SwissCaRe - Registry report year 2023

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On behalf of the Swiss Care Steering Committee

Date of data export*: 23.10.2024*

Date of report: *13.12.2024*

1 Preface

Dear SwissCaRe participant, dear quality responsible, dear reader

We are pleased to provide you with the first SwissCaRe report on the period 2023. The Swiss Society of Cardiology and the Swiss Working Group Interventional Cardiology are proud, that the launch of the first consecutive and prospective quality registry on PCI & CA in Switzerland was successful as evidenced by this report. More than 19'000 interventions were recorded, which reflects approximately 40% of the expected annual procedures in Switzerland.

Information on the background, aims and methods of SwissCaRe are provided in the following paragraphs.

Please note that many sites started submitting quality data during the year 2023 and not necessarily at the beginning of 2023, thus numbers do not reflect a complete year, and some sites reported only part of their interventions (e.g. only diagnostic angiographies). This is important when comparing sites with each other (benchmark analysis) as any interpretation may be challenging. We hope for a much more complete dataset in 2024.

Two reports are available

1. The **main report** released in public presenting the overall cohort and comparing hospital categories (i.e. University, Cantonal and Private)
2. The **hospital reports** provided to each participating site includes a detailed comparison to i) hospitals of the same category (i.e. your hospital compared to other participating hospitals of the same category) ii) to the overall cohort independent of hospital category.

This is the first report ever released with the understanding that some analyses may require further explanation, interpretation, discussion and potential adaptions. We welcome any feedback (directed to luisa.schaefer@swisscardio.ch) with the aim to improving SwissCaRe on a yearly basis. Any written feedback will be discussed within the Steering Committee.

We thank all participating sites for their contribution to SwissCaRe with the ultimate aim to improve the quality in coronary interventions in Switzerland.

On behalf of the SwissCaRe Steering Committee

Prof. Lorenz Räber, MD, PhD
Chair of the SwissCaRe Steering Committee

Background

PCI is by far the most frequent intervention in cardiovascular medicine. According to the last PCI Statistics published by the Swiss Working Group of Interventional Cardiology for 2021, 30'042 coronary angiographies and 26'513 PCIs were performed by 208 operators at 36 interventional centers located in 17 of the 26 Swiss cantons: 5 university hospitals, 14 non-university public hospitals and 17 private institutions. These previous statistics were not based on prospective registration of these interventions and did not include associated patients' characteristics, procedural quality and outcomes. However, there is growing interest from patients, media, politics and authorities to assess quality of medical treatments with particular focus on interventions. The KVG Art. 58 and KVV Art. 77 approved by the Swiss parliament on 21.6.2019 mandate quality assessment (actual state), and definition of measures to improve quality. Both require public release of the results. Also the ESC guidelines recommend the participation in prospective PCI quality registries (IB). Against these developments, the Swiss Society of Cardiology and its Working Group Interventional Cardiology have set up the prospective quality registry SwissCaRe proactively for the most frequent cardiology interventions in Switzerland, i.e. coronary angiography (CA) and percutaneous coronary interventions (PCI). The conduction of a Swiss PCI quality registry is supported by the members of the Swiss Society of Cardiology and its Working Group Interventional Cardiology Interventional Cardiology based on a general assembly voting.

Aim

Primary aim

To maintain and constantly improve the quality of coronary angiography (CA) and percutaneous coronary interventions (PCI) in Switzerland. The definition of indication and treatment quality is based on the European (ESC) guidelines on CCS, N-STEMI and STEMI and shall be adapted to changes whenever necessary.

Specific aims

To monitor the treatment quality of consecutive patients undergoing coronary angiography (CA) and/or percutaneous coronary interventions (PCI) in Switzerland.

1. Prospectively report the annual number of patients undergoing CA and PCI in Switzerland and describe relevant baseline and procedural characteristics
2. Assess the clinical indications of patients undergoing CA and PCI
3. Assess selected ESC-guideline endorsed procedural quality indicators of patients undergoing PCI (CCS, N-STEMI, STEMI)
4. Assess selected ESC-guideline endorsed contraindications (Class III recommendations)
5. Report severe procedural complications of all patients undergoing CA and PCI occurring in the catheterization laboratory
6. Report mortality (48h, 30 days) of all patients undergoing PCI

The publicly available "main report" shall provide results on indication and treatment quality on a nationwide level and comparisons between three hospital categories (i.e. university, cantonal and private). The "hospital reports" shall provide the participating sites with a detailed benchmark analysis in which the hospital performance is being compared with other hospitals of the same category in Switzerland.

Mortality will be collected through the federal office of statistics and require patient consent.

2 Steering Committee 2023

Chair: Prof. Lorenz Räber, MD, PhD
Quality responsible Swiss Society of Cardiology
Board Swiss Society of Cardiology
Board Swiss Working Group Interventional Cardiology

Prof. Richard Kobza, MD
President Swiss Society of Cardiology

Prof. Raban Jeger, MD
President Swiss Working Group Interventional Cardiology

Prof. Oliver Gämperli, MD
President-elect Swiss Working Group Interventional Cardiology

Prof. Marco Valgimigli, MD, PhD
Delegate Swiss Working Group Interventional Cardiology

Prof. Philippe Meyer, MD
Delegate Swiss Working Group for Cardiovascular Prevention, Rehabilitation and Sports Cardiology

Prof. Lars Englberger, MD
Delegate Swiss Society for Heart and Thoracic Vascular Surgery

3 Sponsorship

The professional set up of large registries require financial resources. We are grateful for the support of below mentioned sponsors, who kindly supported the SwissCaRe Registry during implementation and its first year of operation:

- **Major Sponsors:**

- **Minor Sponsors:**

4 Methods

Eligible patients
Any patient undergoing CA and/or PCI in Switzerland.

Consent
As identifying information is stored to obtain mortality data through the Federal Office for Statistics, patients have to agree to the use of identifying data. Generally, this consent can be obtained within the consent form for the CA/PCI (no specific registry consent form). A standardized consent form for CA/PCI that includes the registry consent or only the registry consent paragraph as well as an accompanying patient information are available to the participating sites. In the absence of consent the procedures are collected anonymized, and the mortality cannot be collected for these patients. Anonymized data entry is standardized via a No Consent SOP.

Follow up
There is no active follow-up. However, mortality data is obtained through the Federal Office for Statistics.

Mortality data aquisition (future reports)
To make the registry linkable to administrative data, like cause of death statistics, identifying information is required (last name, first name and date of birth). Identifying information is securely sent to the central compensation office CCO, where they are matched to the social security number SSN. At the FSO, SSN is matched to the cause of death registry and population data to get the status of the patients. This procedure is done annually and has a variable time lag of 6-18 months (data can only be linked after FSO published the annual mortality data). Status of patients is not allowed to feed back into the registry. The process is repeated annually.

Monitoring
Central monitoring is conducted on a quarterly basis by SwissRDL for all entered procedures. On-site monitoring has commenced by the start of 2024 and all participating sites will be monitored within the first two years. Thereafter, monitoring will follow a risk-based approach. Monitoring will primarily focus on 1) consecutive enrollment, 2) data completeness and 3) data correctness (compared to source data).

Definition of Case and Case identifying information
Every single patient is uniquely identified by patient name, last name, date of birth and sex. Patients undergoing repeated interventions at the identical clinic will be documented under the same hospital patient ID. Patients undergoing treatment at a second hospital will be recorded as new patient (as identifying information cannot be shared between hospitals).

Data security and storage
SwissRDL is part of the Institute of Social and Preventive Medicine ISPM at the University of Bern. Security and safety of the data are guaranteed by the IT regulations of the University and are described in respective SOPs at the ISPM. The hardware of SwissRDL is hosted at secure data centers at the University of Bern. Backup and security, as well as control and access systems are redundant and managed by the IT group of the ISPM and the University of Bern. Backup data are stored in a second data center at the University. SwissRDL has implemented a two-layered server structure for data collection to provide the best possible security and privacy protection of patient data. Clinical data are stored on the SwissRDL main server in a central Oracle database. Sensitive patient identifying information are stored on physically separated servers in the SwissRDL trust center. To match the clinical data stored on the main server, an internal ID is used. Identifying information

is never sent to the main server, and vice versa. This basic setup of the SwissRDL registry servers is part of the privacy preserving and security enhancing measures.

Data access
Access to the SwissRDL registry system is protected by password protected user accounts. Each user has one or more profiles assigned. Each profile defines the main purpose (e.g. data entry, administration) and handles access rights on different levels, like clinic, users, patients and forms. Each clinic has access to its own data and can export it. Access to the pooled registry data is ruled by contract with the SSC. Every site receives their raw data upon request.

Data entry
There are two possible modes of data entry:

1. Online data entry - Data can be entered directly into the registry using a web browser. ECRFs can be filled in from anywhere using the online forms.

2. Web services - Ideally, data is directly transferred from a data warehouse or clinic information system (CIS), if all mandatory variables for the registry already exist in the clinic. REST (Representational state transfer) API is used. With the support of SwissRDL, the IT personnel at the clinics implement the web services.

Registry staff
Coordination: Luisa Schäfer (SGK) and Camille Blochet (SwissRDL)
Data analysis and reporting: Andreas Boss (SwissRDL)

5 Results

Caution

In the SwissCaRe 2023 form version 1 all questions are mandatory and there is no answer option ‘unknown’. Therefore, when the center does not have access to the corresponding information, forms remain incomplete. For this reason, also incomplete form entries were considered in this report, provided that:

1. Procedure date is specified, and
2. the type of intervention is specified.

Caution

Note: P-values are provided to indicate potential differences between hospital types. However, no corrections for multiple testing have been applied.

5.1 Overview of performed interventions

Table 1

Characteristic	**Overall**, N = 19'166[1]	**University h.**, N = 9'117[1]	**Cantonal h.**, N = 6'033[1]	**Private h.**, N = 4'016[1]	**p-value**[2]
Procedure					<0.001
CA only	11'636 (61%)	6'437 (71%)	3'025 (50%)	2'174 (54%)	
PCI	7'530 (39%)	2'680 (29%)	3'008 (50%)	1'842 (46%)	
CA and PCI	6'335 (33%)	2'343 (26%)	2'433 (40%)	1'559 (39%)	
Staged PCI (planned PCI)	1'195 (6.2%)	337 (3.7%)	575 (9.5%)	283 (7.0%)	

[1] n (%)

[2] Pearson's Chi-squared test

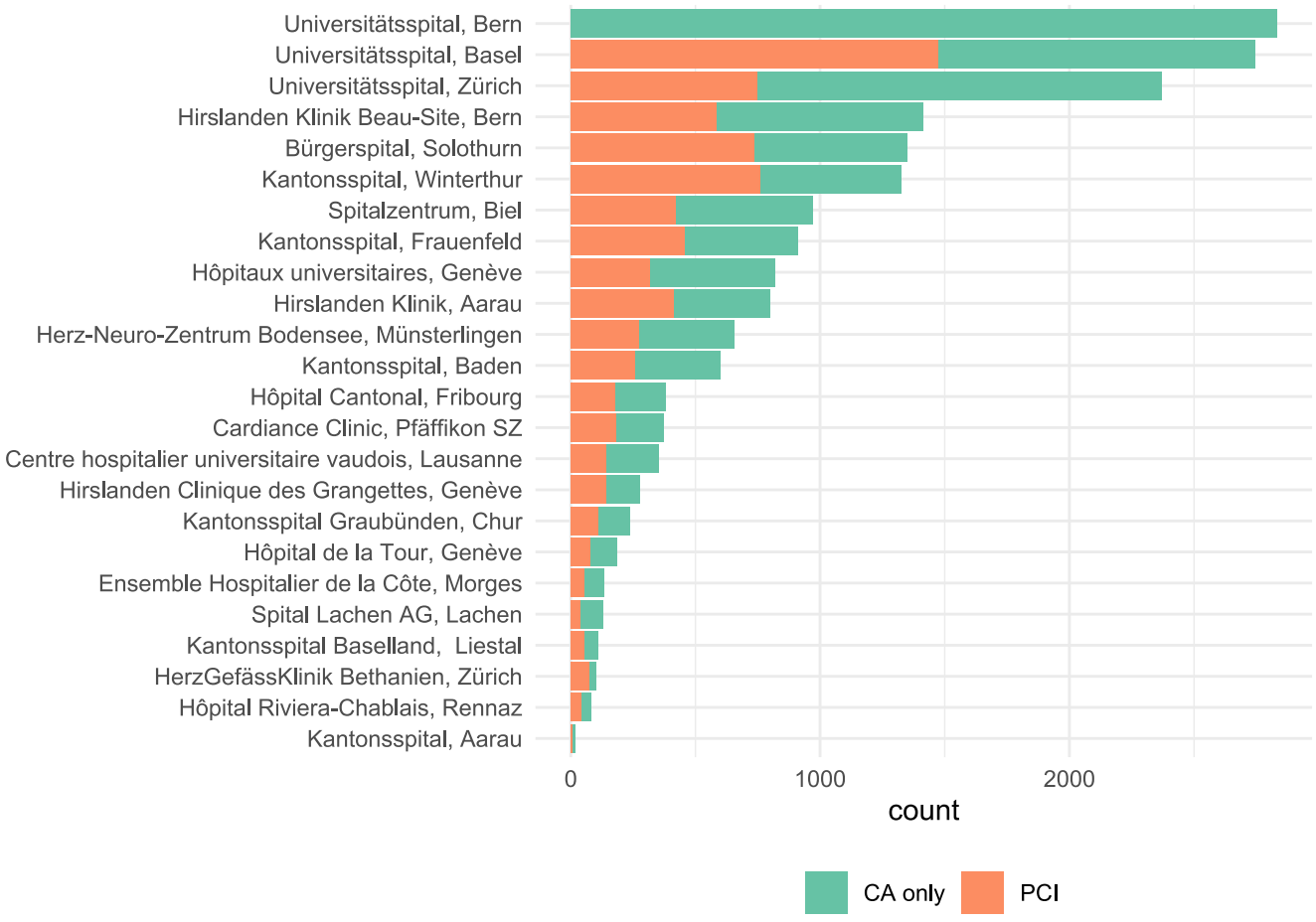

Figure 1: Number of procedures by center

5.2 PART I - Overview of diagnostic Coronary Angiographies (CA)

5.2.1 Characteristics of patients undergoing diagnostic CA

Table 2

Characteristic	**Overall**, N = 11'509[1]	**University h.**, N = 6'348[1]	**Cantonal h.**, N = 3'003[1]	**Private h.**, N = 2'158[1]	**p-value**[2]
age [y]					0.025
Mean (SD)	69 (12)	69 (12)	69 (11)	70 (11)	
Median (IQR)	70 (61, 78)	70 (61, 78)	70 (61, 77)	71 (63, 77)	
age group					<0.001
<40 y	209 (1.8%)	155 (2.4%)	42 (1.4%)	12 (0.6%)	
40 - 60 y	2'362 (21%)	1'330 (21%)	638 (21%)	394 (18%)	
60 - 80 y	6'909 (60%)	3'692 (58%)	1'830 (61%)	1'387 (64%)	
80+ y	2'029 (18%)	1'171 (18%)	493 (16%)	365 (17%)	
sex					0.003
female	3'835 (33%)	2'048 (32%)	1'005 (33%)	782 (36%)	
male	7'674 (67%)	4'300 (68%)	1'998 (67%)	1'376 (64%)	

[1] n (%)

[2] Kruskal-Wallis rank sum test; Pearson's Chi-squared test

Note

Note that from all form entries with procedure 'CA only', only the latest entry per patient was counted for Table 2.

