' |
substr(dx{i},1,3)='W89' | substr(dx{i},1,3)='W90' |
substr(dx{i},1,3)='W91' |
substr(dx{i},1,3)='W92' | substr(dx{i},1,3)='W93' |
substr(dx{i},1,3)='W94' | substr(dx{i},1,3)='W99' |
substr(dx{i},1,3)='X00' |
substr(dx{i},1,3)='X02' | substr(dx{i},1,3)='X04' |
substr(dx{i},1,3)='X05' | substr(dx{i},1,3)='X06' |
substr(dx{i},1,3)='X08' |
substr(dx{i},1,3)='X09' | substr(dx{i},1,3)='X10' |
substr(dx{i},1,3)='X11' | substr(dx{i},1,3)='X12' |
substr(dx{i},1,3)='X13' |
substr(dx{i},1,3)='X14' | substr(dx{i},1,3)='X15' |
substr(dx{i},1,3)='X16' | substr(dx{i},1,3)='X17' |
substr(dx{i},1,3)='X18' |
substr(dx{i},1,3)='X19') then do;
If dxtp{i}='2' & (substr(dx{i},1,5)='S0100' | substr(dx{i},1,5)='S0101' |
substr(dx{i},1,5)='S0110' | substr(dx{i},1,5)='S0120' |
substr(dx{i},1,5)='S0130' | substr(dx{i},1,5)='S0140' |
substr(dx{i},1,5)='S0150' | substr(dx{i},1,5)='S0170' |
substr(dx{i},1,5)='S0180' | substr(dx{i},1,5)='S0190' |
substr(dx{i},1,4)='S030' | substr(dx{i},1,4)='S050' |
substr(dx{i},1,4)='S051' | substr(dx{i},1,4)='S058' |
substr(dx{i},1,4)='S059' | substr(dx{i},1,4)='S060' |
substr(dx{i},1,4)='S061' |
substr(dx{i},1,5)='S0625' | substr(dx{i},1,5)='S0635' |
substr(dx{i},1,4)='S064' | substr(dx{i},1,4)='S065' |
substr(dx{i},1,4)='S066' |
substr(dx{i},1,5)='S0685' | substr(dx{i},1,4)='S069' |
substr(dx{i},1,4)='S090' | substr(dx{i},1,4)='S098' |
substr(dx{i},1,4)='S099' |
substr(dx{i},1,4)='S101' | substr(dx{i},1,4)='S109' |
substr(dx{i},1,5)='S1348' | substr(dx{i},1,5)='S1438' |
substr(dx{i},1,4)='S202' |
substr(dx{i},1,4)='S204' | substr(dx{i},1,4)='S208' |
substr(dx{i},1,4)='S300' | substr(dx{i},1,4)='S301' |
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substr(dx{i},1,5)='S3080' | substr(dx{i},1,5)='S3081' |
substr(dx{i},1,5)='S3088' | substr(dx{i},1,4)='S309' |
substr(dx{i},1,4)='S335' | substr(dx{i},1,4)='S351' |
substr(dx{i},1,4)='S352' | substr(dx{i},1,4)='S355' |
substr(dx{i},1,4)='S398' |
substr(dx{i},1,4)='S399' | substr(dx{i},1,4)='S400' |
substr(dx{i},1,4)='S408' | substr(dx{i},1,4)='S409' |
substr(dx{i},1,5)='S4110' |
substr(dx{i},1,5)='S4111' | substr(dx{i},1,5)='S4600' |
substr(dx{i},1,5)='S4608' | substr(dx{i},1,4)='S497' |
substr(dx{i},1,4)='S498' | substr(dx{i},1,4)='S499' |
substr(dx{i},1,4)='S500' | substr(dx{i},1,4)='S501' |
substr(dx{i},1,4)='S507' |
substr(dx{i},1,4)='S508' | substr(dx{i},1,4)='S509' |
substr(dx{i},1,5)='S5100' | substr(dx{i},1,5)='S5101' |
substr(dx{i},1,5)='S5170' |
substr(dx{i},1,5)='S5180' | substr(dx{i},1,5)='S5190' |
substr(dx{i},1,4)='S598' | substr(dx{i},1,4)='S599' |
substr(dx{i},1,4)='S600' | substr(dx{i},1,4)='S602' |
substr(dx{i},1,4)='S607' | substr(dx{i},1,4)='S608' |
substr(dx{i},1,4)='S609' |
substr(dx{i},1,5)='S6100' | substr(dx{i},1,5)='S6170' |
substr(dx{i},1,5)='S6180' | substr(dx{i},1,5)='S6190' |
substr(dx{i},1,5)='S6359' | substr(dx{i},1,4)='S698' |
substr(dx{i},1,4)='S699' |
substr(dx{i},1,4)='S700' | substr(dx{i},1,4)='S701' |
substr(dx{i},1,4)='S708' | substr(dx{i},1,4)='S709' |
substr(dx{i},1,5)='S7110' |
substr(dx{i},1,5)='S7111' | substr(dx{i},1,5)='S7418' |
substr(dx{i},1,4)='S750' | substr(dx{i},1,4)='S799' |
substr(dx{i},1,4)='S800' | substr(dx{i},1,4)='S801' |
substr(dx{i},1,4)='S807' | substr(dx{i},1,4)='S808' |
substr(dx{i},1,4)='S809' | substr(dx{i},1,5)='S8100' |
substr(dx{i},1,5)='S8101' |
substr(dx{i},1,5)='S8180' | substr(dx{i},1,5)='S8181' |
substr(dx{i},1,5)='S8190' | substr(dx{i},1,5)='S8191' |
substr(dx{i},1,4)='S836' | substr(dx{i},1,4)='S898' |
substr(dx{i},1,4)='S899' |
substr(dx{i},1,4)='S900' | substr(dx{i},1,4)='S901' |
substr(dx{i},1,4)='S903' | substr(dx{i},1,4)='S907' |
substr(dx{i},1,4)='S908' |
substr(dx{i},1,4)='S909' | substr(dx{i},1,5)='S9100' |
substr(dx{i},1,5)='S9110' | substr(dx{i},1,5)='S9120' |
substr(dx{i},1,5)='S9130' | substr(dx{i},1,5)='S9349' |
substr(dx{i},1,4)='S998' | substr(dx{i},1,4)='S999' |
substr(dx{i},1,4)='T001' | substr(dx{i},1,4)='T008' |
substr(dx{i},1,4)='T009' | substr(dx{i},1,4)='T090' |
substr(dx{i},1,4)='T110' |
substr(dx{i},1,4)='T111' | substr(dx{i},1,4)='T130' |
substr(dx{i},1,4)='T131' | substr(dx{i},1,4)='T140' |
substr(dx{i},1,4)='T149' |
substr(dx{i},1,4)='T200' | substr(dx{i},1,4)='T202' |
substr(dx{i},1,4)='T210' | substr(dx{i},1,4)='T211' |
substr(dx{i},1,4)='T212' |
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substr(dx{i},1,4)='T213' | substr(dx{i},1,4)='T220' |
substr(dx{i},1,4)='T224' | substr(dx{i},1,4)='T230' |
substr(dx{i},1,4)='T232' |
substr(dx{i},1,4)='T240' | substr(dx{i},1,4)='T242' |
substr(dx{i},1,4)='T250' | substr(dx{i},1,4)='T252' |
substr(dx{i},1,3)='T71' |
substr(dx{i},1,4)='T792' | substr(dx{i},1,4)='T796' |
substr(dx{i},1,4)='T797') then trauma=1;
End;
End;
End;
proc freq;
tables trauma /missing;
run;

