

SwissCaRe



REGISTRY REPORT
YEAR 2025



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On behalf of the SwissCaRe Steering Committee

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1 Preface

Dear SwissCaRe participant, dear quality responsible, dear reader

Reporting on quality in indication, procedure and outcome is a mandate that is at the core of the Swiss Society of Cardiology. Following its inception, the SwissCaRe registry has grown exponentially and during its 3rd year, more than 51'000 interventions were documented. This annual report thus covers ~91% of the expected procedural activity in Switzerland. With that, SwissCaRe is the top leading Swiss registry for medical interventions.

Swiss Cardiology is not shy to compare itself with other European countries in benchmark analyses and therefore decided to join the EuroHeart initiative in 2024 and the respective reports are available in public (www.escardio.org/euroheart).

When reading the 2025 report, please consider that several sites started submitting quality data during the year 2025 and not necessarily at the beginning of 2025, thus numbers may not reflect a complete year for all hospitals. We are pleased that the Federal Office of Statistics has approved our request to link SwissCaRe with the national mortality statistics for patients who agreed to provide their identifying information. Unfortunately, the provision of this data by the federal office of statistics takes much time so that this report does not yet include mortality.

The SwissCaRe report includes two reports

1. The **main report** released in public presenting the overall cohort and comparing hospital categories (i.e. University, Public non-university, and Private)

2. The **hospital reports** provided to each participating site includes a detailed comparison among i) hospitals of the same category and ii) to the overall cohort independent of hospital category.

We welcome any feedback (directed to luisa.schaefer@swisscardio.ch) on the two reports with the aim to improving SwissCaRe on a yearly basis. Any feedback will be discussed in the steering committee. We thank all participating sites for their contribution to SwissCaRe with the overarching aim to improve the quality in coronary interventions in Switzerland.

While SwissCare is primarily thought to serve as a transparent quality reporting instrument, the Steering committee decided to start using data for scientific contributions this year. Requests for analyses may be submitted to the publication committee.

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 analyses were not based on prospective data collection and did not include associated patient 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 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 based on a general assembly voting. The SwissCaRe quality registry for CA & PCI was initiated in 2022. In its first reporting year 2023, SwissCaRe included an est. 30% and in the second year ~70% of Swiss CA & PCI procedures. In the third edition reporting year 2025, SwissCaRe increases its representation to approximately 91% of the entire procedures in Switzerland.

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 (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, public non-university, 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



Chair: Prof. Lorenz Räber, MD, PhD

Quality responsible Swiss Society of Cardiology

Vice-President Swiss Society of Cardiology

Board Swiss Working Group Interventional Cardiology



Dr. Béatrice Veragut Davies, MD

President Swiss Society of Cardiology



Prof. Oliver Gämperli, MD

President Swiss Working Group Interventional Cardiology



Prof. Raban Jeger, MD

Board Swiss Working Group Interventional Cardiology



Prof. Marco Valgimigli, MD, PhD

Delegate Swiss Working Group Interventional Cardiology



Prof. Lars Englberger, MD

Board Swiss Society for Heart and Thoracic Vascular Surgery

3 Sponsorship

The professional set up of large registries requires financial resources. We are grateful for the support of below mentioned sponsors, who kindly supported the SwissCaRe Registry. The sponsors have no influence on the registry design, conduct or analysis.

Major Sponsors



Minor Sponsors



Past 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 (FSO), 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 is needed). A standardized consent form for CA/PCI that includes the registry consent is available via the Swiss Heart Foundation, accompanying patient information are available in the login area or from the SSC. 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 acquisition (future reports)

To make the registry linkable to administrative data, such as cause-of-death statistics, identifying information is required (last name, first name, and date of birth). This identifying information is securely sent to the central compensation office (CCO), where it is matched to the social security number (SSN). At the FSO, the SSN with the registry-data is then linked to the cause-of-death registry and population data to

determine the status of the patients.