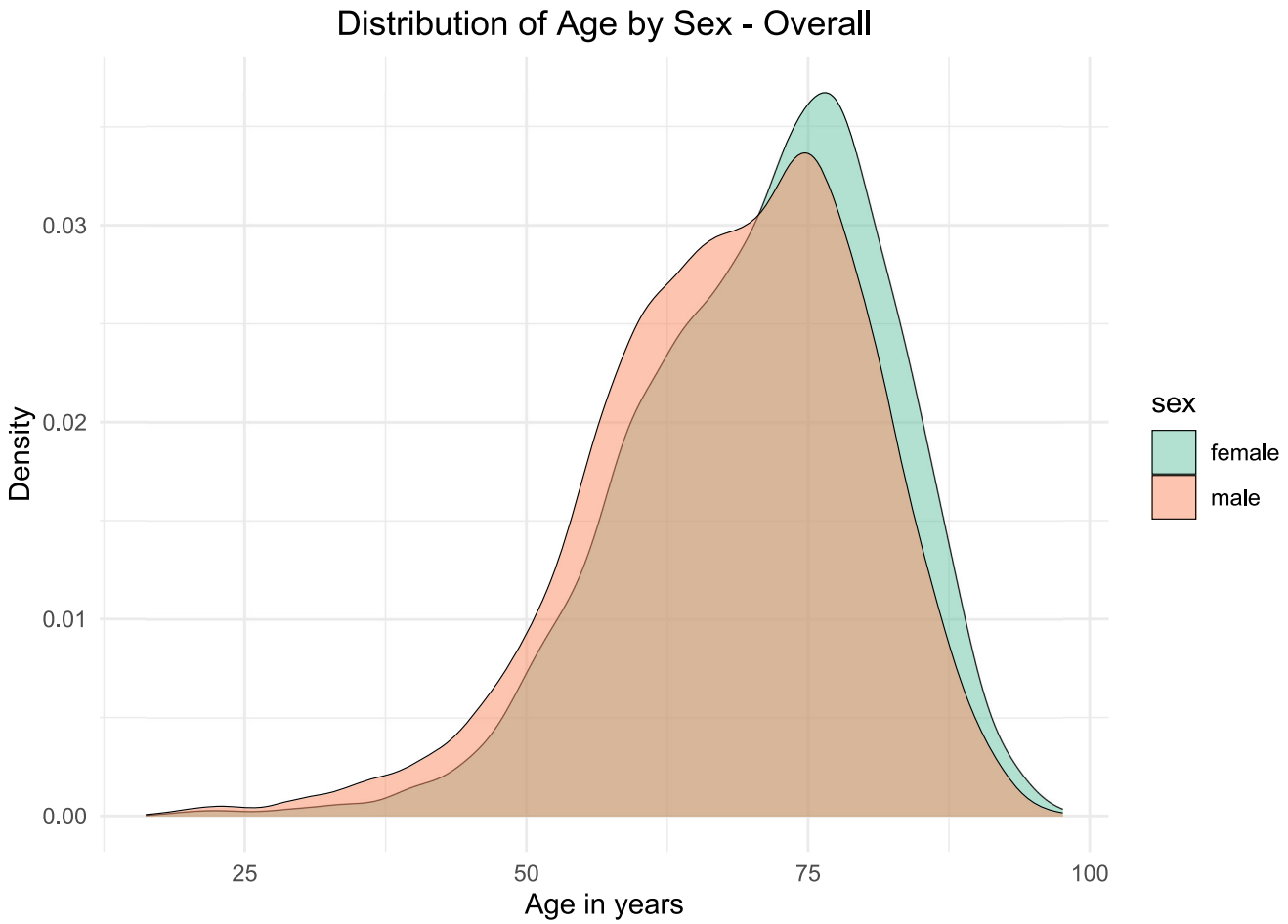

Figure 2: Age distribution by sex

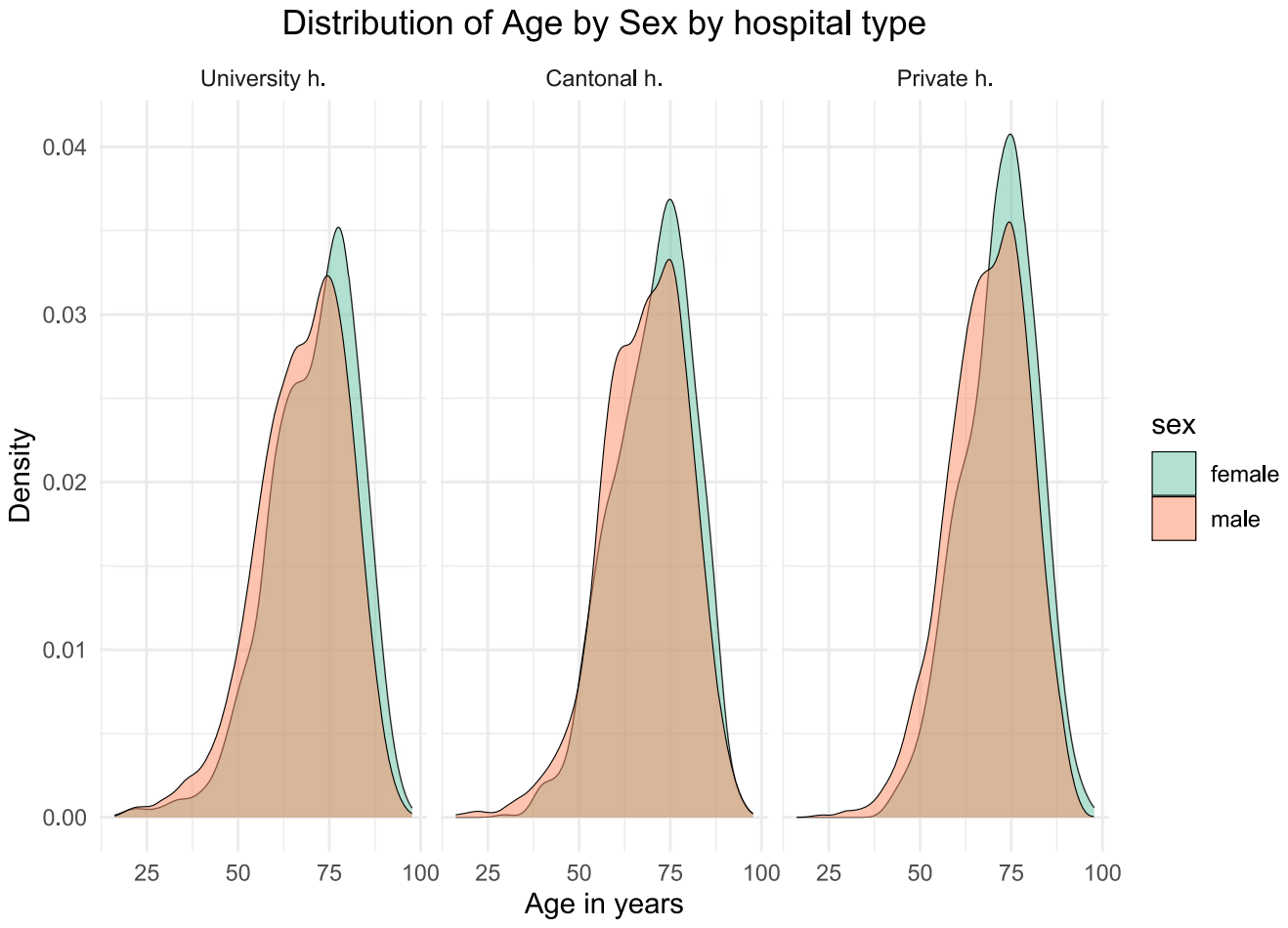

Figure 3: Age distribution by sex

5.2.2 Clinical presentation of patients undergoing diagnostic CA

Table 3

Characteristic	**Overall**, N = 11'636[1]	**University h.**, N = 6'437[1]	**Cantonal h.**, N = 3'025[1]	**Private h.**, N = 2'174[1]	**p-value**[2]
Type of Coronary Syndrom					<0.001
ACS	2'349 (21%)	1'370 (22%)	724 (24%)	255 (12%)	
CCS	9'078 (79%)	4'894 (78%)	2'268 (76%)	1'916 (88%)	
Missing	209	173	33	3	
Type of ACS					<0.001
Unstable angina pectoris	453 (19%)	198 (14%)	181 (25%)	74 (29%)	
Non-STEMI	1'488 (63%)	893 (65%)	449 (62%)	146 (57%)	
STEMI	243 (10%)	164 (12%)	62 (8.6%)	17 (6.7%)	
Unknown	165 (7.0%)	115 (8.4%)	32 (4.4%)	18 (7.1%)	

[1] n (%)

[2] Pearson's Chi-squared test

Note

The option 'Unknown' is not available in SwissCaRe form version V1 for the variable 'type of ACS'. This option was generated during post-processing of the data when the indication was reported as 'ACS', but further specification was lacking.

Patients categorized as STEMI without interventions are frequently patients referred with a suspected STEMI (i.e. indication for coronary angiography) in whom angiography did not confirm the diagnosis (e.g. in case of Tako Tsubo, Perimyocarditis, etc.)

5.2.3 Indication of patients undergoing diagnostic CA

Table 4

Characteristic	**Overall**, N = 11'636[1]	**University h.**, N = 6'437[1]	**Cantonal h.**, N = 3'025[1]	**Private h.**, N = 2'174[1]	**p-value**[2]
Indication					<0.001
Clinical presentation as ACS	2'349 (21%)	1'370 (22%)	724 (24%)	255 (12%)	
Suspected CAD or suspected progression of known CAD	5'445 (48%)	2'538 (41%)	1'562 (52%)	1'345 (62%)	
Planned valvular heart disease intervention	1'769 (15%)	1'107 (18%)	320 (11%)	342 (16%)	
Follow-up after HTX	116 (1.0%)	108 (1.7%)	2 (<0.1%)	6 (0.3%)	
Heart failure	705 (6.2%)	432 (6.9%)	189 (6.3%)	84 (3.9%)	
Routine follow-up	334 (2.9%)	203 (3.2%)	87 (2.9%)	44 (2.0%)	
Tachy- or bradyarrhythmia	243 (2.1%)	152 (2.4%)	55 (1.8%)	36 (1.7%)	
Planned vascular surgery	214 (1.9%)	160 (2.6%)	31 (1.0%)	23 (1.1%)	
Planned major surgery	252 (2.2%)	194 (3.1%)	22 (0.7%)	36 (1.7%)	
Missing	209	173	33	3	

[1] n (%)

[2] Pearson's Chi-squared test

5.2.4 Preceeding diagnostic tests in patients with suspected (progression of) CAD undergoing diagnostic CA

Table 5

Characteristic[1]	**Overall**, N = 5'445[2]	**University h.**, N = 2'538[2]	**Cantonal h.**, N = 1'562[2]	**Private h.**, N = 1'345[2]	**p-value**[3]
Preceeding tests suggesting CAD*	3'386 (63%)	1'447 (57%)	971 (63%)	968 (72%)	<0.001
Missing	42	15	27	0	
Treadmill indicating ischemia*	1'233 (23%)	336 (13%)	377 (25%)	520 (39%)	<0.001
CCTA with significant stenoses*	709 (13%)	329 (13%)	184 (12%)	196 (15%)	0.12
Stress MRI with ischemia*	358 (6.6%)	161 (6.4%)	105 (6.8%)	92 (6.8%)	0.8
Stress TTE with ischemia*	247 (4.6%)	141 (5.6%)	43 (2.8%)	63 (4.7%)	<0.001
TTE with hypokinesia*	562 (10%)	212 (8.4%)	254 (17%)	96 (7.1%)	<0.001
Nuclear test with ischemia*	383 (7.1%)	293 (12%)	46 (3.0%)	44 (3.3%)	<0.001

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test

5.2.5 Symptoms in patients with suspected (progression of) CAD undergoing diagnostic CA

Table 6

Characteristic	**Overall**, N = 5'445[1]	**University h.**, N = 2'538[1]	**Cantonal h.**, N = 1'562[1]	**Private h.**, N = 1'345[1]	**p-value**[2]
Asymptomatic patients	1'731 (33%)	947 (38%)	423 (28%)	361 (28%)	<0.001
Missing	12	19	62	47	
Dyspnea	2'307 (43%)	986 (39%)	702 (46%)	619 (48%)	<0.001
Missing	103	19	37	47	
Angina pectoris	2'143 (40%)	919 (36%)	627 (41%)	597 (44%)	<0.001
Missing	31	3	28	0	
if Angina: CCS					<0.001
I	300 (14%)	130 (14%)	89 (14%)	81 (14%)	
II	1'315 (61%)	502 (55%)	428 (68%)	385 (64%)	
III	341 (16%)	162 (18%)	74 (12%)	105 (18%)	
IV	95 (4.4%)	57 (6.2%)	19 (3.0%)	19 (3.2%)	
Unknown	92 (4.3%)	68 (7.4%)	17 (2.7%)	7 (1.2%)	
if Angina: Anti-anginal drugs (prior or current)					<0.001
No	1'170 (55%)	479 (52%)	372 (59%)	319 (53%)	
Yes	728 (34%)	207 (23%)	243 (39%)	278 (47%)	
Unknown	245 (11%)	233 (25%)	12 (1.9%)	0 (0%)	

[1] n (%)

[2] Pearson's Chi-squared test

Note

Please note that symptoms are assessed only in those patients with indication ‘Suspected CAD or suspected progression of known CAD’.

Option ‘Unknown’ is not included in SwissCaRe form version V1. This option was generated during post-processing of the data where ‘Angina pectoris’ was recorded as ‘Yes’, but either ‘CCS’ or ‘Anti-anginal drugs’ were missing.

5.2.6 Procedural characteristics of patients undergoing diagnostic CA

Table 7

Characteristic[1]	**Overall**, N = 11'636[2]	**University h.**, N = 6'437[2]	**Cantonal h.**, N = 3'025[2]	**Private h.**, N = 2'174[2]	**p-value**[3]
Access					<0.001
Femoral	2'717 (24%)	1'681 (26%)	558 (19%)	478 (22%)	
Radial	8'812 (76%)	4'669 (74%)	2'447 (81%)	1'696 (78%)	
Missing	107	87	20	0	
Intracoronary imaging*	214 (1.8%)	151 (2.3%)	48 (1.6%)	15 (0.7%)	<0.001
Missing	29	0	25	4	
IVUS*	70 (0.6%)	46 (0.7%)	16 (0.5%)	8 (0.4%)	0.2
OCT*	152 (1.3%)	113 (1.8%)	32 (1.1%)	7 (0.3%)	<0.001
Intracoronary physiology*	1'086 (9.4%)	460 (7.1%)	360 (12%)	266 (12%)	<0.001
Missing	25	0	21	4	
Resting index (iFR/RFR)*	781 (6.7%)	322 (5.0%)	231 (7.7%)	228 (11%)	<0.001
FFR*	474 (4.1%)	205 (3.2%)	157 (5.2%)	112 (5.2%)	<0.001

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test

5.2.7 Anticipated treatment after diagnostic CA

Table 8

Characteristic	Clinical presentation as ACS				Suspected CAD or suspected progression of known CAD			
	Overall, N = 2'349[1]	**University h.**, N = 1'370[1]	**Cantonal h.**, N = 724[1]	**Private h.**, N = 255[1]	**Overall**, N = 5'445[1]	**University h.**, N = 2'538[1]	**Cantonal h.**, N = 1'562[1]	**Private h.**, N = 1'345[1]
Treatment in case of CAD/ACS								
Conservative	1'654 (77%)	1'001 (79%)	469 (71%)	184 (80%)	4'202 (83%)	2'089 (84%)	1'065 (78%)	1'048 (85%)
CABG	369 (17%)	190 (15%)	141 (21%)	38 (16%)	553 (11%)	239 (9.7%)	179 (13%)	135 (11%)
PCI	135 (6.3%)	75 (5.9%)	51 (7.7%)	9 (3.9%)	325 (6.4%)	147 (5.9%)	124 (9.1%)	54 (4.4%)
Missing	191	104	63	24	365	63	194	108

[1] n (%)

5.2.8 Major complications in patients undergoing diagnostic CA

Note

Major complications are shown in 1.) all patients undergoing diagnostic CA (Table 9) and in 2) specifically in patients with coronary syndrom types CCS and ACS (Table 10).

Table 9

Characteristic[1]	**Overall**, N = 11'636[2]	**University h.**, N = 6'437[2]	**Cantonal h.**, N = 3'025[2]	**Private h.**, N = 2'174[2]	**p-value**[3]
Major complications*	19 (0.2%)	13 (0.2%)	1 (<0.1%)	5 (0.2%)	0.080
Emergency open heart surgery*	6 (<0.1%)	5 (<0.1%)	0 (0%)	1 (<0.1%)	0.3
Clinically overt stroke*	9 (<0.1%)	7 (0.1%)	0 (0%)	2 (<0.1%)	0.2
Procedural death*	4 (<0.1%)	1 (<0.1%)	1 (<0.1%)	2 (<0.1%)	0.2
Missing	34	29	1	4	

[1] *: Multiple-choice variable

[2] n (%)

[3] Fisher's exact test

Table 10

Characteristic[1]	ACS				CCS			
	Overall, N = 2'349[2]	**University h.**, N = 1'370[2]	**Cantonal h.**, N = 724[2]	**Private h.**, N = 255[2]	**Overall**, N = 9'078[2]	**University h.**, N = 4'894[2]	**Cantonal h.**, N = 2'268[2]	**Private h.**, N = 1'916[2]
Major complications*	9 (0.4%)	6 (0.4%)	1 (0.1%)	2 (0.8%)	9 (<0.1%)	6 (0.1%)	0 (0%)	3 (0.2%)
Emergency open heart surgery*	5 (0.2%)	4 (0.3%)	0 (0%)	1 (0.4%)	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)
Clinically overt stroke*	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)	7 (<0.1%)	5 (0.1%)	0 (0%)	2 (0.1%)
Procedural death*	3 (0.1%)	1 (<0.1%)	1 (0.1%)	1 (0.4%)	1 (<0.1%)	0 (0%)	0 (0%)	1 (<0.1%)
Missing	10	10	0	0	17	16	0	1

[1] *: Multiple-choice variable

[2] n (%)

5.3 PART II - Overview of Percutaneous Coronary Interventions (PCI)

Note

This includes interventions of the type ‘Coronary angiography and PCI’, as well as ’ Staged PCI ‘. Please note that some of the information displayed below is not available for the intervention type’ Staged PCI ’.

