```
*title: Example data on the two hospitals
* Example data generated by -dataex-. To install: ssc install dataex


*** go to correct working path/folder

* cd "z:\Zwahlen_1\pubprojects\2016_17_evidence_based_mental_health\data_example"


* Input the data set
clear
input byte risk long(sex age) float relapse double hospital int N
1 1 0 0 0 198
1 1 0 1 0   2
1 1 0 0 1  99
1 1 0 1 1   1
2 1 0 0 0  57
2 1 0 1 0   3
2 1 0 0 1  38
2 1 0 1 1   2
1 1 1 0 0  96
1 1 1 1 0   4
1 1 1 0 1  48
1 1 1 1 1   2
2 1 1 0 0  34
2 1 1 1 0   6
2 1 1 0 1  85
2 1 1 1 1  15
1 2 0 0 0 196
1 2 0 1 0   4
1 2 0 0 1  49
1 2 0 1 1   1
2 2 0 0 0  54
2 2 0 1 0   6
2 2 0 0 1  90
2 2 0 1 1  10
1 2 1 0 0  95
1 2 1 1 0   5
1 2 1 0 1 190
1 2 1 1 1  10
2 2 1 0 0  30
2 2 1 1 0  10
2 2 1 0 1 120
2 2 1 1 1  40
end
label values risk rp_l
label def rp_l 1 "low", modify
label def rp_l 2 "high", modify
label values sex sex_l
label def sex_l 1 "female", modify
label def sex_l 2 "male", modify
label values age age_l
label def age_l 0 "<60", modify
label def age_l 1 "60+", modify
label values relapse relapse
label def relapse 0 "no relapse", modify
label def relapse 1 "relapse", modify
label values hospital hosp
label def hosp 0 "A", modify
label def hosp 1 "B", modify
label var relapse "6-month relapse"
expand N
drop N

* data set is now ready: describe now data and labelling

codebook
```

source: https://doi.org/10.7892/boris.108655 | downloaded: 12.10.2024

```
tabulate hospital relapse, row


*** IPTW
*** model for being in which hospital including all interactions

logistic hospital i.sex##i.age##i.risk

cap drop p
predict p

tab p
summ p
cap drop iptw
generate iptw =1/p if hospital==1
replace iptw =1/(1-p) if hospital==0


* check that now risk factors are balanced...

 foreach var of varlist sex age risk {

            tabulate `var' hospital, col

            tabulate `var' hospital [iweight=iptw], col
        }


* expected relapse rate for both hospitals

tabulate hospital relapse [iweight=iptw], row

* to obtain proper 95% CI with robust standard erros for risk per hospital one needs to
svyset the data

svyset [pweight= iptw]
svy : tabulate  hospital relapse  , row percent ci format(%5.2f)



*** IPTW analysis with robust standard erros

* causal risk difference
binreg relapse hospital [pweight=iptw], vce(robust) rd
* causal risk ratio
binreg relapse hospital [pweight=iptw], vce(robust) rr
* causal odds ratio
binreg relapse hospital [pweight=iptw], vce(robust) or
* causal odds ratio
logistic relapse hospital [pweight=iptw], vce(robust)



* generate a table with the weights by age sex severity

preserve

** check data by collapsing data set

collapse (mean) iptw , by(sex age risk hospital)
gsort hosp -sex age risk
bysort hosp : list sex age risk iptw, clean noobs

restore
```

```
/*
       sex   age   risk        iptw
      male   <60    low         1.25
      male   <60   high       2.67
      male   60+    low       3.0
      male   60+   high       5.0
    female   <60    low         1.5
    female   <60   high       1.67
    female   60+    low         1.5
    female   60+   high       3.5

-----------------------------------------------------------------------------------------
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-> hospital = B

       sex   age   risk        iptw
      male   <60    low       5.0
      male   <60   high         1.6
      male   60+    low         1.5
      male   60+   high         1.25
    female   <60    low       3.0
    female   <60   high         2.5
    female   60+    low       3.0
    female   60+   high         1.4
*/


*iptw weights without interactions

logistic hospital i.sex i.age i.risk

cap drop p
predict p

tab p
summ p
cap drop iptw
generate iptw =1/p if hospital==1
replace iptw =1/(1-p) if hospital==0

* causal odds ratio
logistic relapse hospital [pweight=iptw], vce(robust)



* naive estimates

logistic relapse hospital

logistic relapse hospital sex age risk

logistic relapse hospital i.sex##i.age##i.risk
```