/* Anesthesia related complications*/
data a17;
set a16;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
anesthesia=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='T412' | substr(dx{i},1,4)='T413' |
substr(dx{i},1,4)='T882' | substr(dx{i},1,4)='T883' |
substr(dx{i},1,4)='T884' | substr(dx{i},1,4)='T885' |
substr(dx{i},1,5)='O2950' | substr(dx{i},1,5)='O7420' |
substr(dx{i},1,5)='O7430' |
substr(dx{i},1,5)='O7450' | substr(dx{i},1,5)='O7460' |
substr(dx{i},1,5)='O7480' | substr(dx{i},1,5)='O8940' |
substr(dx{i},1,5)='O8950' | substr(dx{i},1,5)='O8980') then anesthesia=1;
End;
End;
proc freq;
tables anesthesia /missing;
run;

/* Delirium*/
data a18;
set a17;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
delirium=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='F050' | substr(dx{i},1,4)='F051' |
substr(dx{i},1,4)='F058' | substr(dx{i},1,4)='F059')
then delirium=1;
End;
End;
```

```
proc freq;
tables delirium /missing;
run;

/* Central Nervous System Complications*/
data a19;
set a18;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
cns=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='E110' | substr(dx{i},1,3)='E15' |
substr(dx{i},1,4)='F050' | substr(dx{i},1,4)='F051' |
substr(dx{i},1,4)='F058' | substr(dx{i},1,4)='F059' |
substr(dx{i},1,4)='G003' | substr(dx{i},1,4)='G372' |
substr(dx{i},1,4)='G972' |
substr(dx{i},1,5)='O7430' | substr(dx{i},1,5)='O8940' |
substr(dx{i},1,4)='S060' | substr(dx{i},1,4)='S061' |
substr(dx{i},1,5)='S0625' |
substr(dx{i},1,5)='S0635' | substr(dx{i},1,4)='S064' |
substr(dx{i},1,4)='S065' | substr(dx{i},1,4)='S066' |
substr(dx{i},1,5)='S0685' |
substr(dx{i},1,4)='S069') then cns=1;
End;
End;
proc freq;
tables cns /missing;
run;

/* Gastrointestinal*/
data a20;
set a19;

array dxtp{25} $ 1 dxtype1-dxtype25;
array dx{25} $ 6 dxcode1-dxcode25;

If pt_age>=18 then do;
gi=0;
do i=1 to 25;
If dxtp{i}='2' & (substr(dx{i},1,4)='A020' | substr(dx{i},1,4)='A044' |
substr(dx{i},1,4)='A045' | substr(dx{i},1,4)='A047' |
substr(dx{i},1,4)='A048' | substr(dx{i},1,4)='A049' |
substr(dx{i},1,4)='A080' | substr(dx{i},1,4)='A081' |
substr(dx{i},1,5)='B3780' |
substr(dx{i},1,5)='B3781' | substr(dx{i},1,4)='K223' |
substr(dx{i},1,4)='K650' | substr(dx{i},1,4)='K910' |
substr(dx{i},1,4)='K913' |
substr(dx{i},1,4)='T181' | substr(dx{i},1,4)='T182' |
substr(dx{i},1,4)='T183' | substr(dx{i},1,4)='T189' |
substr(dx{i},1,4)='T282' |
substr(dx{i},1,4)='T855') then gi=1;
```

```
End;
End;
proc freq;
tables gi /missing;
run;

/*output*/
Proc freq data=a20;
Tables female age18 age0/missing;
Run;
Proc freq data=a20;
Tables
anypsi*severity*infection*ulcer*endocrine*vte*cardiac*respiratory*Hemorrh
agic*drug*fluid*surgery*trauma*anesthesia*delirium*cns*gi/list missing;
Run;
```