

Medical University Clinic, Cantonal Hospital Aarau, Switzerland

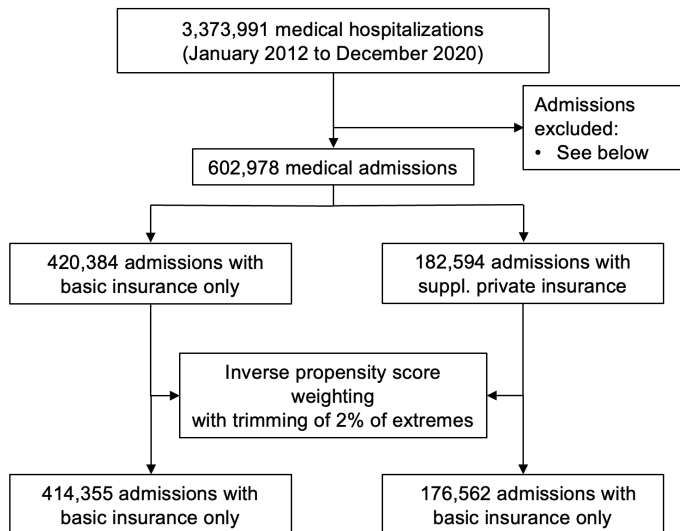
Comparison of cardiovascular procedure rates in patients with supplementary vs. basic insurance in Switzerland

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Are royalties in Swiss patients with supplementary private health insurance associated with unnecessary cardiovascular interventions as compared to patients with basic insurance only?

In this population-based cohort study of all Swiss adult residents undergoing one of 112,123 non-emergency cardiovascular in-patient procedures from 2012 to 2020, there was an 11% increase in the likelihood of receiving a cardiovascular intervention for people with supplementary private insurance compared to patients with basic insurance only.

Procedures

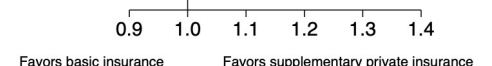


- Legend:**
- BI, basic insurance; PI, supplementary private insurance
 - CI, confidence interval; LOS, length of stay
 - Crude model, model between outcome and insurance class
 - IPW, inverse probability weighted model
 - LOS ≤ 7, IPW model with LOS range of 1-7 instead of 1-21 days
 - PS, propensity score matching model
 - CIED, Cardiac implantable electronic device
 - PTCA, percutaneous transluminal coronary angioplasty
 - LAA, left arterial appendage closure
 - MitraClip, mitral valve clipping procedure
 - TAVR, transaortic valve replacement
 - PFO, persistent foramen ovale closure
 - Pacer, cardiac pacemaker implantation
 - A-fib/A-flu, atrial fibrillation or atrial flutter ablation

- Admissions excluded (n= 2,771,013):**
- Age < 18 y old (n=51,647)
 - Non-elective stay (n=2,534,910)
 - Hospital transfer (n=81,084)
 - Non-somatic hospital (n=32,464)
 - LOS > 21 days, or 0 days (n=32,525)
 - No information on insurance (n=21)
 - Payer not health insurance (n=9,891)
 - CIED already in place (n=28,471)

Results

Procedure and model	IRR (99% CI)	P-value
PTCA crude model	1.19 (1.18, 1.19)	<0.01
PTCA IPW model	1.12 (1.12, 1.13)	<0.01
PTCA IPW LOS ≤7 model	1.11 (1.11, 1.12)	<0.01
PTCA PS matching model	1.06 (1.05, 1.07)	<0.01
LAA crude model	1.33 (1.32, 1.35)	<0.01
LAA IPW model	1.15 (1.14, 1.16)	<0.01
LAA IPW LOS ≤7 model	1.13 (1.12, 1.15)	<0.01
LAA PS matching model	1.06 (1.04, 1.07)	<0.01
MitraClip crude model	1.34 (1.33, 1.36)	<0.01
MitraClip IPW model	1.08 (1.07, 1.10)	<0.01
MitraClip IPW LOS ≤7 model	1.07 (1.05, 1.08)	<0.01
MitraClip PS matching model	1.00 (0.99, 1.02)	0.56
TAVR crude model	1.31 (1.29, 1.32)	<0.01
TAVR IPW model	1.05 (1.03, 1.06)	<0.01
TAVR IPW LOS ≤7 model	1.03 (1.02, 1.04)	<0.01
TAVR PS matching model	0.98 (0.97, 1.00)	0.01
PFO crude model	0.96 (0.96, 0.97)	<0.01
PFO IPW model	1.01 (1.00, 1.01)	<0.01
PFO IPW LOS ≤7 model	1.01 (1.00, 1.02)	<0.01
PFO PS matching model	1.00 (0.99, 1.01)	0.44
Pacer crude model	1.31 (1.30, 1.32)	<0.01
Pacer IPW model	1.08 (1.08, 1.09)	<0.01
Pacer IPW LOS ≤7 model	1.07 (1.06, 1.08)	<0.01
Pacer PS matching model	1.01 (1.00, 1.03)	<0.01
A-fib/A-flu crude model	1.10 (1.10, 1.11)	<0.01
A-fib/A-flu IPW model	1.12 (1.11, 1.12)	<0.01
A-fib/A-flu IPW LOS ≤7 model	1.11 (1.10, 1.12)	<0.01
A-fib/A-flu PS matching model	1.07 (1.06, 1.08)	<0.01
Overall crude model	1.19 (1.19, 1.20)	<0.01
Overall IPW model	1.11 (1.10, 1.11)	<0.01
Overall IPW LOS ≤7 model	1.10 (1.09, 1.11)	<0.01
Overall PS matching model	1.05 (1.04, 1.05)	<0.01



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