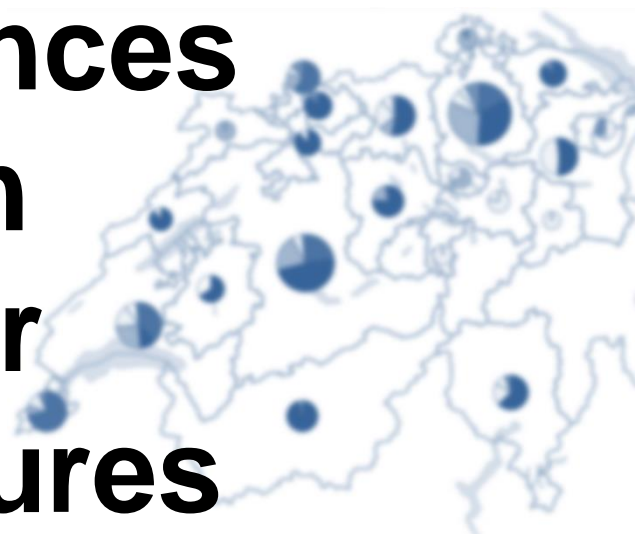




krebsliga ostschweiz

Regional differences and trends in breast cancer surgical procedures



and their relation to socioeconomic
disparities and screening patterns

Christian Herrmann

Head of Statistics and Evaluation

Cancer registry St.Gallen-Appenzell-Fürstentum Liechtenstein

Understanding the variation in breast cancer care.

- Important regional disparities in patterns of care in breast cancer in Switzerland