5.3.1 Clinical characteristics of patients undergoing PCI

Table 11

Characteristic[1]	**Overall**, N = 6'557[2]	**University h.**, N = 2'372[2]	**Cantonal h.**, N = 2'566[2]	**Private h.**, N = 1'619[2]	**p-value**[3]
age [y]					<0.001
Mean (SD)	69 (11)	69 (12)	70 (11)	70 (11)	
Median (IQR)	70 (61, 78)	69 (60, 78)	71 (62, 78)	71 (62, 78)	
age group					<0.001
<40 y	61 (0.9%)	27 (1.1%)	18 (0.7%)	16 (1.0%)	
40 - 60 y	1'363 (21%)	573 (24%)	491 (19%)	299 (18%)	
60 - 80 y	3'914 (60%)	1'334 (56%)	1'570 (61%)	1'010 (62%)	
80+ y	1'219 (19%)	438 (18%)	487 (19%)	294 (18%)	
sex					0.4
female	1'651 (25%)	574 (24%)	655 (26%)	422 (26%)	
male	4'906 (75%)	1'798 (76%)	1'911 (74%)	1'197 (74%)	
cvRF*	5'049 (92%)	1'847 (90%)	1'923 (94%)	1'279 (94%)	<0.001
Missing	1'092	312	521	259	
Arterial hypertension*	3'823 (70%)	1'338 (65%)	1'504 (74%)	981 (72%)	<0.001
Diabetes requiring medication*	1'340 (25%)	530 (26%)	502 (25%)	308 (23%)	0.12
Dyslipidemia*	3'875 (71%)	1'300 (63%)	1'527 (75%)	1'048 (77%)	<0.001
Smoking*	1'517 (28%)	641 (31%)	537 (26%)	339 (25%)	<0.001
Family history*	1'193 (22%)	515 (25%)	353 (17%)	325 (24%)	<0.001
Number of CVRFs					<0.001
0	416 (7.6%)	213 (10%)	122 (6.0%)	81 (6.0%)	
1	1'028 (19%)	417 (20%)	385 (19%)	226 (17%)	
2	1'966 (36%)	649 (32%)	778 (38%)	539 (40%)	
3	1'503 (28%)	544 (26%)	583 (29%)	376 (28%)	
4 or 5	552 (10%)	237 (12%)	177 (8.7%)	138 (10%)	
Missing	1'092	312	521	259	
Patient history					<0.001
None	3'510 (64%)	1'306 (63%)	1'344 (66%)	860 (63%)	
Prior PCI	1'632 (30%)	632 (31%)	580 (29%)	420 (31%)	
Prior CABG	179 (3.3%)	93 (4.5%)	40 (2.0%)	46 (3.4%)	
Prior PCI & CABG	125 (2.3%)	29 (1.4%)	62 (3.1%)	34 (2.5%)	
Missing	1'111	312	540	259	
LVEF					<0.001
Normal (50-70%)	3'355 (72%)	882 (63%)	1'430 (73%)	1'043 (79%)	
Mildly reduced (40-49%)	767 (16%)	284 (20%)	288 (15%)	195 (15%)	

[1] *: Multiple-choice variable

[2] n (%)

[3] Kruskal-Wallis rank sum test; Pearson's Chi-squared test

Characteristic[1]	Overall, N = 6'557[2]	University h., N = 2'372[2]	Cantonal h., N = 2'566[2]	Private h., N = 1'619[2]	p-value[3]
Moderately reduced (30-39%)	341 (7.3%)	135 (9.7%)	141 (7.2%)	65 (4.9%)	
Severly reduced (<30%)	211 (4.5%)	97 (6.9%)	91 (4.7%)	23 (1.7%)	
Missing	1'883	974	616	293	

[1] *: Multiple-choice variable

[2] n (%)

[3] Kruskal-Wallis rank sum test; Pearson's Chi-squared test

Note

Please note that among all form entries with the procedure labeled as 'PCI', only one entry per patient was considered for inclusion in Table 11. In cases where multiple form entries existed for a single patient, the following criteria were applied for selection:

1. Submitted forms were given priority.
2. Procedures of the type 'CA + PCI' were prioritized over 'Staged PCI'.
3. The most recent procedure date was used for selection.

Please note: 'cvRF', 'patient history', and 'LVEF' are not available for a total of 0 patients who only had entries of the procedure type 'Staged PCI' within the current report year 2023. Additional missing values are due to the inclusion of incomplete form entries.

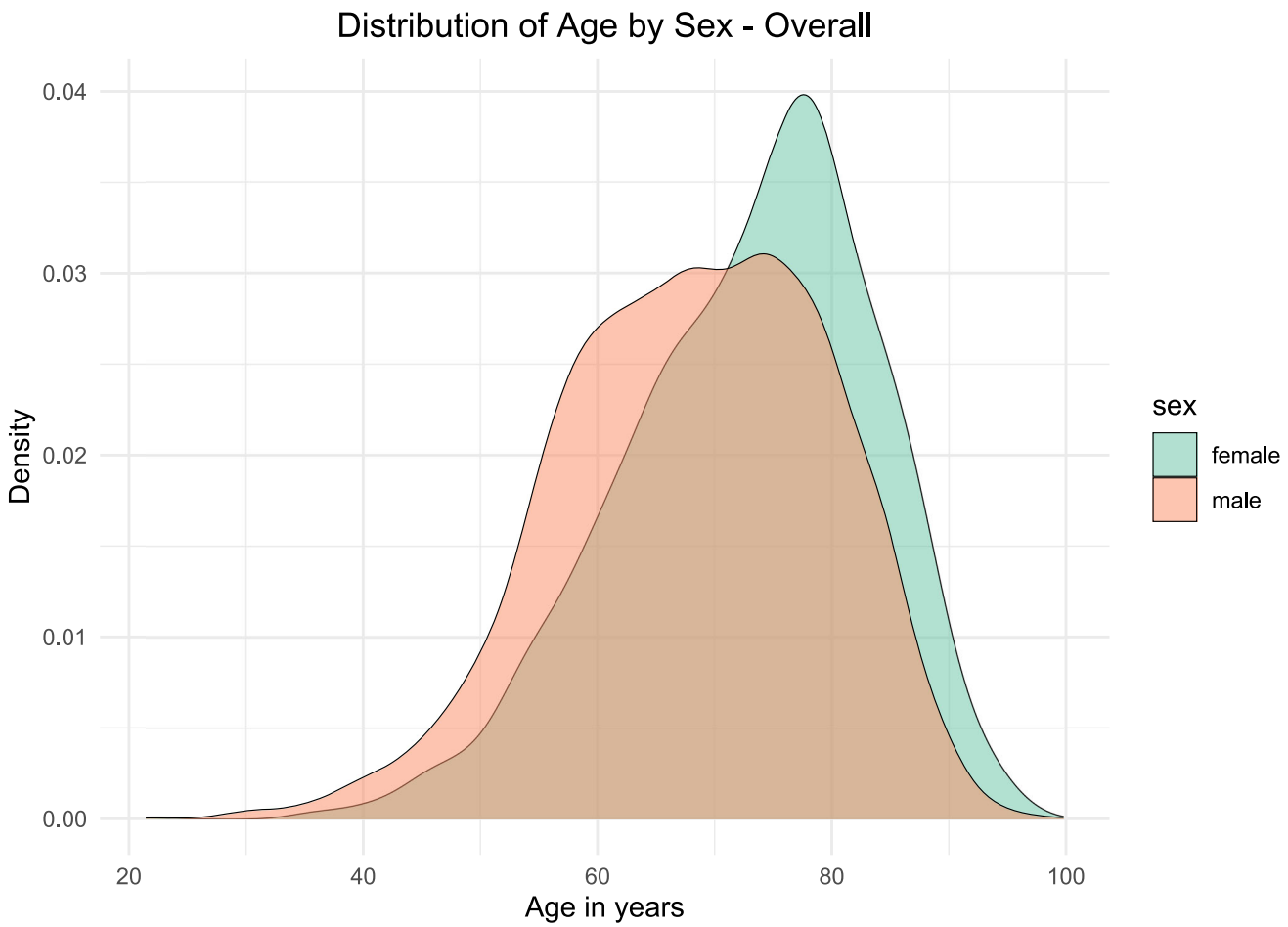

Figure 4: Age distribution by sex

Figure 5: Age distribution by sex

5.3.2 Clinical presentation of patients undergoing PCI

Note

The option 'Unknown' is not available in form version V1 for the variable 'type of ACS'. This option was generated during post-processing of the data when the indication was reported as 'ACS', but further specification was lacking.

Table 12

Characteristic	**Overall**, N = 7'530[1]	**University h.**, N = 2'680[1]	**Cantonal h.**, N = 3'008[1]	**Private h.**, N = 1'842[1]	**p-value**[2]
Out of hospital cardiac arrest	223 (3.5%)	136 (5.8%)	63 (2.6%)	24 (1.5%)	<0.001
Missing	1'205	337	585	283	
Intubated	173 (2.7%)	101 (4.3%)	44 (1.8%)	28 (1.8%)	<0.001
Missing	1'200	337	580	283	
Cardiogenic shock	188 (3.0%)	97 (4.1%)	69 (2.9%)	22 (1.4%)	<0.001
Missing	1'244	337	624	283	
Type of Coronary Syndrom					<0.001
ACS	2'959 (40%)	1'258 (48%)	1'198 (40%)	503 (28%)	
CCS	3'260 (44%)	999 (39%)	1'223 (41%)	1'038 (57%)	
Staged PCI	1'195 (16%)	337 (13%)	575 (19%)	283 (16%)	
Missing	116	86	12	18	
Type of ACS					<0.001
Unstable angina pectoris	310 (10%)	69 (5.5%)	158 (13%)	83 (17%)	
Non-STEMI	1'481 (50%)	586 (47%)	635 (53%)	260 (52%)	
STEMI	1'063 (36%)	521 (41%)	387 (32%)	155 (31%)	

[1] n (%)

[2] Pearson's Chi-squared test

Characteristic	**Overall**, N = 7'530[1]	**University h.**, N = 2'680[1]	**Cantonal h.**, N = 3'008[1]	**Private h.**, N = 1'842[1]	**p-value**[2]
Unknown	105 (3.5%)	82 (6.5%)	18 (1.5%)	5 (1.0%)	

[1] n (%)

[2] Pearson's Chi-squared test

5.3.3 Indication of patients undergoing PCI

Table 13

Characteristic	**Overall**, N = 6'335[1]	**University h.**, N = 2'343[1]	**Cantonal h.**, N = 2'433[1]	**Private h.**, N = 1'559[1]	**p-value**
Indication					
Clinical presentation as ACS	2'959 (48%)	1'258 (56%)	1'198 (49%)	503 (33%)	
Suspected CAD or suspected progression of known CAD	2'936 (47%)	901 (40%)	1'065 (44%)	970 (63%)	
Planned valvular heart disease intervention	40 (0.6%)	9 (0.4%)	20 (0.8%)	11 (0.7%)	
Follow-up after HTX	9 (0.1%)	3 (0.1%)	3 (0.1%)	3 (0.2%)	
Heart failure	99 (1.6%)	37 (1.6%)	49 (2.0%)	13 (0.8%)	
Routine follow-up	122 (2.0%)	31 (1.4%)	69 (2.9%)	22 (1.4%)	
Tachy- or bradyarrhythmia	28 (0.5%)	10 (0.4%)	7 (0.3%)	11 (0.7%)	
Planned vascular surgery	14 (0.2%)	6 (0.3%)	6 (0.2%)	2 (0.1%)	
Planned major surgery	12 (0.2%)	2 (<0.1%)	4 (0.2%)	6 (0.4%)	
Missing	116	86	12	18	

[1] n (%)

Note

Please note: The corresponding information is not available in 1195 form entries of the procedure type ‘Staged PCI’ within the current report year 2023. These entries were discarded from the table above.

5.3.4 Preceeding diagnostic tests in patients with suspected (progression of) CAD undergoing PCI

Table 14

Characteristic[1]	**Overall**, N = 2'936[2]	**University h.**, N = 901[2]	**Cantonal h.**, N = 1'065[2]	**Private h.**, N = 970[2]	**p-value**[3]
Preceeding tests suggesting CAD*	2'095 (72%)	584 (66%)	763 (73%)	748 (77%)	<0.001
Missing	35	18	16	1	
Treadmill indicating ischemia*	729 (25%)	75 (8.5%)	288 (27%)	366 (38%)	<0.001
CCTA with significant stenoses*	477 (16%)	97 (11%)	186 (18%)	194 (20%)	<0.001
Stress MRI with ischemia*	216 (7.4%)	51 (5.8%)	95 (9.1%)	70 (7.2%)	0.022
Stress TTE with ischemia*	208 (7.2%)	85 (9.6%)	29 (2.8%)	94 (9.7%)	<0.001
TTE with hypokinesia*	243 (8.4%)	22 (2.5%)	158 (15%)	63 (6.5%)	<0.001
Nuclear test with ischemia*	345 (12%)	267 (30%)	40 (3.8%)	38 (3.9%)	<0.001

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test

5.3.5 Symptoms in patients with suspected (progression of) CAD undergoing PCI

Table 15

Characteristic	**Overall**, N = 2'936[1]	**University h.**, N = 901[1]	**Cantonal h.**, N = 1'065[1]	**Private h.**, N = 970[1]	**p-value**[2]
Asymptomatic patients	634 (22%)	193 (22%)	195 (19%)	246 (26%)	<0.001
Missing	94	8	49	37	
Dyspnea	1'260 (44%)	410 (46%)	463 (45%)	387 (41%)	0.15
Missing	70	8	25	37	
Angina pectoris	1'657 (57%)	523 (58%)	608 (59%)	526 (54%)	0.094
Missing	30	0	30	0	
if Angina: CCS					<0.001
I	122 (7.4%)	29 (5.5%)	45 (7.4%)	48 (9.1%)	
II	998 (60%)	303 (58%)	395 (65%)	300 (57%)	
III	375 (23%)	74 (14%)	142 (23%)	159 (30%)	
IV	57 (3.4%)	31 (5.9%)	16 (2.6%)	10 (1.9%)	
Unknown	105 (6.3%)	86 (16%)	10 (1.6%)	9 (1.7%)	
if Angina: Anti-anginal drugs (prior or current)					<0.001
No	720 (43%)	89 (17%)	370 (61%)	261 (50%)	
Yes	553 (33%)	62 (12%)	227 (37%)	264 (50%)	
Unknown	384 (23%)	372 (71%)	11 (1.8%)	1 (0.2%)	

[1] n (%)

[2] Pearson's Chi-squared test

Note

Please note that symptoms are assessed only in those patients with indication ‘Suspected CAD or suspected progression of known CAD’.

The answer option ‘Unknown’ is not included in SwissCaRe form version 1. This option was generated during post-processing of the data where ‘Angina pectoris’ was recorded as ‘Yes’, but either ‘CCS’ or ‘Anti-anginal drugs’ were missing.

5.3.6 Referral times of NSTEMI patients undergoing PCI

Table 16

Characteristic	**Overall**, N = 1'481[1]	**University h.**, N = 586[1]	**Cantonal h.**, N = 635[1]	**Private h.**, N = 260[1]	**p-value**[2]
Time between first ECG and coronary angiography					0.041
<24 hours	758 (65%)	167 (59%)	408 (65%)	183 (71%)	
24-48 hours	254 (22%)	77 (27%)	130 (21%)	47 (18%)	
>48 hours	157 (13%)	38 (13%)	90 (14%)	29 (11%)	
Missing	312	304	7	1	

[1] n (%)

[2] Pearson's Chi-squared test

5.3.7 Referral times of STEMI patients undergoing PCI

Table 17

Characteristic	**Overall**, N = 1'063	**University h.**, N = 521	**Cantonal h.**, N = 387	**Private h.**, N = 155	**p-value**[1]
Symptoms-to-hospitalization time [h]					0.005
Mean (SD)	9 (20)	6 (14)	10 (21)	13 (25)	
Median (IQR)	2 (1, 7)	2 (1, 6)	2 (1, 7)	3 (2, 9)	
Missing	318	286	27	5	
Door-to-balloon time [min]					<0.001
Mean (SD)	80 (161)	72 (148)	92 (178)	79 (157)	
Median (IQR)	50 (30, 79)	45 (27, 71)	60 (38, 85)	44 (25, 80)	
Missing	64	28	28	8	

[1] Kruskal-Wallis rank sum test

Note

Improbable and impossible referral times have been excluded from analysis and are reported as missing (together with missing values).

Symptoms-to-hospitalization times <= 0 and > 2 weeks have been excluded from the analysis. Door-to-balloon times < 10 minutes and > 48 hours have been excluded from the analysis.