- **Here:** Focus on Mastectomy rates

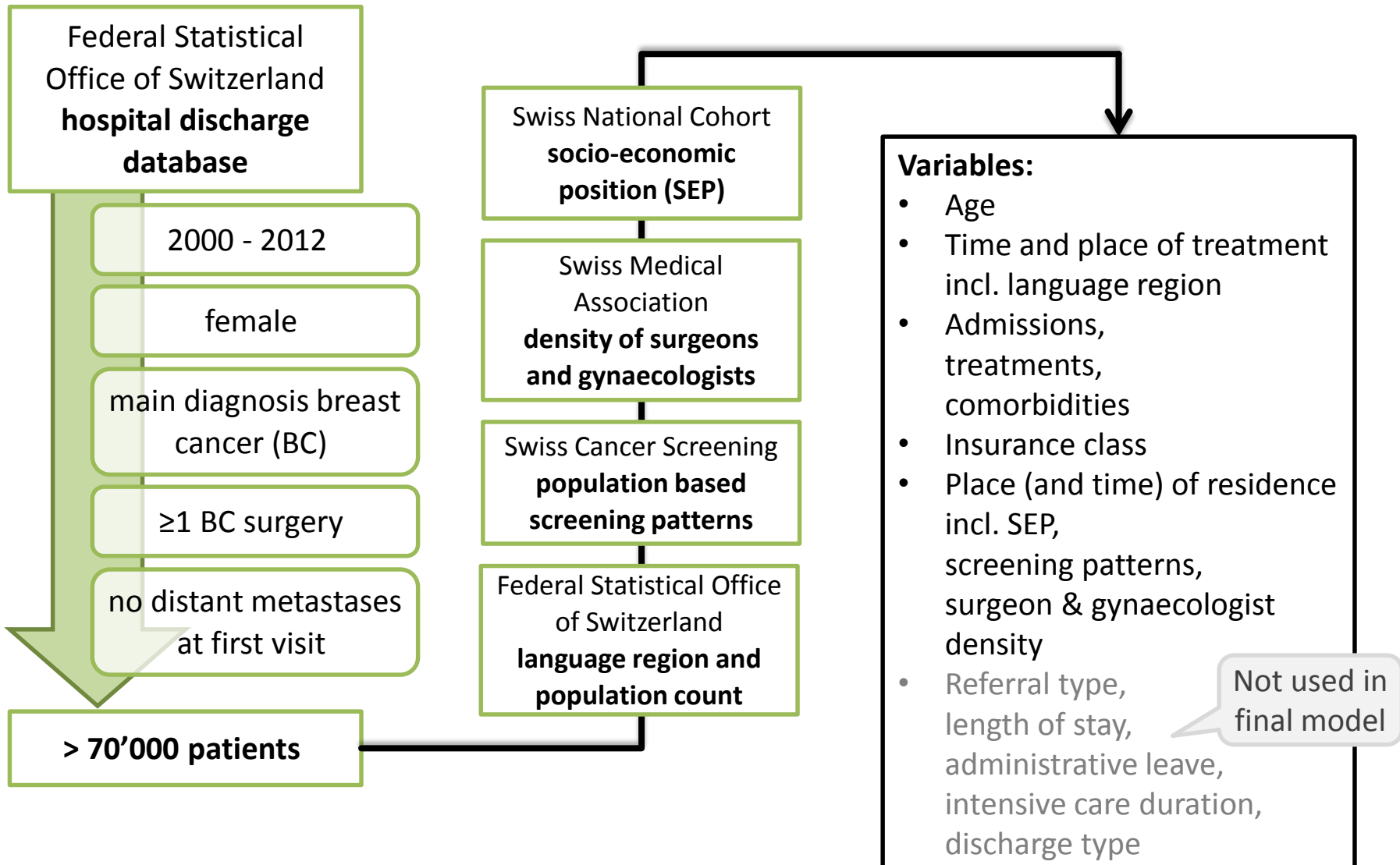
Mastectomy in patients with unifocal disease				
	Univariate		Multivariate*	
	OR (95% CI)	p-Value	OR (95% CI)	p-Value
GE	1.0 (Ref)	-	1.0 (Ref)	-
VS	2.6 (1.9-3.6)	<0.01	2.90 (2.1-4.1)	<0.01
TI	2.2 (1.6-2.9)	<0.01	2.0 (1.4-2.8)	<0.01
BA	1.7 (1.2-2.4)	<0.01	1.7 (1.2-2.5)	<0.01
ZH	1.6 (1.1-2.2)	0.02	1.5 (1.0-2.2)	0.04
SGA	2.4 (1.8-3.2)	<0.01	2.3 (1.6-3.1)	<0.01
GG	2.3 (1.5-3.3)	<0.01	2.4 (1.6-3.6)	<0.01

Ess et al. Cancer Epidemiology. 2010.

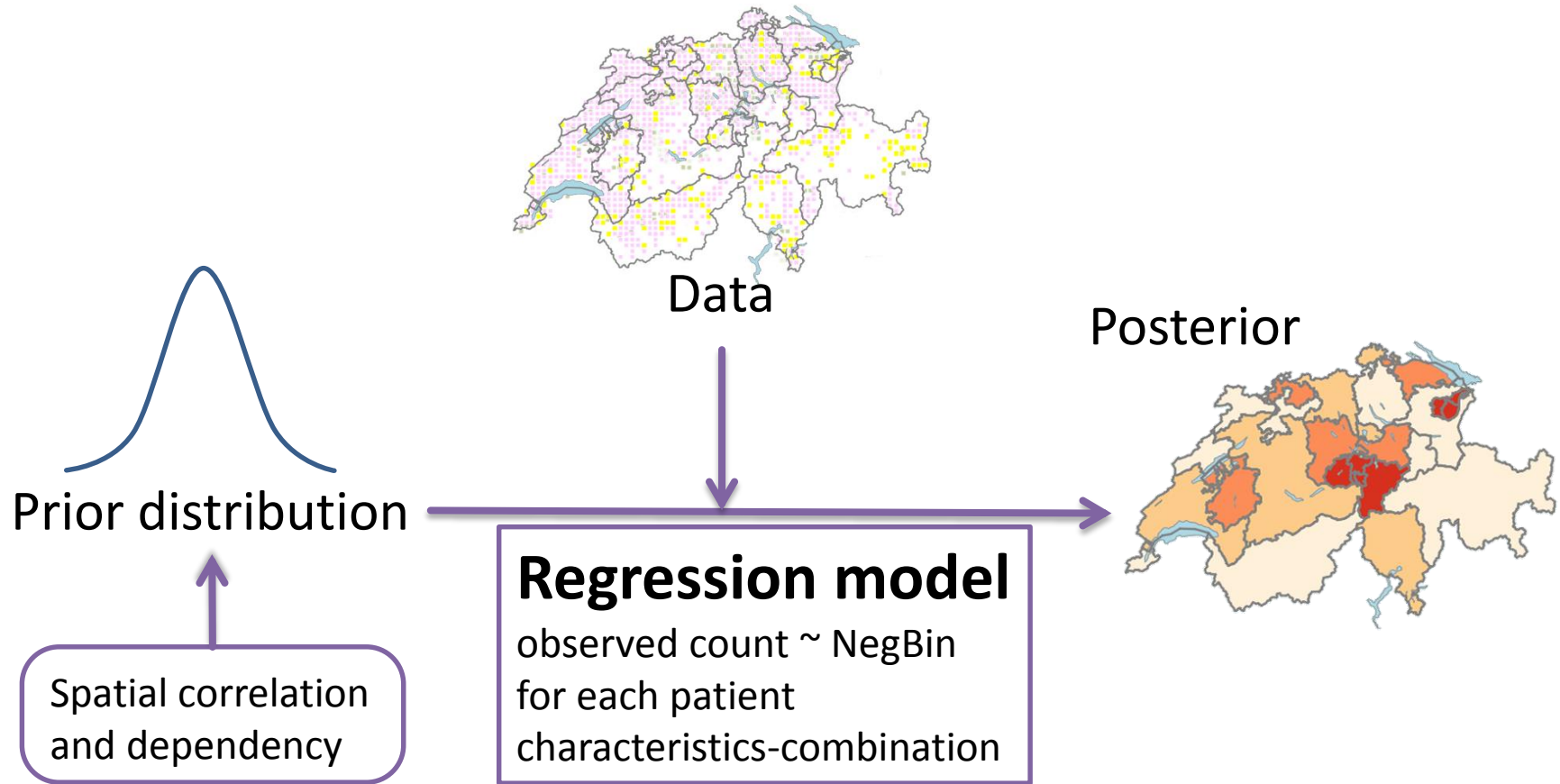
“Despite universal health care insurance, high accessibility of health care services and high expenditures, geographic variation in breast cancer care exists in Switzerland.

*There is an **urgent need** to reduce disparities in early detection [...] and to further investigate causes and effects of disparities in breast cancer management.”*