While it cannot be ruled out that symptoms occur only after hospitalization, visual inspection of these cases with negative 'symptoms-to-hospitalization time' indicated that at least some of them are more likely to be erroneous data entries. Furthermore, the calculated 'door-to-balloon time' is not meaningful in these cases. Therefore, neither 'symptoms-to-hospitalization' time nor 'door-to-balloon time' will be reported for cases where the 'symptoms-to-hospitalization time' is negative.

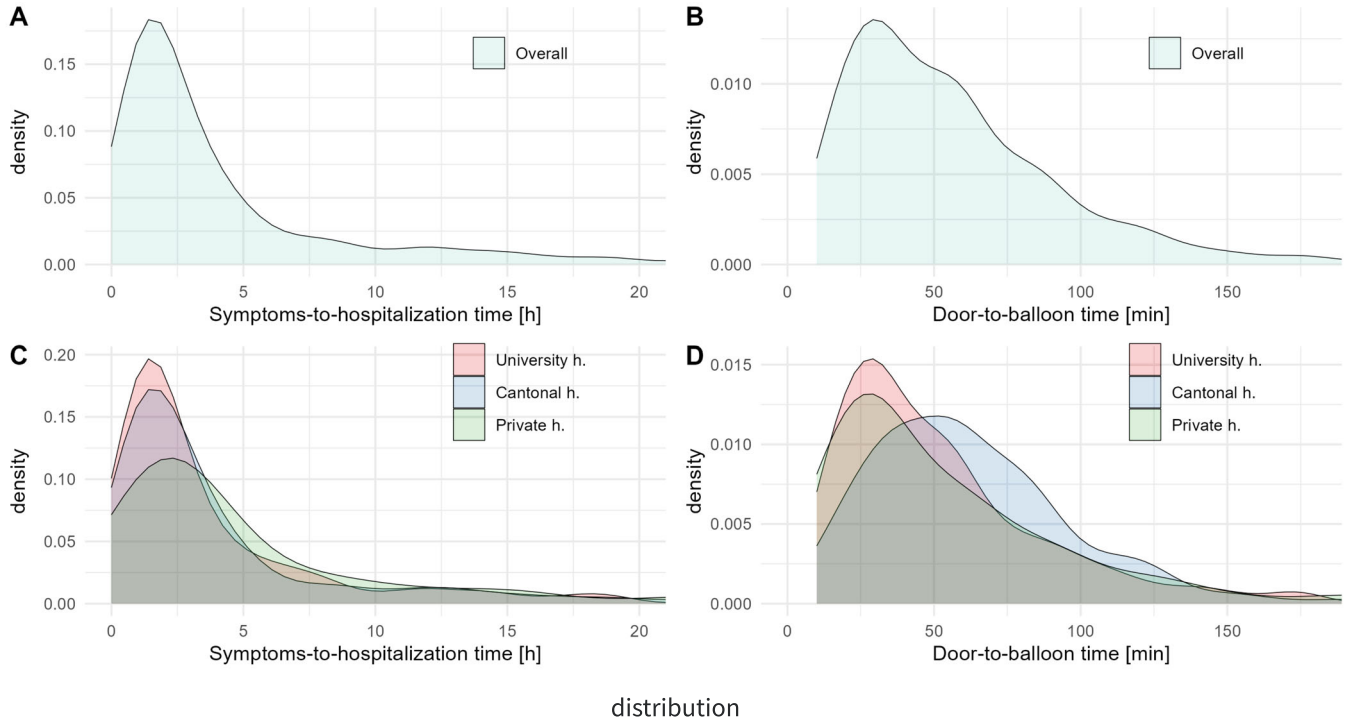

Figure 6: Distribution of Symptoms-to-hospitalization time (A/C) and Door-to-balloon time (B/D) in STEMI patients undergoing PCI

5.3.8 Procedural characteristics of patients undergoing PCI

Table 18

Characteristic[1]	**Overall**, N = 7'530[2]	**University h.**, N = 2'680[2]	**Cantonal h.**, N = 3'008[2]	**Private h.**, N = 1'842[2]	**p-value**[3]
Mechanical support devices*	58 (0.9%)	31 (1.3%)	12 (0.5%)	15 (1.0%)	0.012
Missing	1'229	337	609	283	
Impella*	43 (0.7%)	23 (1.0%)	9 (0.4%)	11 (0.7%)	0.040
ECMO*	18 (0.3%)	10 (0.4%)	4 (0.2%)	4 (0.3%)	0.2
Access					0.001
Femoral	1'730 (24%)	650 (26%)	681 (23%)	399 (22%)	
Radial	5'574 (76%)	1'834 (74%)	2'297 (77%)	1'443 (78%)	
Missing	226	196	30	0	
Dose [cGycm2 = uGym2]					<0.001
Mean (SD)	5'722 (5'919)	5'711 (5'219)	5'950 (6'364)	5'390 (5'985)	
Median (IQR)	3'956 (2'136, 7'196)	4'138 (2'243, 7'450)	4'000 (2'304, 7'111)	3'607 (1'690, 7'177)	
Missing	1'063	615	353	95	
Dose above 10'000 cGycm2 (=uGym2)	898 (14%)	290 (14%)	385 (15%)	223 (13%)	0.3
Missing	1'063	615	353	95	
Intracoronary imaging*	747 (10%)	450 (17%)	203 (6.9%)	94 (5.1%)	<0.001
Missing	81	0	81	0	
IVUS*	454 (6.1%)	364 (14%)	60 (2.0%)	30 (1.6%)	<0.001

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test; Fisher's exact test; Kruskal-Wallis rank sum test

Characteristic[1]	**Overall**, N = 7'530[2]	**University h.**, N = 2'680[2]	**Cantonal h.**, N = 3'008[2]	**Private h.**, N = 1'842[2]	**p-value**[3]
OCT*	312 (4.2%)	104 (3.9%)	144 (4.9%)	64 (3.5%)	0.032
Intracoronary physiology*	617 (8.3%)	169 (6.3%)	253 (8.6%)	195 (11%)	<0.001
Missing	59	0	59	0	
Resting index (iFR/RFR)*	485 (6.5%)	135 (5.0%)	198 (6.7%)	152 (8.3%)	<0.001
FFR*	226 (3.0%)	52 (1.9%)	89 (3.0%)	85 (4.6%)	<0.001

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test; Fisher's exact test; Kruskal-Wallis rank sum test

Note

Please note: Not all variables listed in the above table are collected for 1195 form entries of the procedure type ‘Staged PCI’ within the current report year 2023. Additional missing values are due to the inclusion of incomplete forms.

Implausible dosage values have been recategorized as missing. Dosage values < 100 and > 50’000 cGycm2/uGym2 have been deemed implausible.

5.3.9 PCI-specific procedural characteristics of patients undergoing PCI

Table 19

Characteristic	**Overall**, N = 7'530[1]	**University h.**, N = 2'680[1]	**Cantonal h.**, N = 3'008[1]	**Private h.**, N = 1'842[1]	**p-value**[2]
Number of treated lesions					<0.001
Mean (SD)	1.59 (0.89)	1.67 (0.98)	1.56 (0.87)	1.52 (0.79)	
Median (IQR)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	
Missing	120	37	60	23	
Number of treated vessels					0.3
Mean (SD)	1.26 (0.53)	1.26 (0.55)	1.27 (0.54)	1.23 (0.49)	
Median (IQR)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	
Missing	92	19	52	21	
Unprotected left main stenosis treated	441 (5.9%)	154 (5.7%)	181 (6.1%)	106 (5.8%)	0.8
Missing	50	0	50	0	
Number of implanted stents					<0.001
Mean (SD)	1.52 (1.04)	1.38 (0.97)	1.58 (1.07)	1.62 (1.07)	
Median (IQR)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	1.00 (1.00, 2.00)	
Missing	43	0	43	0	
Number of used drug-eluting balloons					<0.001
Mean (SD)	0.23 (0.57)	0.32 (0.63)	0.20 (0.55)	0.16 (0.48)	
Median (IQR)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	
Missing	122	0	122	0	
Drug-eluting balloon only	139 (1.9%)	71 (2.6%)	47 (1.6%)	21 (1.1%)	<0.001
Missing	132	0	132	0	
Stent failure intervention*	460 (7.7%)	78 (6.5%)	266 (9.0%)	116 (6.3%)	<0.001
Missing	1'528	1'473	55	0	
Restenosis*	406 (6.8%)	61 (5.1%)	237 (8.0%)	108 (5.9%)	<0.001
Stent thrombosis*	56 (0.9%)	17 (1.4%)	31 (1.0%)	8 (0.4%)	0.015
CTO procedure	477 (6.4%)	154 (5.7%)	173 (5.8%)	150 (8.1%)	0.001
Missing	31	0	31	0	
CTO procedure - specification					<0.001
Antegrade	428 (90%)	125 (81%)	163 (94%)	140 (93%)	
Retrograde	49 (10%)	29 (19%)	10 (5.8%)	10 (6.7%)	
Calcium modification*	520 (7.0%)	197 (7.4%)	194 (6.6%)	129 (7.0%)	0.5
Missing	64	0	64	0	
Cutting balloon*	162 (2.2%)	92 (3.4%)	40 (1.4%)	30 (1.6%)	<0.001

[1] n (%)

[2] Kruskal-Wallis rank sum test; Pearson's Chi-squared test; Fisher's exact test

Characteristic	**Overall**, N = 7'530[1]	**University h.**, N = 2'680[1]	**Cantonal h.**, N = 3'008[1]	**Private h.**, N = 1'842[1]	**p-value**[2]
Scoring balloon*	98 (1.3%)	15 (0.6%)	55 (1.9%)	28 (1.5%)	<0.001
Rotablation*	71 (1.0%)	32 (1.2%)	16 (0.5%)	23 (1.2%)	0.014
Lithotripsy*	230 (3.1%)	81 (3.0%)	90 (3.1%)	59 (3.2%)	>0.9
Orbital atherectomy*	14 (0.2%)	0 (0%)	14 (0.5%)	0 (0%)	<0.001
Bifurcation	1'574 (21%)	447 (17%)	691 (23%)	436 (24%)	<0.001
Missing	35	0	35	0	
Bifurcation - specification					<0.001
1 stent	1'317 (84%)	401 (90%)	571 (83%)	345 (79%)	
2 stents	257 (16%)	46 (10%)	120 (17%)	91 (21%)	

[1] n (%)

[2] Kruskal-Wallis rank sum test; Pearson's Chi-squared test; Fisher's exact test

5.3.10 Major complications occuring in the CathLab in patients undergoing PCI

Table 20

Characteristic[1]	**Overall**, N = 7'530[2]	**University h.**, N = 2'680[2]	**Cantonal h.**, N = 3'008[2]	**Private h.**, N = 1'842[2]	**p-value**[3]
Major complications*	38 (0.5%)	26 (1.0%)	5 (0.2%)	7 (0.4%)	<0.001
Emergency open heart surgery*	6 (<0.1%)	3 (0.1%)	1 (<0.1%)	2 (0.1%)	0.5
Clinically overt stroke*	17 (0.2%)	15 (0.6%)	1 (<0.1%)	1 (<0.1%)	<0.001
Procedural death*	17 (0.2%)	10 (0.4%)	3 (0.1%)	4 (0.2%)	0.094
Missing	20	8	11	1	

[1] *: Multiple-choice variable

[2] n (%)

[3] Pearson's Chi-squared test; Fisher's exact test

Table 21

	ACS				CCS			
Characteristic[1]	**Overall**, N = 2'959[2]	**University h.**, N = 1'258[2]	**Cantonal h.**, N = 1'198[2]	**Private h.**, N = 503[2]	**Overall**, N = 3'260[2]	**University h.**, N = 999[2]	**Cantonal h.**, N = 1'223[2]	**Private h.**, N = 1'038[2]
Major complications*	21 (0.7%)	15 (1.2%)	3 (0.3%)	3 (0.6%)	9 (0.3%)	5 (0.5%)	2 (0.2%)	2 (0.2%)
Missing	5	3	2	0	8	3	4	1
Emergency open heart surgery*	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)	3 (<0.1%)	1 (0.1%)	1 (<0.1%)	1 (<0.1%)
Clinically overt stroke*	9 (0.3%)	8 (0.6%)	0 (0%)	1 (0.2%)	4 (0.1%)	3 (0.3%)	1 (<0.1%)	0 (0%)
Procedural death*	11 (0.4%)	6 (0.5%)	3 (0.3%)	2 (0.4%)	3 (<0.1%)	2 (0.2%)	0 (0%)	1 (<0.1%)

[1] *: Multiple-choice variable

[2] n (%)

5.3.11 Discharge medication after PCI

Table 22

Characteristic[1]	ACS				CCS			
	Overall, N = 2'959[2]	**University h.**, N = 1'258[2]	**Cantonal h.**, N = 1'198[2]	**Private h.**, N = 503[2]	**Overall**, N = 3'260[2]	**University h.**, N = 999[2]	**Cantonal h.**, N = 1'223[2]	**Private h.**, N = 1'038[2]
ASA*	2'860 (97%)	1'232 (98%)	1'147 (97%)	481 (96%)	3'036 (94%)	957 (96%)	1'113 (92%)	966 (94%)
Missing	15	4	10	1	24	7	12	5
P2Y12 inhibitor*	2'899 (98%)	1'238 (99%)	1'173 (99%)	488 (97%)	3'096 (96%)	968 (98%)	1'147 (95%)	981 (95%)
Clopidogrel	625 (22%)	200 (16%)	322 (27%)	103 (21%)	2'457 (79%)	719 (74%)	949 (83%)	789 (80%)
Prasugrel	673 (23%)	247 (20%)	369 (31%)	57 (12%)	257 (8.3%)	37 (3.8%)	129 (11%)	91 (9.3%)
Ticagrelor	1'526 (53%)	728 (59%)	476 (41%)	322 (66%)	312 (10%)	149 (15%)	67 (5.8%)	96 (9.8%)
Other	38 (1.3%)	29 (2.3%)	3 (0.3%)	6 (1.2%)	38 (1.2%)	33 (3.4%)	0 (0%)	5 (0.5%)
Unknown	37 (1.3%)	34 (2.7%)	3 (0.3%)	0 (0%)	32 (1.0%)	30 (3.1%)	2 (0.2%)	0 (0%)
N/OAC*	204 (6.9%)	78 (6.2%)	96 (8.1%)	30 (6.0%)	333 (10%)	73 (7.4%)	156 (13%)	104 (10%)
Statin*	2'018 (69%)	922 (74%)	842 (71%)	254 (51%)	2'023 (63%)	755 (76%)	760 (63%)	508 (49%)
Low-intensity	110 (5.5%)	31 (3.4%)	25 (3.0%)	54 (21%)	217 (11%)	20 (2.6%)	34 (4.5%)	163 (32%)
High-intensity	1'883 (93%)	891 (97%)	793 (94%)	199 (78%)	1'783 (88%)	735 (97%)	705 (93%)	343 (68%)
Unknown	25 (1.2%)	0 (0%)	24 (2.9%)	1 (0.4%)	23 (1.1%)	0 (0%)	21 (2.8%)	2 (0.4%)
Prescribed dual antiplatelet therapy duration								
<1 month	12 (0.5%)	3 (0.3%)	7 (0.7%)	2 (0.4%)	23 (0.9%)	1 (0.1%)	12 (1.3%)	10 (1.2%)
1 month	27 (1.0%)	10 (0.9%)	15 (1.4%)	2 (0.4%)	100 (3.8%)	29 (3.3%)	52 (5.6%)	19 (2.2%)
3 months	24 (0.9%)	3 (0.3%)	13 (1.3%)	8 (1.8%)	115 (4.3%)	4 (0.5%)	69 (7.5%)	42 (4.9%)
6 months	263 (10.0%)	77 (6.7%)	136 (13%)	50 (11%)	1'943 (73%)	627 (71%)	620 (67%)	696 (82%)
12 months	2'219 (84%)	1'028 (90%)	828 (80%)	363 (81%)	412 (15%)	196 (22%)	132 (14%)	84 (9.8%)
>12 months	49 (1.9%)	13 (1.1%)	15 (1.4%)	21 (4.7%)	20 (0.8%)	3 (0.3%)	15 (1.6%)	2 (0.2%)
Unknown	38 (1.4%)	13 (1.1%)	25 (2.4%)	0 (0%)	47 (1.8%)	23 (2.6%)	24 (2.6%)	0 (0%)

[1] *: Multiple-choice variable

[2] n (%)

Characteristic[1]	ACS				CCS			
	Overall, N = 2'959[2]	**University h.**, N = 1'258[2]	**Cantonal h.**, N = 1'198[2]	**Private h.**, N = 503[2]	**Overall**, N = 3'260[2]	**University h.**, N = 999[2]	**Cantonal h.**, N = 1'223[2]	**Private h.**, N = 1'038[2]
Prescribed triple antithrombotic therapy duration								
<1 week	118 (61%)	59 (76%)	47 (51%)	12 (52%)	162 (60%)	43 (63%)	80 (58%)	39 (60%)
1 month	55 (28%)	9 (12%)	39 (42%)	7 (30%)	69 (26%)	6 (8.8%)	46 (34%)	17 (26%)
3 months	3 (1.5%)	0 (0%)	2 (2.2%)	1 (4.3%)	5 (1.9%)	2 (2.9%)	2 (1.5%)	1 (1.5%)
6 months	4 (2.1%)	0 (0%)	1 (1.1%)	3 (13%)	16 (5.9%)	1 (1.5%)	8 (5.8%)	7 (11%)
Unknown	14 (7.2%)	10 (13%)	4 (4.3%)	0 (0%)	18 (6.7%)	16 (24%)	1 (0.7%)	1 (1.5%)

[1] *: Multiple-choice variable

[2] n (%)

Note

The option 'Unknown' is not included in the SwissCaRe form version 1. This answer option was generated during post-processing of the data in cases where the question remains unanswered.