Data sources



Bayesian areal models with temporal trends

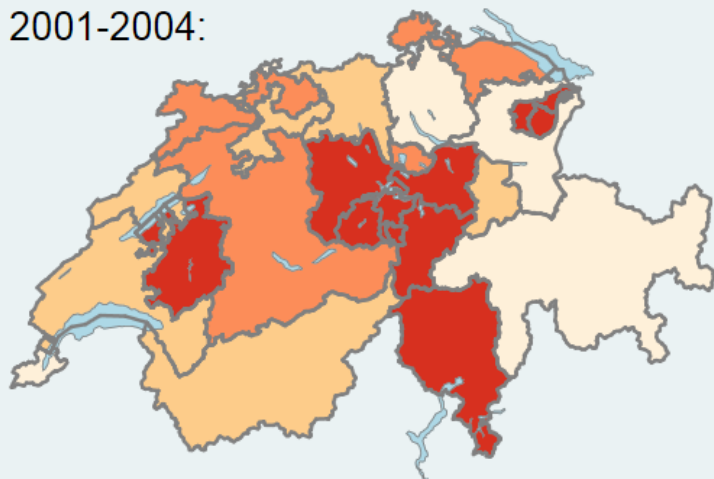


Trends in mastectomy rates

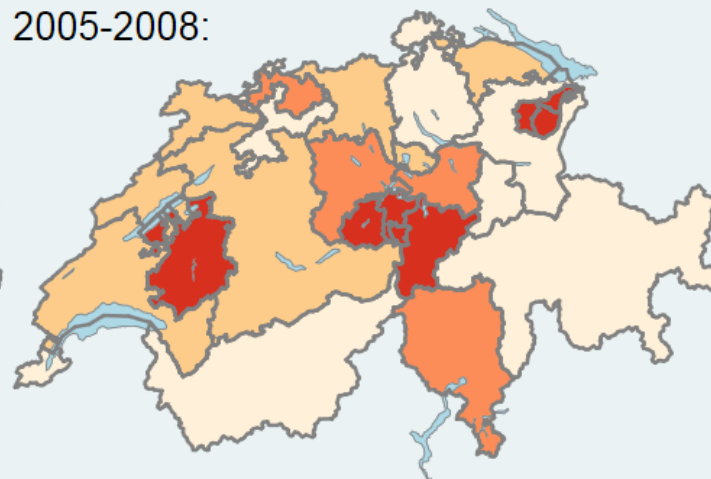


Spatiotemporal estimates

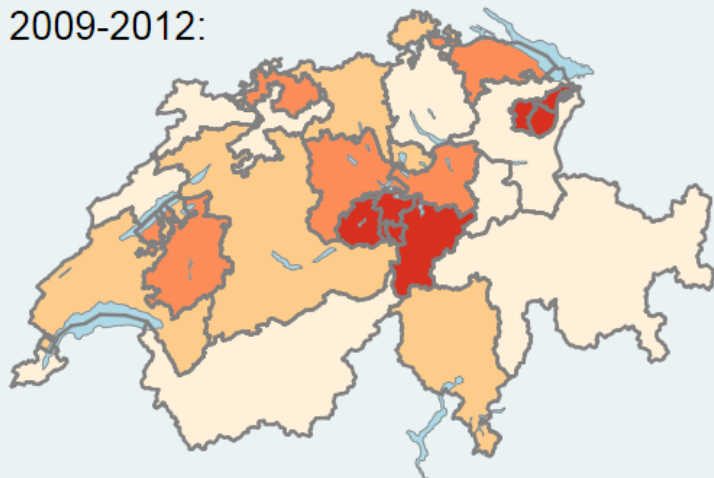
2001-2004:



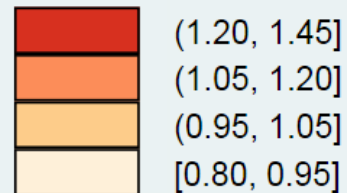
2005-2008:



2009-2012:



RR of mastectomies
comp. to the overall mean



Regression Results

	Median 95% CI interval				Median 95% CI interval		
<u>Time (1 year change)</u>	1.01	1.00	1.01	<u>multiple BC surgeries</u>	1.23	0.96	1.67
<u>Time:age group interaction</u>				<u>average SEP at patients' residence</u>			
time:<50 years	1	(ref.)		Q1 (lowest quartile)	1	(ref.)	
time:50-69 years	0.99	0.99	1.00	Q2	0.97	0.93	1.01
time:70+ years	0.99	0.99	1.01	Q3	0.97	0.93	1.02
<u>Age group</u>				Q4 (highest quartile)	0.99	0.95	1.04
<50 years	1	(ref.)		<u>Language region of treatment</u>			
50-69 years	0.92	0.87	0.95	German	1	(ref.)	
70+ years	1.25	1.21	1.29	French	0.72	0.62	0.82
<u>Co-morbidity score</u>				Italian/Romansh	0.88	0.79	1.01
0 (only BC)	1	(ref.)		<u>Hospital region profiles</u>			
1	1.17	1.11	1.25	Surgeon density per 1000 population	1.01	1.00	1.02
2+	1.35	1.27	1.45	Gynaecologist density per 1000 population	1.06	1.05	1.06
<u>insurance class</u>				mammography screening programme exists	0.87	0.82	0.95
basic	1	(ref.)					
half-private/private	0.98	0.95	1.02				
<u>multiple admissions</u>	1.43	1.03	1.79				

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Conclusion

- Important geographical differences in mastectomy rates
- No socio-economic impact
- Different mastectomy rates by age, even after adjustment
- Less Mastectomies in regions with mammography screening programmes



Thank you for your attention!

comments welcome: christian.herrmann@kssg.ch

Many thanks to my
Co-investigators:

Silvia Ess
Esther Walser
Harald Frick
Beat Thürlimann
Nicole Probst-Hensch
Christian Rothermundt
Penelope Vounatsou

Funding institutions:



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