Note that missing values are only displayed for the first multiple-choice variable 'ASA'; they are the same for all other multiple-choice variables.

5.4 PART III - Quality indicators

5.4.1 Use of non-invasive functional or anatomical imaging tests in patients with suspected (progression of) CAD

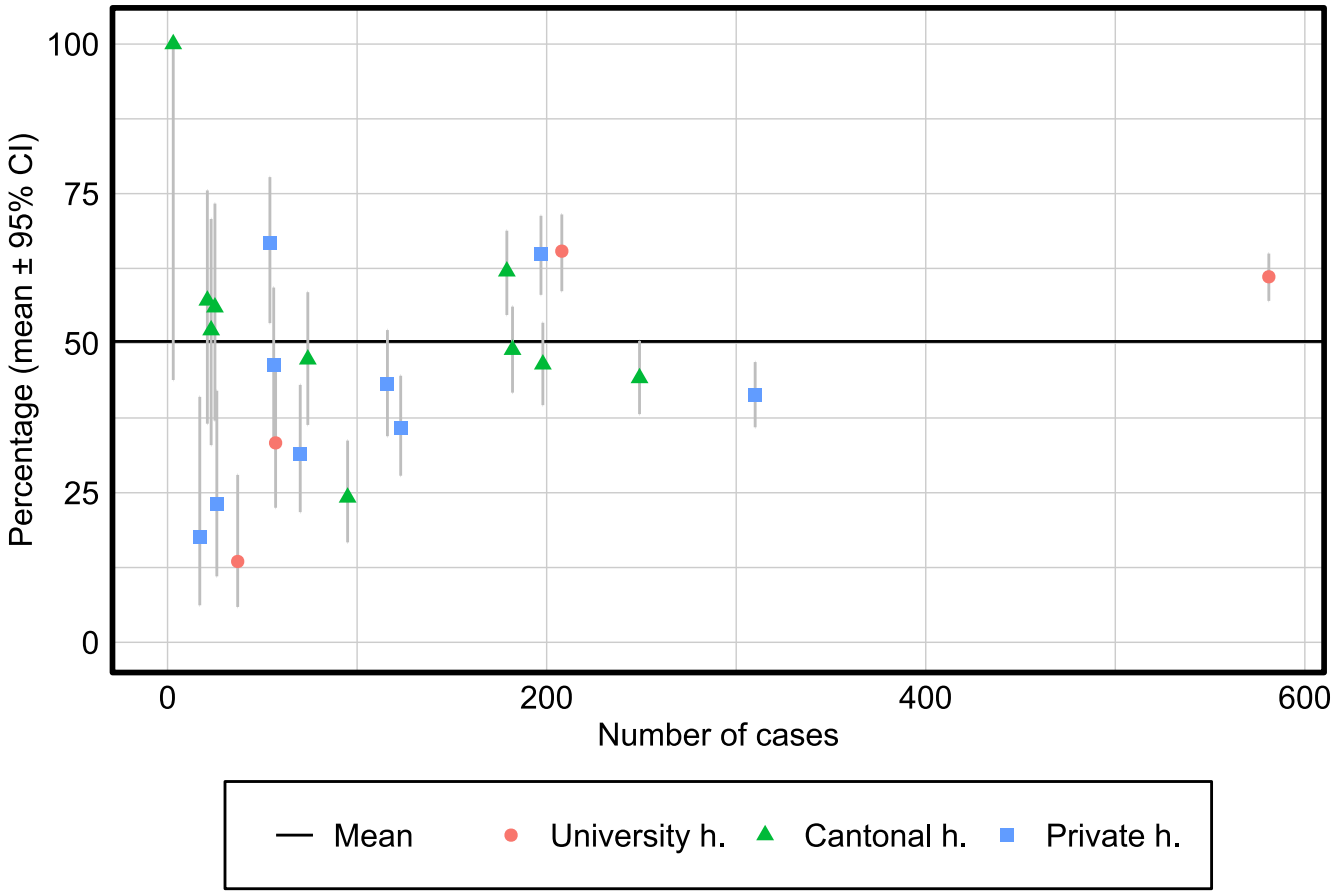

Figure 7: Frequency of non-invasive tests indicative of CAD in patients undergoing PCI

5.4.2 Invasive physiology in absence of symptoms and diagnostic non-invasive stress test in patients with suspected (progression of) CAD

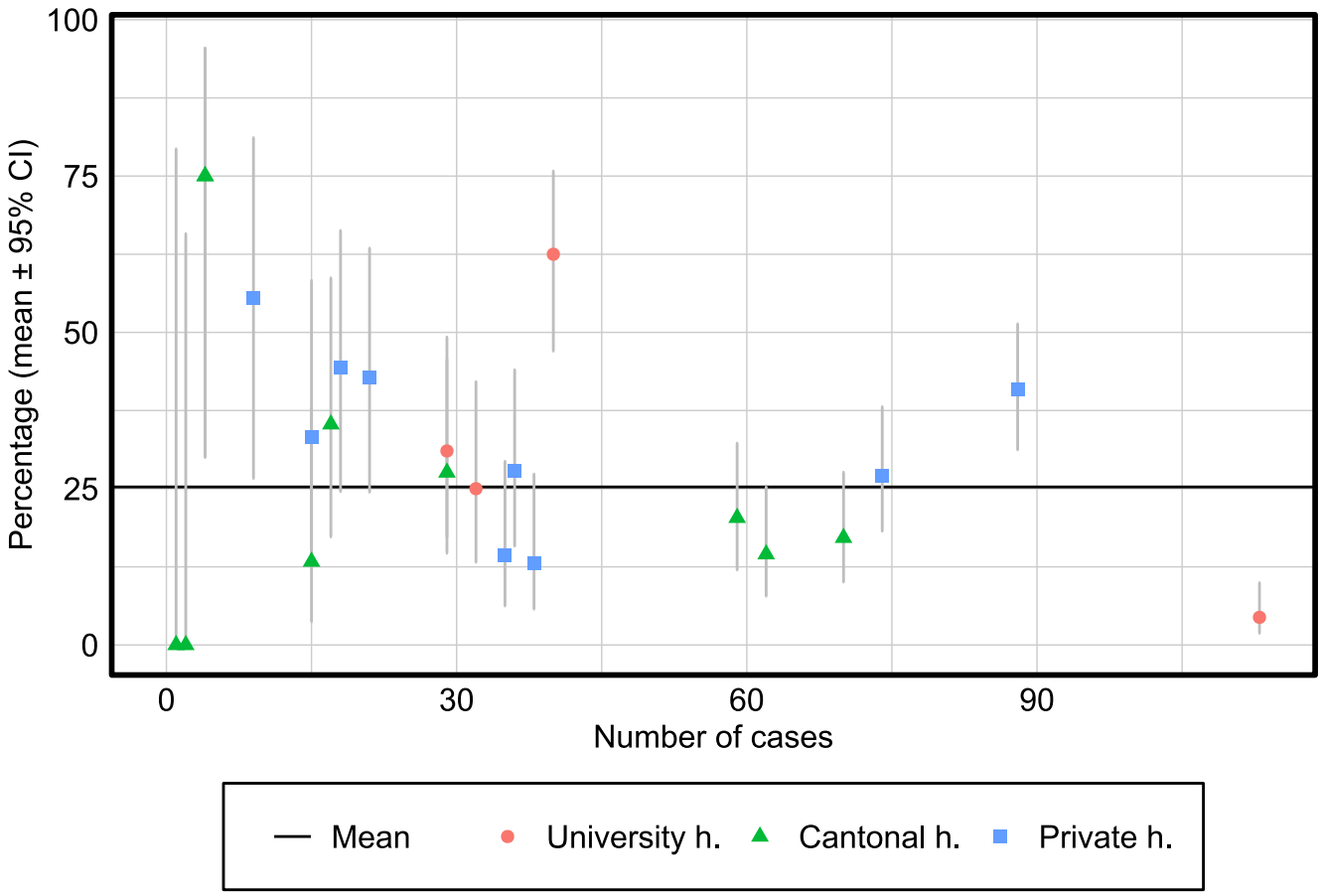

Figure 8: Frequency of invasive physiology in asymptomatic patients undergoing PCI without diagnostic stress test

5.4.3 Radial access

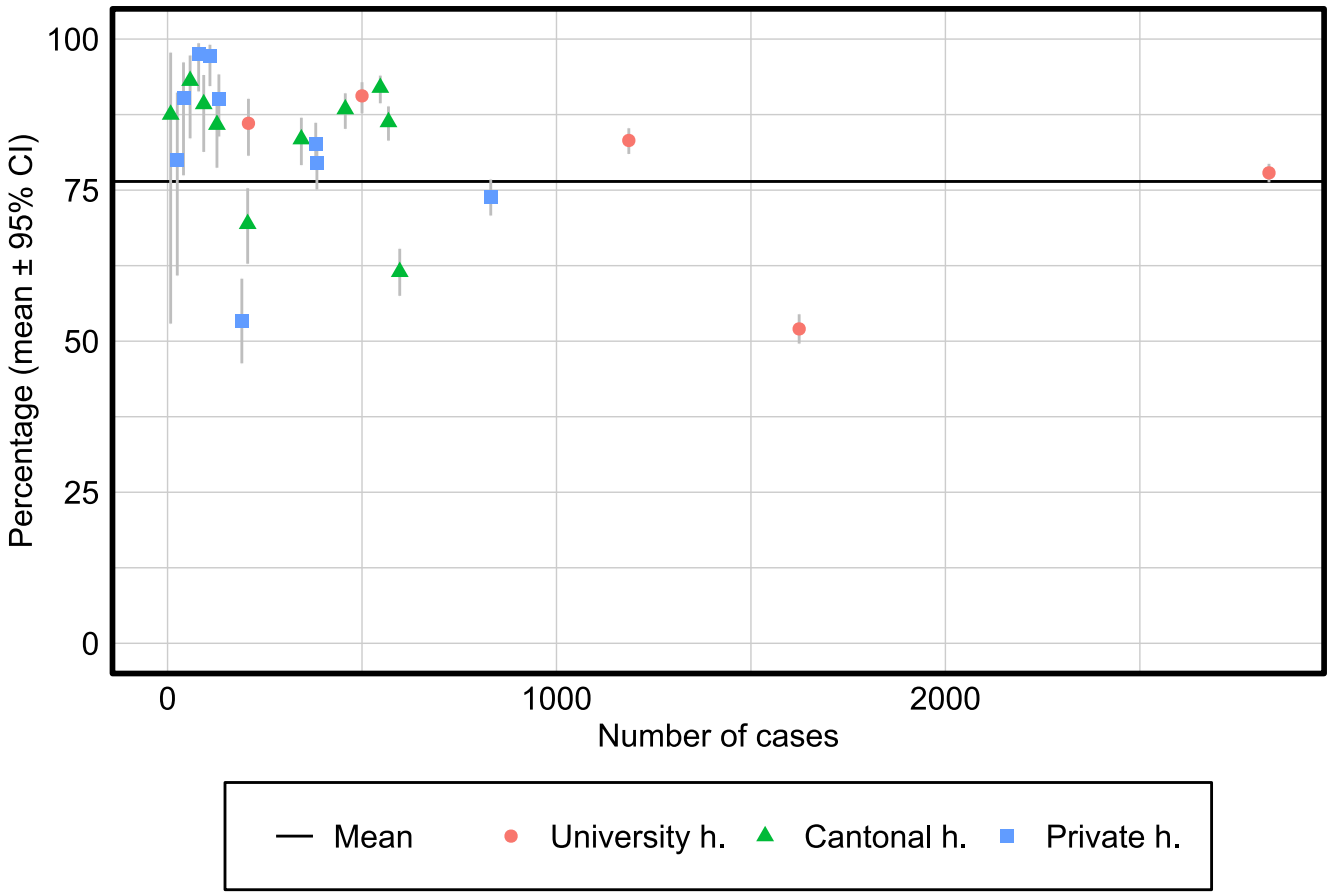

Figure 9: Frequency of radial access in patients undergoing diagnostic CA

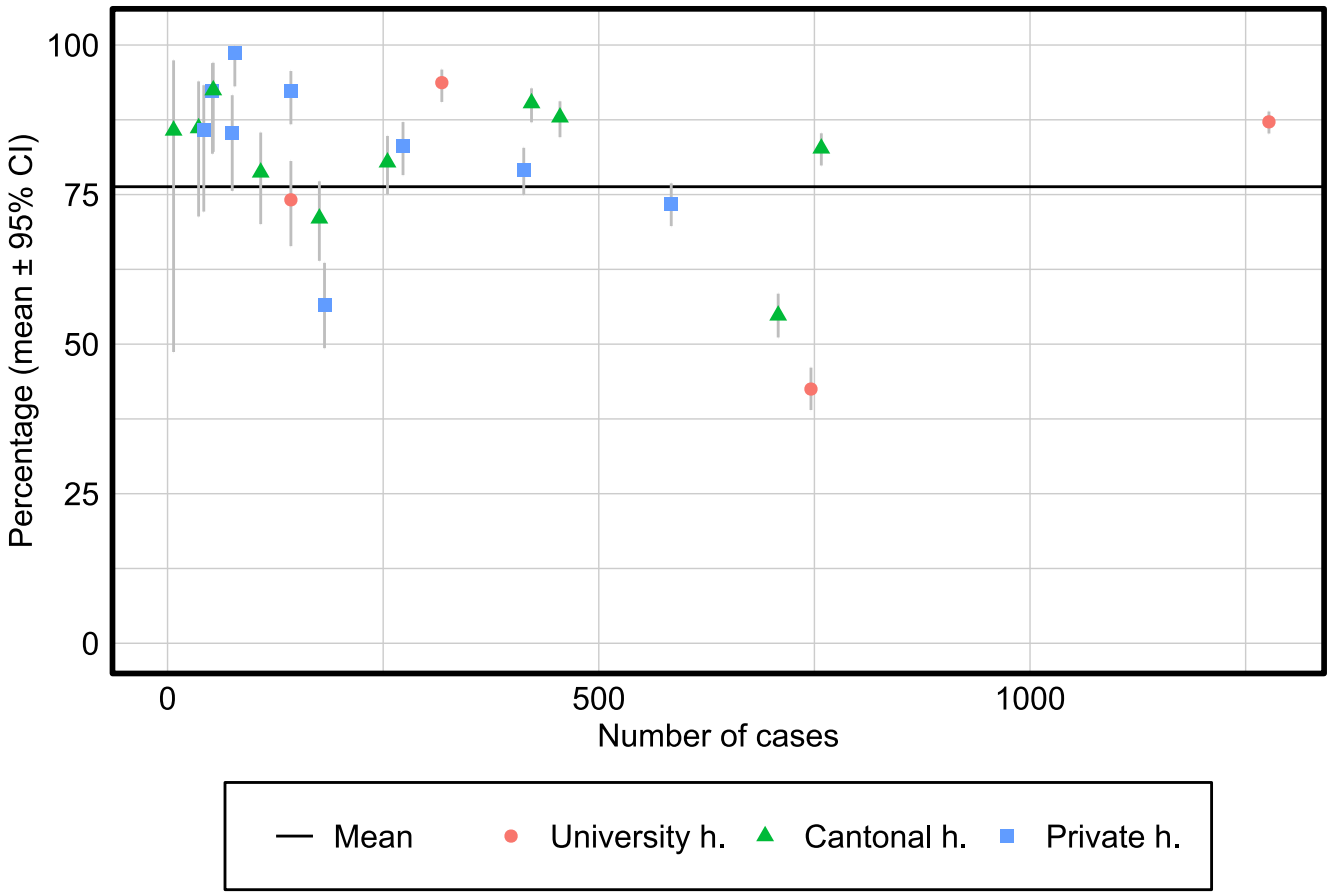

Figure 10: Frequency of radial access in patients undergoing PCI

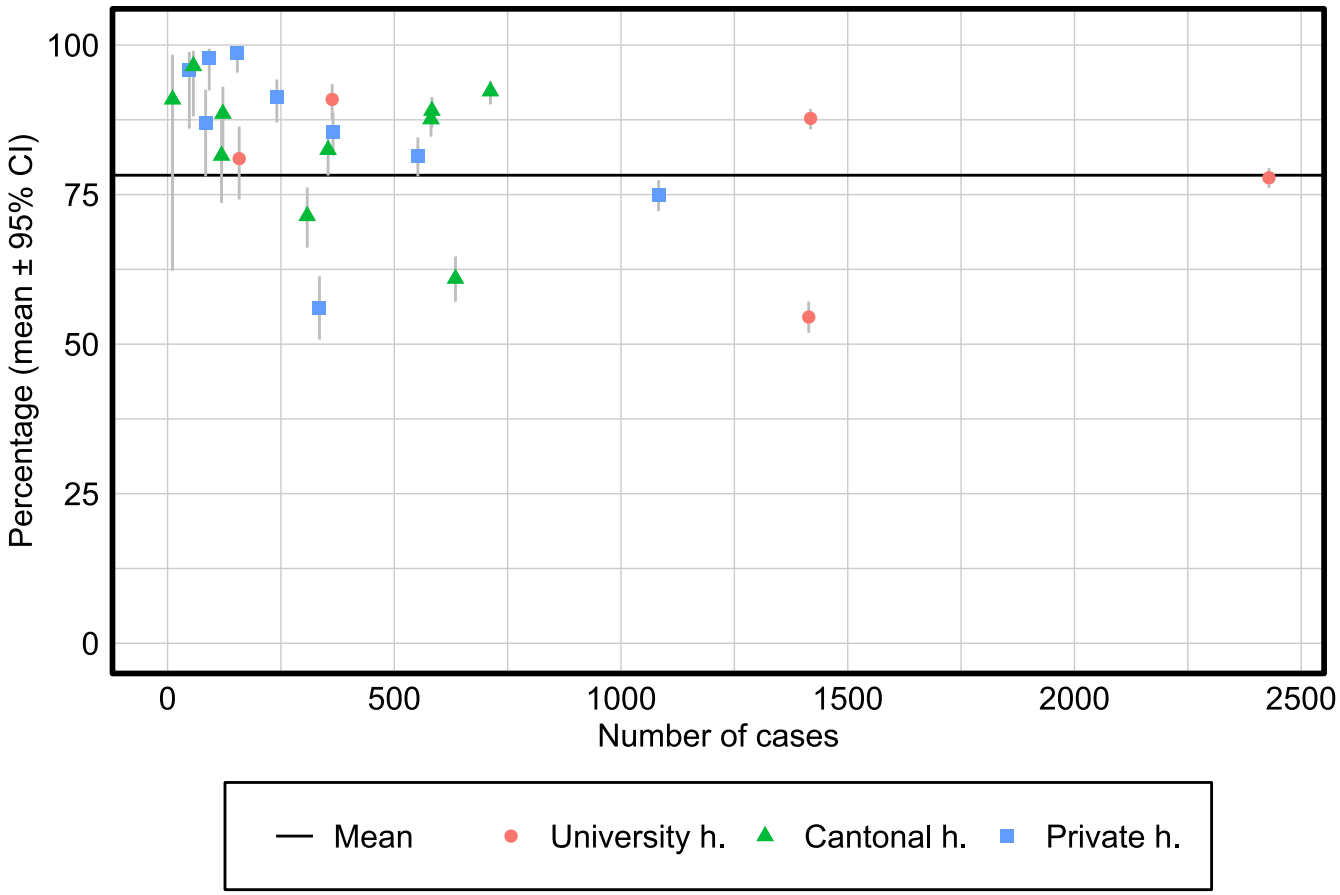

Figure 11: Frequency of radial access in CCS patients

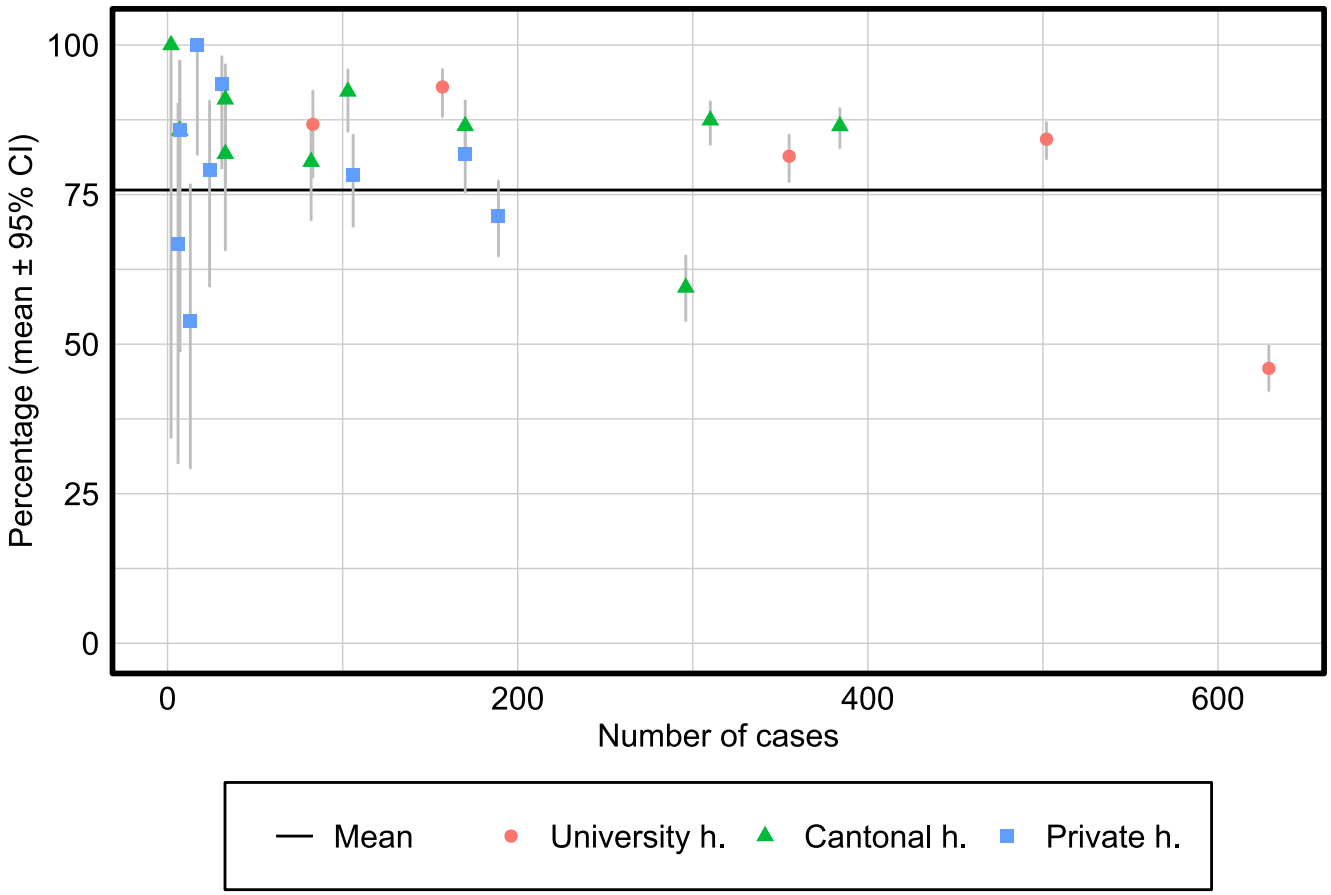

Figure 12: Frequency of radial access in unstable Angina pectoris and NSTEMI patients

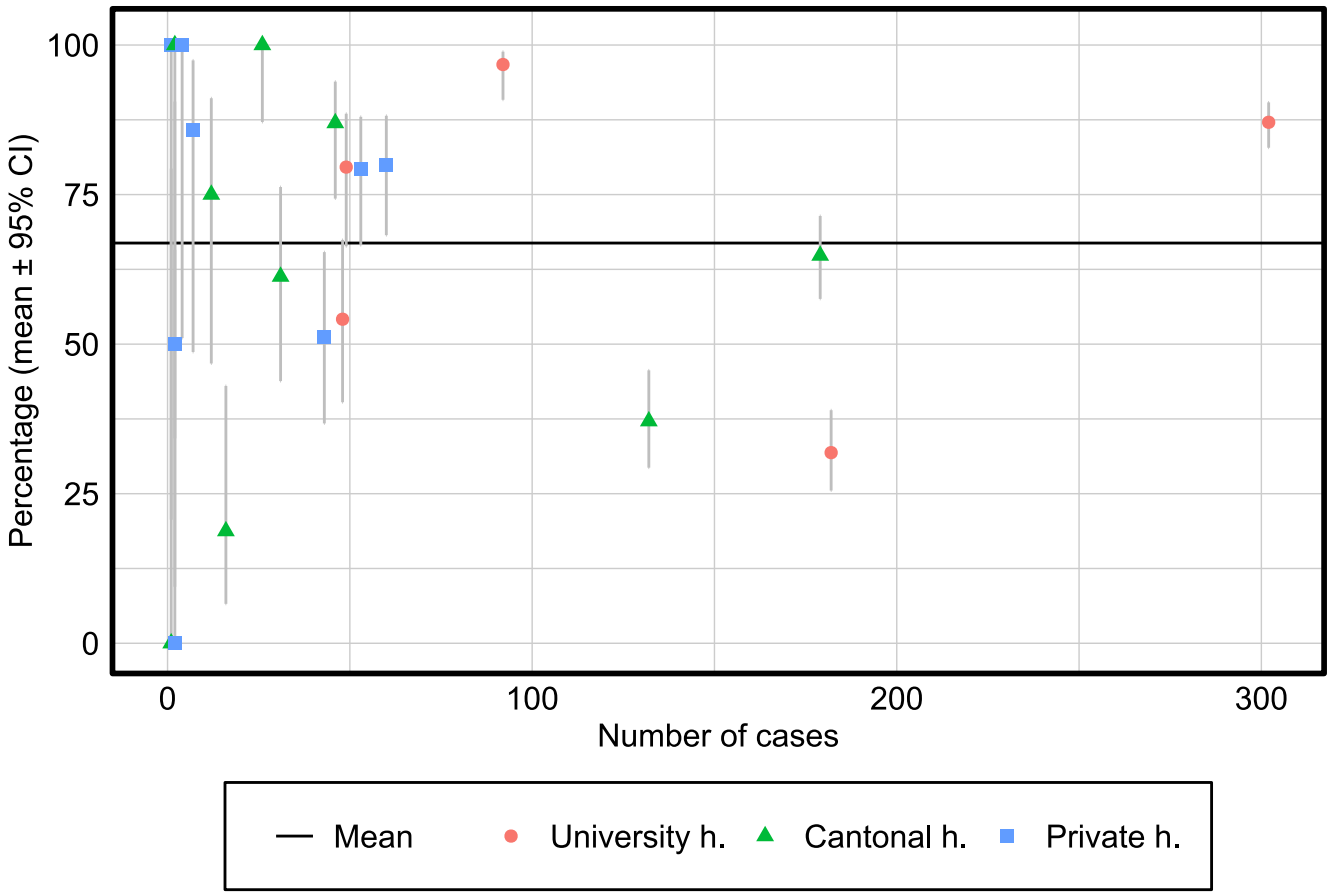

Figure 13: Frequency of radial access in STEMI patients

5.4.4 Referral times

Caution

This quality indicators are assessed for the procedure type ‘Coronary angiography and PCI’. If a center reports only procedures of type ‘Coronary angiography only’, it will not appear on the graph.

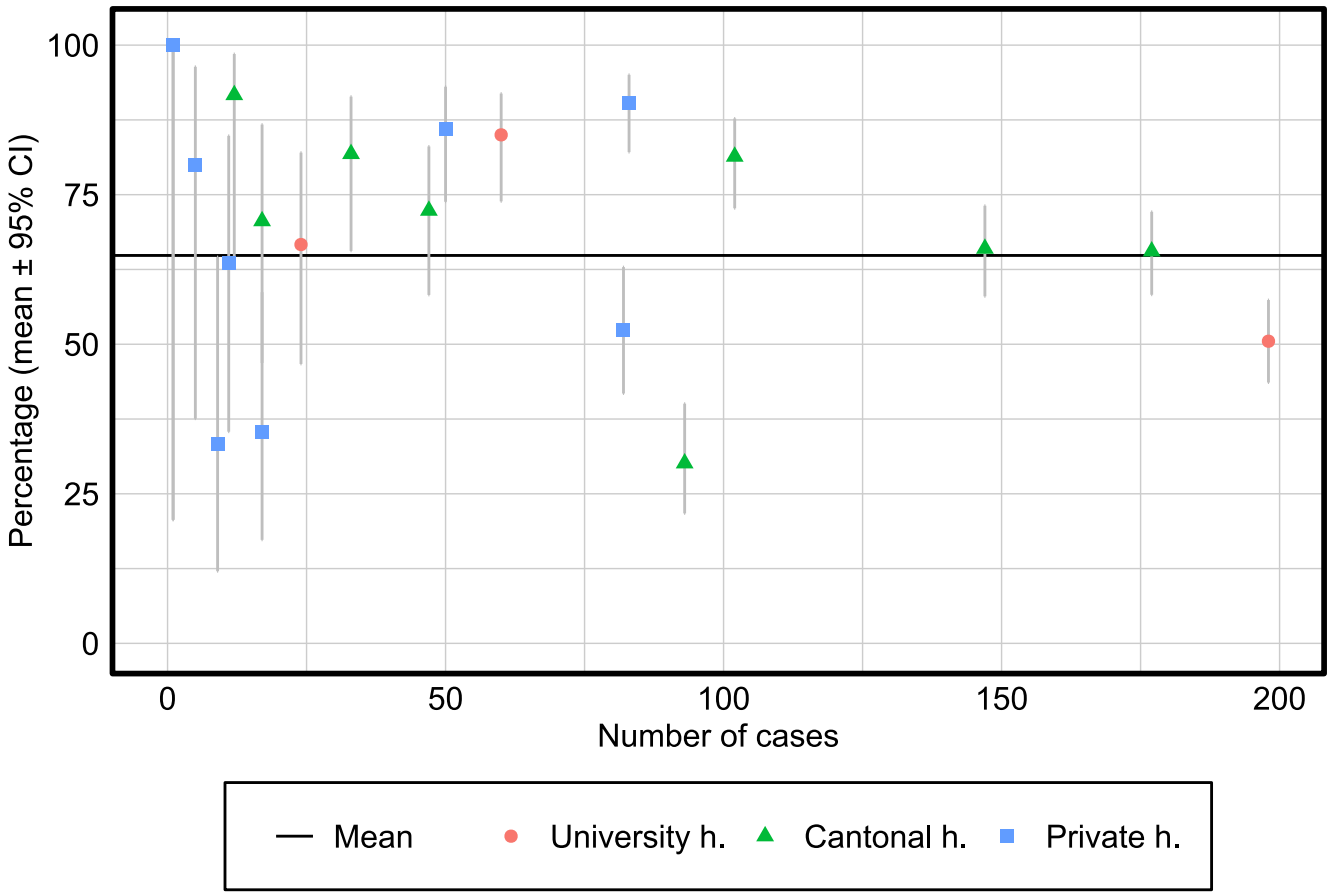

Figure 14: Frequency of early invasive strategy (<24h) in NSTEMI patients undergoing PCI

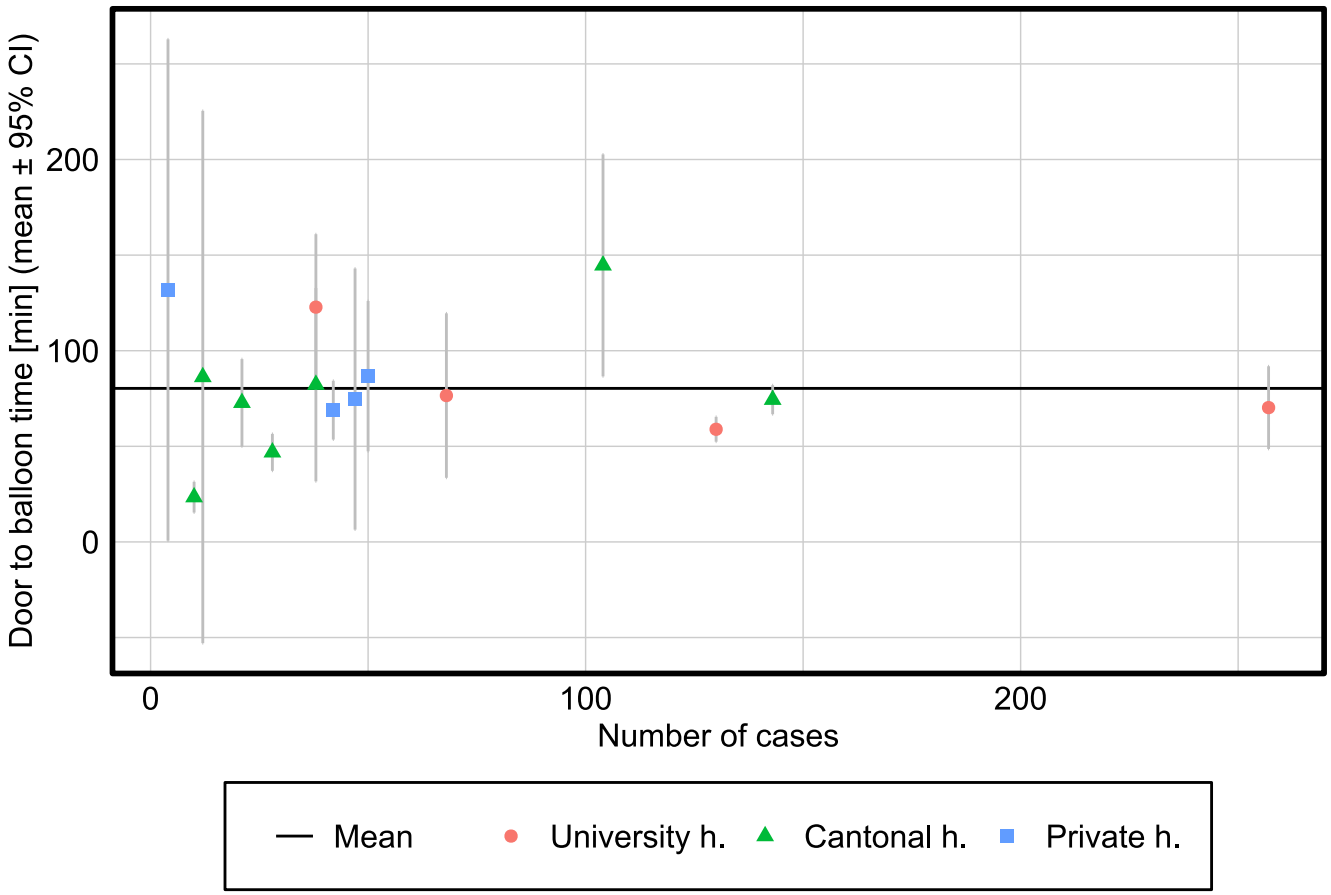

Figure 15: Mean door-to-balloon time in STEMI patients undergoing PCI

Caution

The figure above is a graphical representation of t-tests, examining whether the mean of each center significantly differs from the overall mean. The error bars represent the 95% confidence interval (CI) of the mean, assuming a normal distribution (which is one of the underlying assumptions for t-tests). Although the door-to-balloon time is unlikely to adhere to a normal distribution, t-tests are relatively robust against deviations from these assumptions.

Significant deviations from the mean are observed in centers where the error bars do not intersect the horizontal line representing the overall mean.

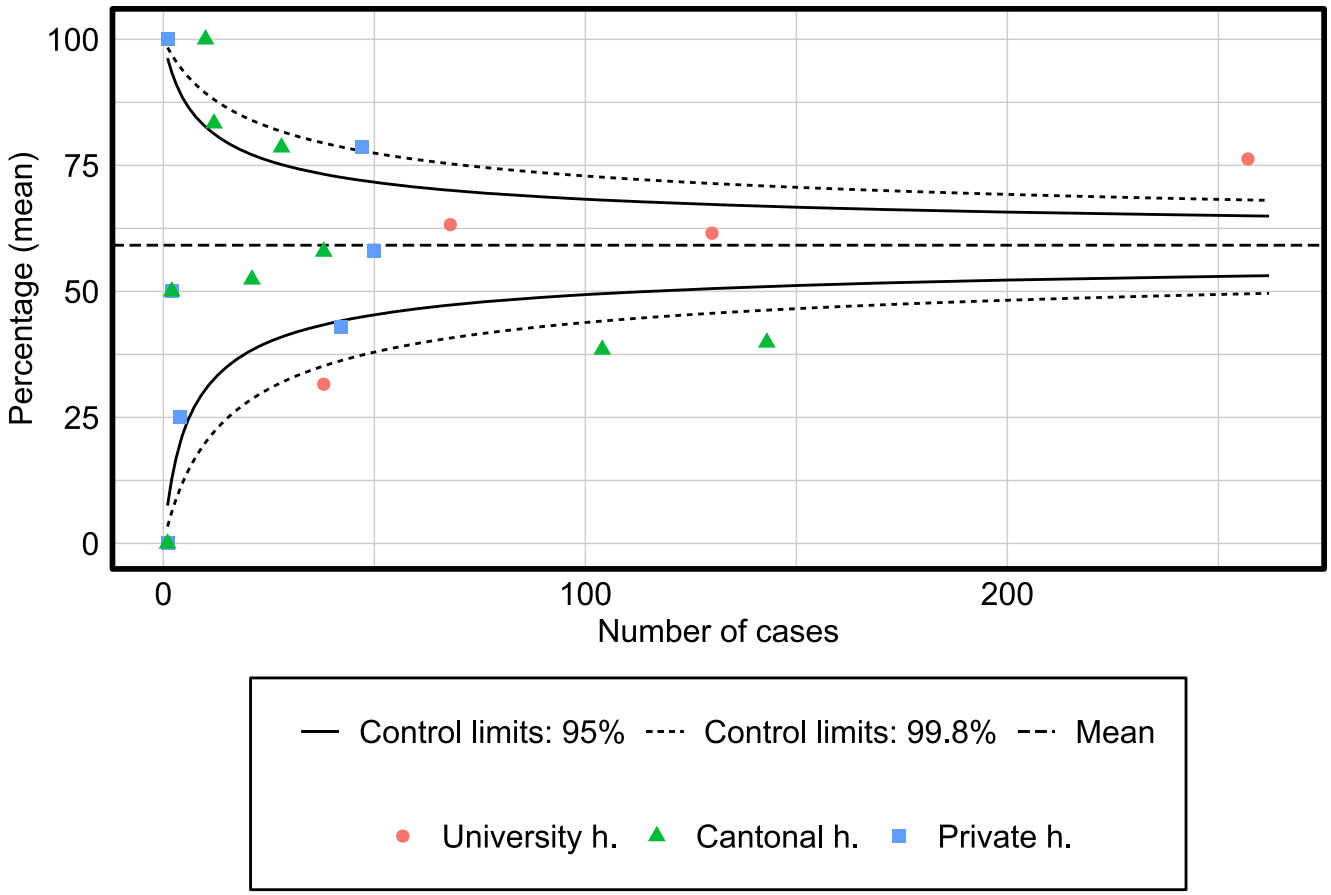

Figure 16: Frequency of door-to-balloon time below 60 minutes in STEMI patients undergoing PCI

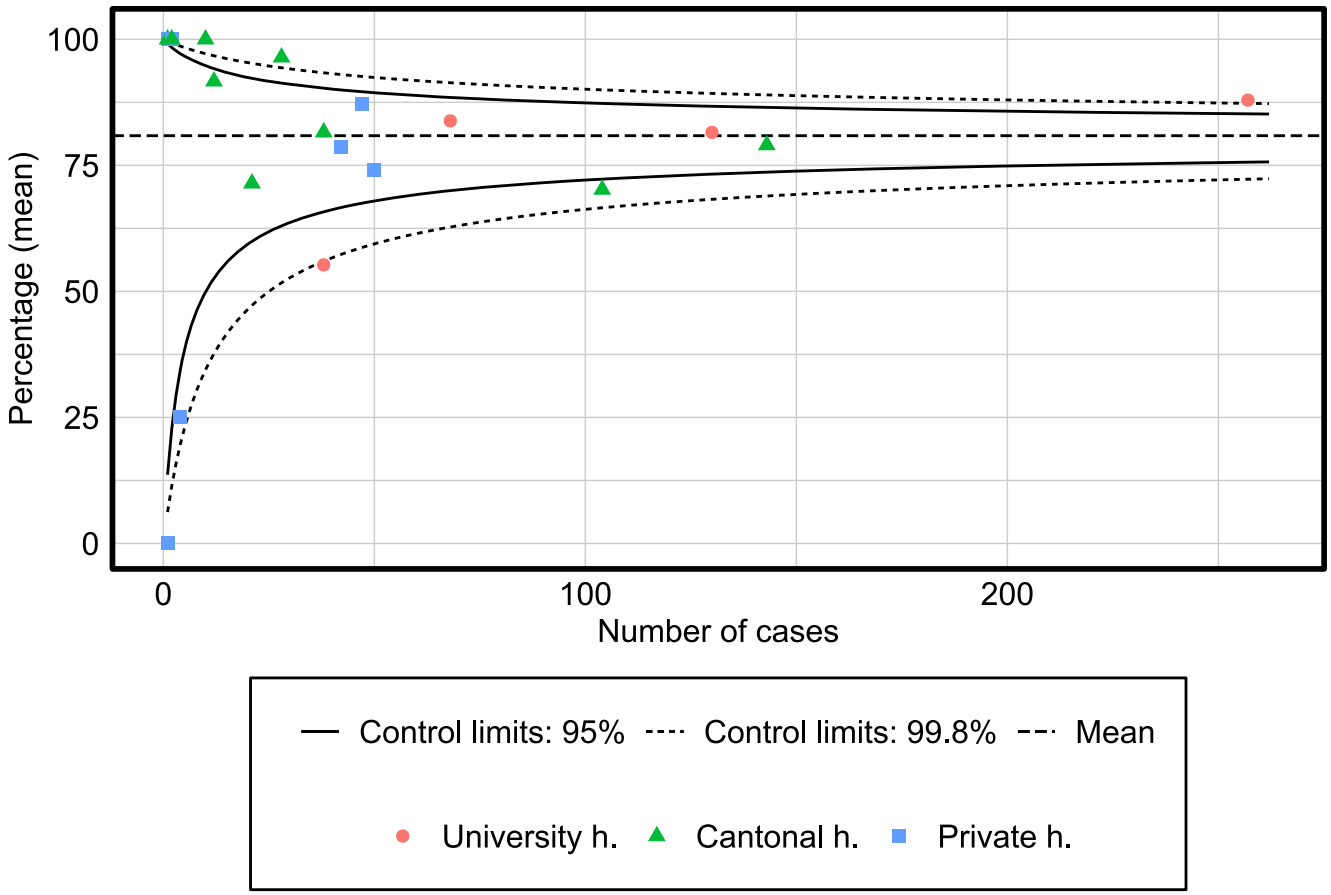

Figure 17: Frequency of door-to-balloon time below 90 minutes in STEMI patients undergoing PCI

5.4.5 Major complications occuring in the CathLab

Caution

Major complications are rare events. Particularly for centers with low sample size, a single major complication can significantly impact whether a data point falls within or outside of the control limits.

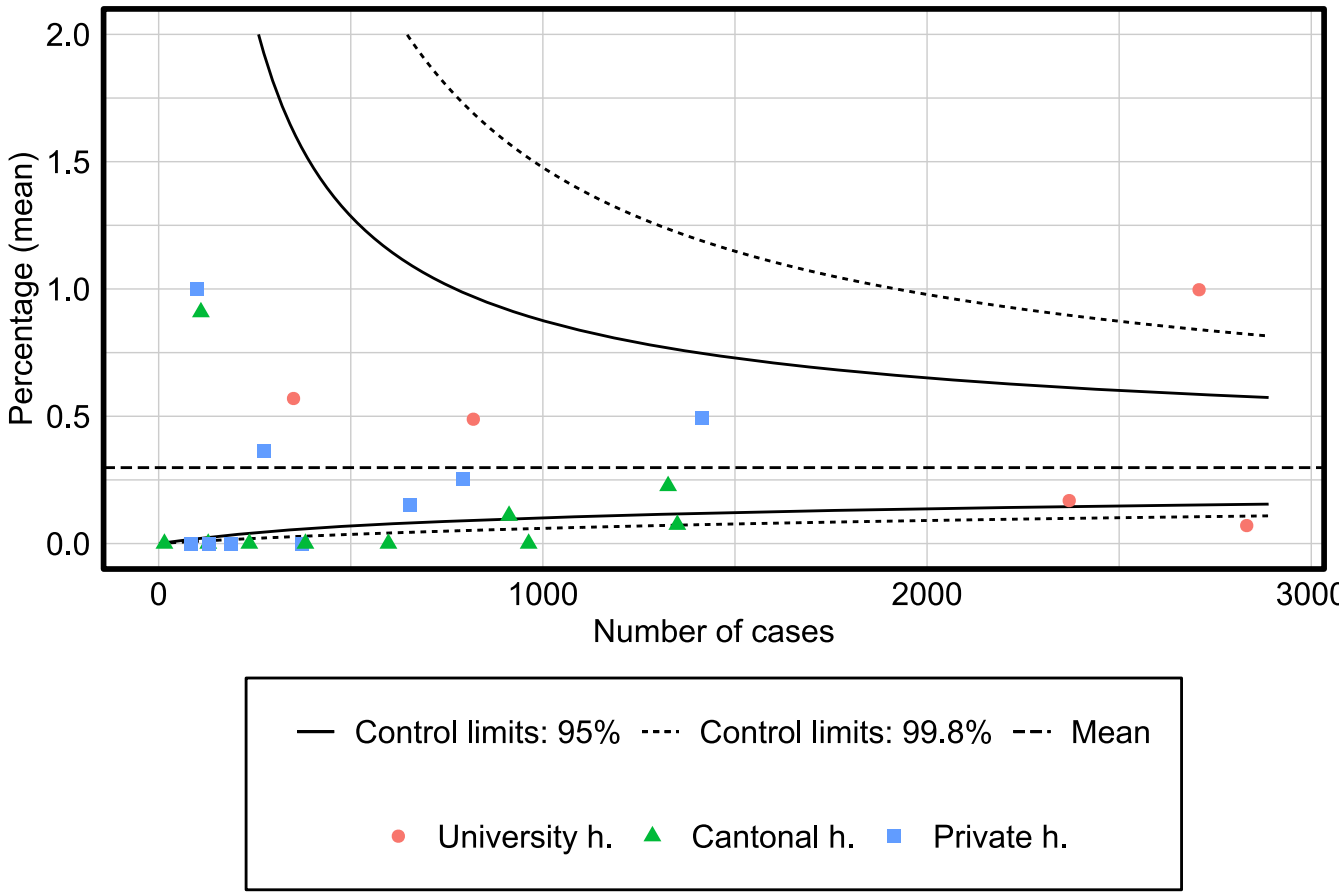

Figure 18: Frequency of major complications - overall

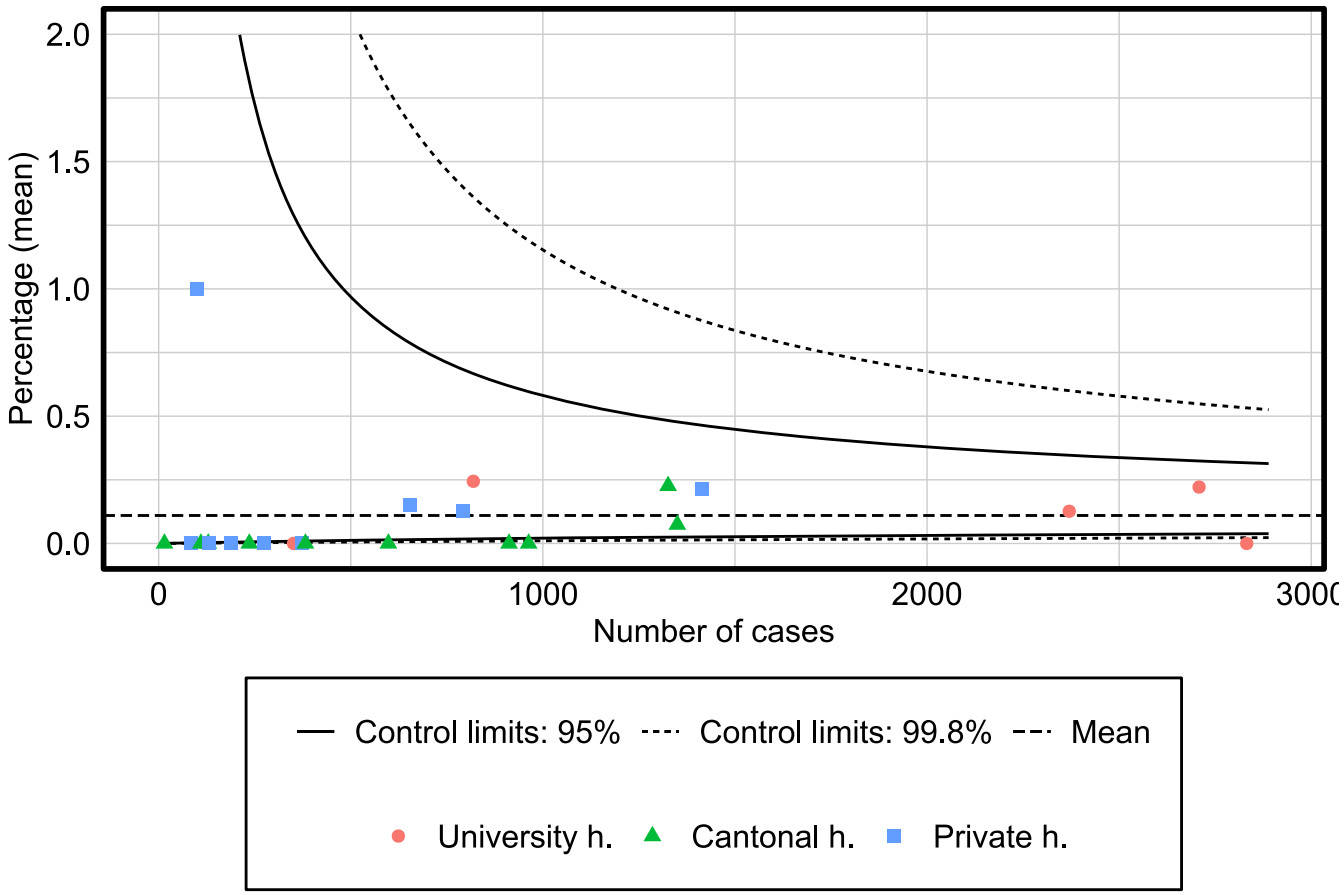

Figure 19: Frequency of major complication procedural death

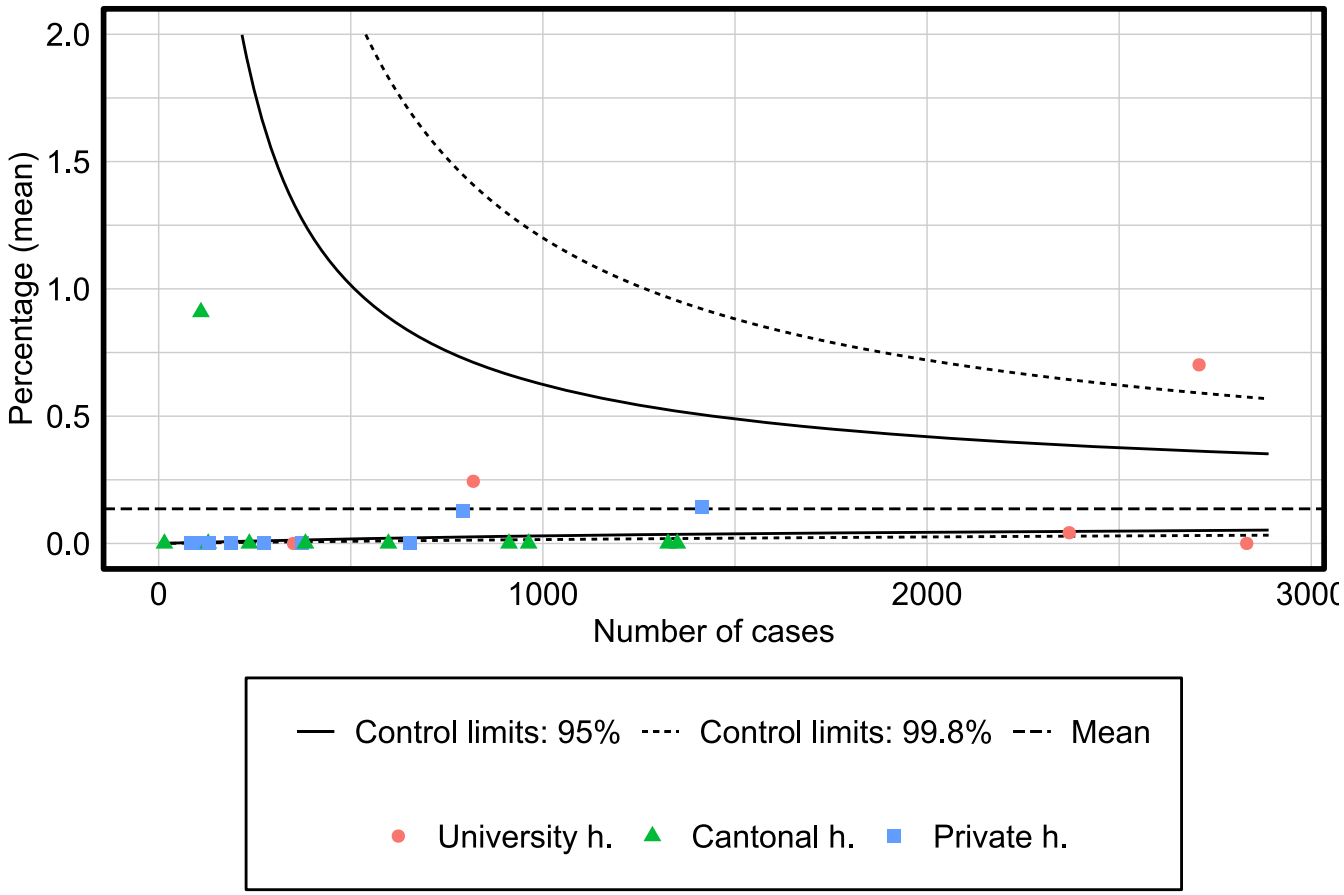

Figure 20: Frequency of major complication clinically overt stroke

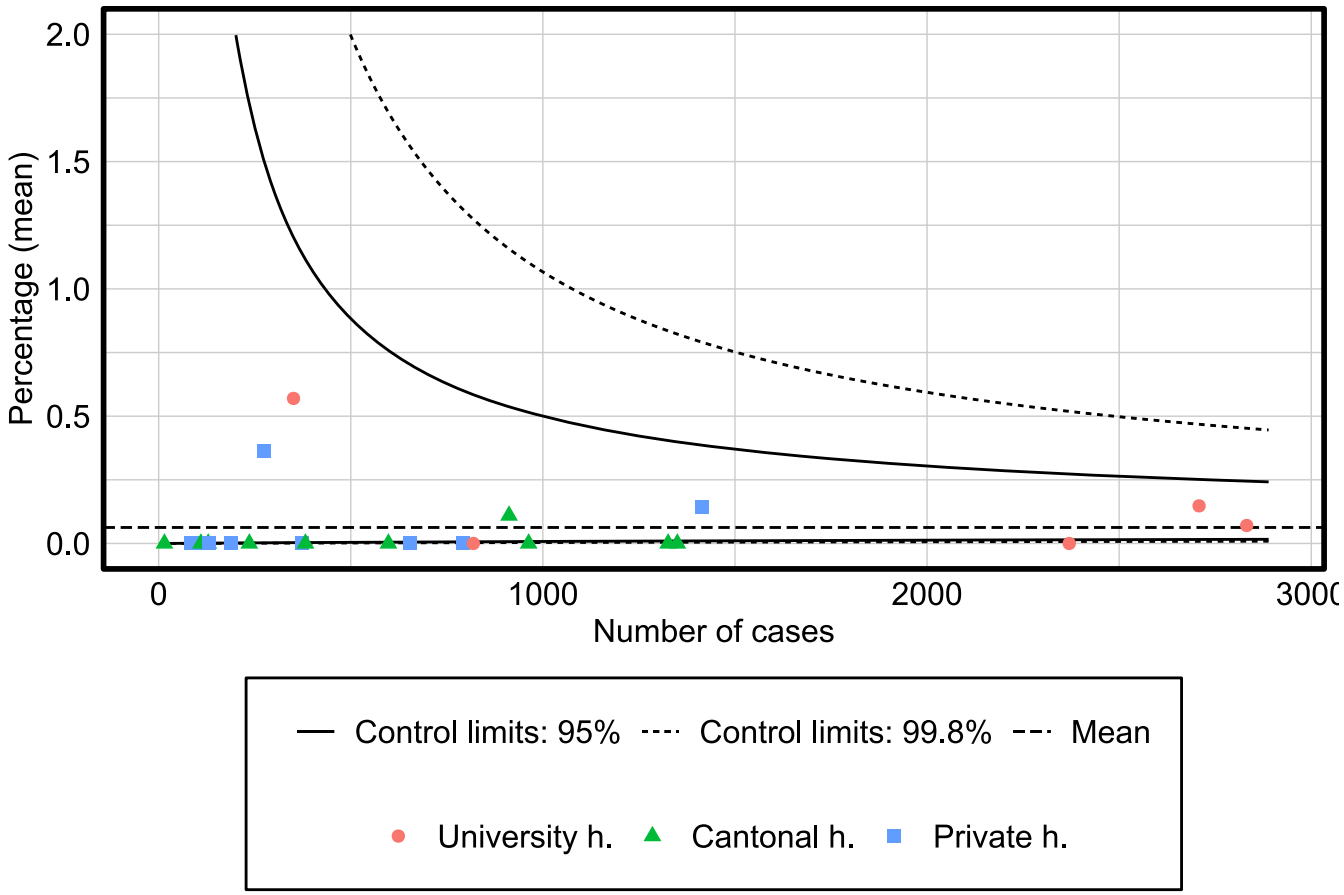

Figure 21: Frequency of major complication emergency open heart surgery

Note

The major complications in different indications (risk stratification) have not been determined.

5.4.6 Use of potent P2Y12 inhibitors in combination with N/OAC

Caution

This quality indicator is assessed for the procedure type ‘Coronary angiography and PCI’. If a center reports only procedures of type ‘Coronary angiography only’, it will not appear on the graph.

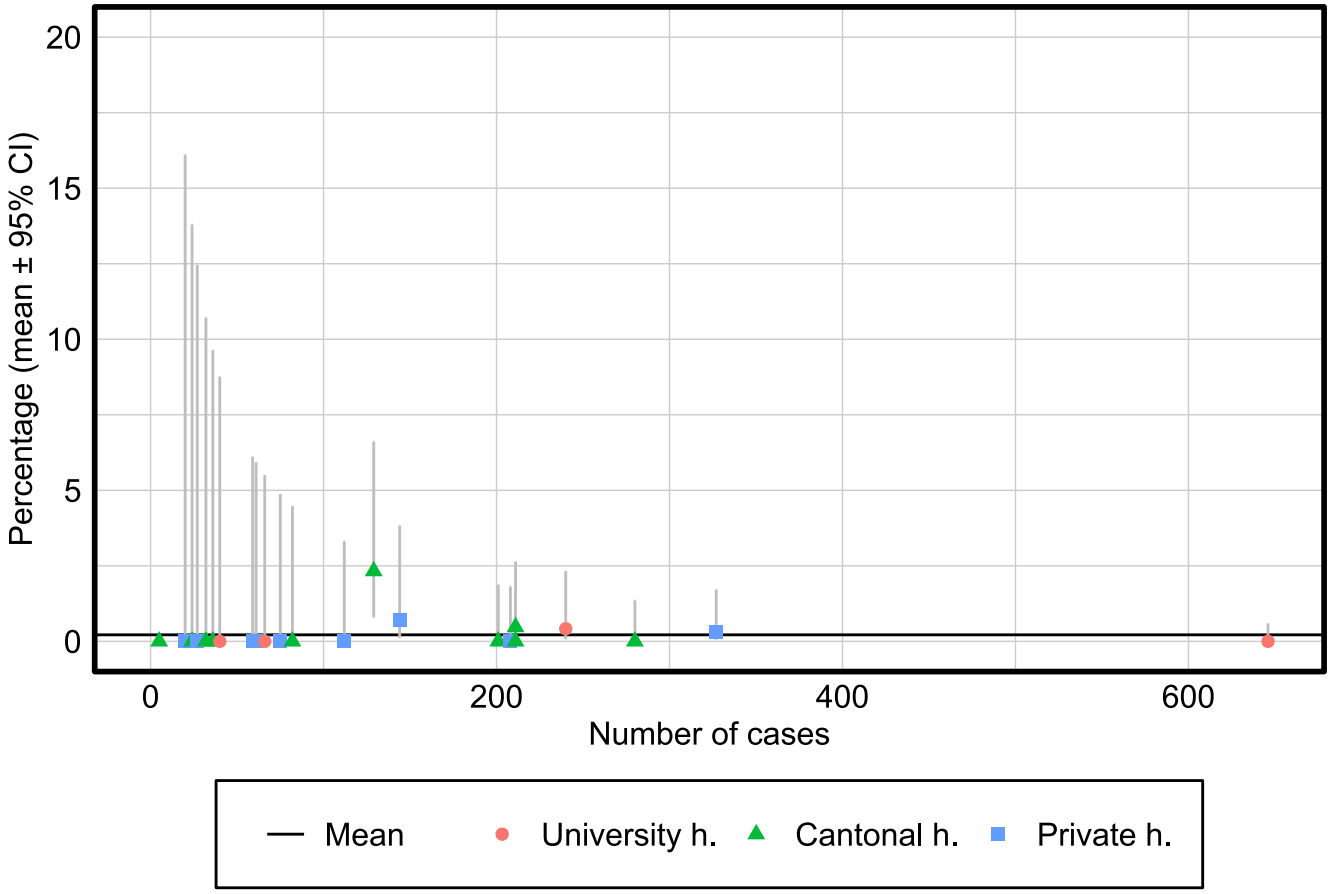

Figure 22: Frequency of potent P2Y12 inhibitor with N/OAC use in CCS patients

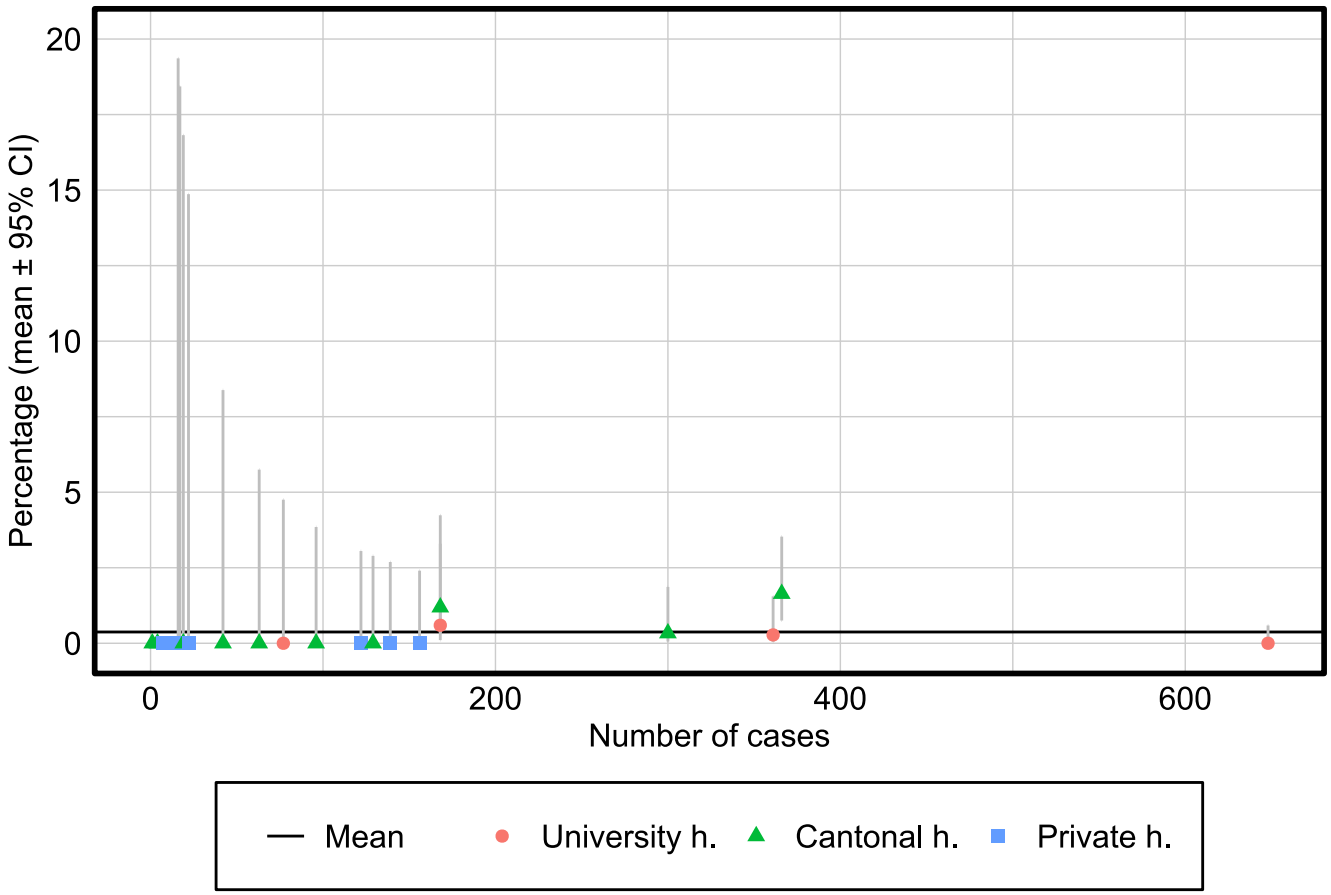

Figure 23: Frequency of potent P2Y12 inhibitor with N/OAC use in ACS