The FSO prepares the cause-of-death and population data by the end of the following year for data from the previous year. Therefore, the linkage process can only be initiated after a lag of minimum 12 months. Once established, the process will be repeated annually. The status of patients is not allowed to be fed back into the registry..

Monitoring

Central monitoring is conducted on a quarterly basis by SwissRDL for all entered procedures. On-site monitoring has commenced in 2024 and all participating sites are monitored within the first two years of joining SwissCaRe. Thereafter, monitoring follows a risk-based approach. Monitoring focuses primarily 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 same clinic will be documented under the same hospital patient ID. Patients undergoing treatment at a second hospital will be recorded as new patients (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 (SSC) and Camille Blochet (SwissRDL)

Data analysis and reporting: Andreas Boss (SwissRDL)

5 List of abbreviations

ACS acute coronary syndrome	PCI percutaneous coronary intervention
API application programming interface	Private h private hospital
ASA acetylsalicylic acid	Public n-u h public non-university hospital
CA coronary angiography	QI quality indicator
CABG coronary artery bypass grafting	SOP Standard Operating Procedure
CAD coronary artery disease	SSC Swiss Society of Cardiology
CathLab catheterization laboratory	SD standard deviation
CCO central compensation office	SSN social security number
CCS chronic coronary syndrome	staged PCI percutaneous coronary intervention at a later date separate from the performance of the initial PCI
CTA cardiac computed tomography angiography	STEMI ST-segment elevation myocardial infarction
CI confidence interval	TTE transthoracic echocardiography
CIS clinic information system	University h university hospital
CTO chronic total occlusion	
cvRF cardiovascular risk factors	
DCB drug-coated balloon	
door-to-balloon time time between hospitalization (door) and revascularization (balloon)	
ECG electrocardiogram	
ECMO extracorporeal membrane oxygenation	
eCRF electronic case report form	
ESC European Society of Cardiology	
FFR fractional flow reserve	
FSO Federal Statistical Office	
HTX heart transplantation, heart exchange	
IFR/RRF instantaneous wave-free ratio/resting full-cycle ratio	
IQR interquartile range	
ISPM Institute of Social and Preventive Medicine	
IVUS intravascular ultrasound	
KVG Krankenversicherungsgesetz	
KVV Krankenversicherungsverordnung	
LVEF left ventricular ejection fraction	
MRI magnetic resonance imaging	
N/OAC new oral anticoagulants/oral anticoagulants	
NSTEMI non-ST-segment elevation myocardial infarction	
OCT optical coherence tomography	

6 Results

Caution

Form versions V1 and V2.0 For the SwissCaRe yearly reports for 2025, both currently active form versions — version 1 and version 2.0 — were considered. Remarks are provided wherever the differences between the form versions may impact the results presented in this report.

Pre-processing After recoding the data from form version V1, the data from both form versions were appended. Thereafter, obvious and likely duplicates, as well as apparent records from test patients, were excluded from further analysis.

Inclusion of records For this report, form entries were considered if they met the following criteria:

1. The procedure occurred in 2025, and
2. the type of intervention was specified.

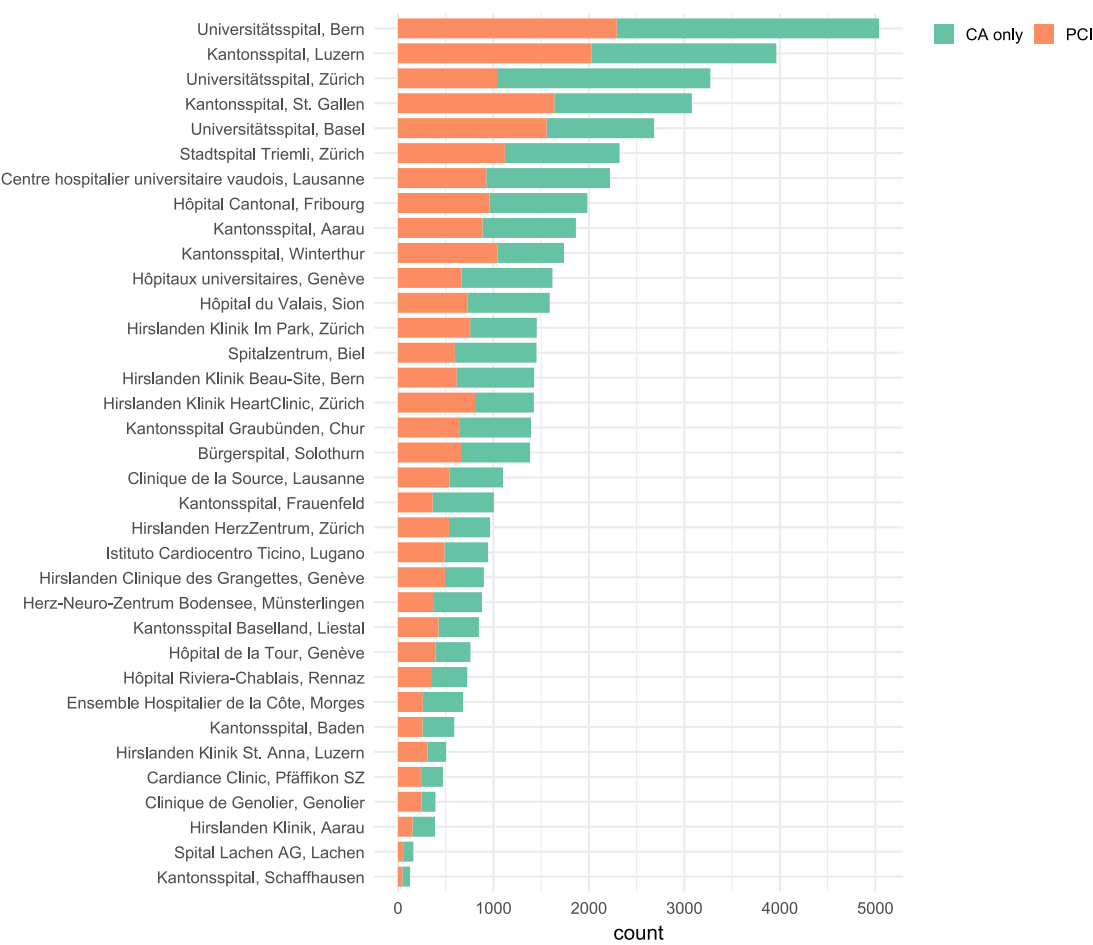
6.1 Overview of performed interventions

Table 1

Characteristic	Overall, N = 51'349 ¹	University h., N = 14'833 ¹	Public n-u h., N = 25'170 ¹	Private h., N = 11'346 ¹
Procedure				
CA only	26'838 (52%)	8'347 (56%)	12'876 (51%)	5'615 (49%)
PCI	24'511 (48%)	6'486 (44%)	12'294 (49%)	5'731 (51%)
CA and PCI	20'476 (40%)	5'437 (37%)	9'896 (39%)	5'143 (45%)
Staged PCI (planned PCI)	4'035 (7.9%)	1'049 (7.1%)	2'398 (9.5%)	588 (5.2%)
¹ n (%)				

6.2 Overview by center

Figure 1: Number of documented procedures by center



Hirslanden Klinik St. Anna, Luzern, started data entry during 2025, with the first procedure dating from 03.02.2025. While Istituto Cardiocentro Ticino, Lugano, documented procedures starting at 15.08.2025.

Table 2

Center	Total	CA Only	PCI				% Radial access
			N	% ACS	% CCS	% staged	
Universitätsspital, Bern	5039	2748	2291	41.2	43.0	15.8	71.8
Kantonsspital, Luzern	3963	1935	2028	32.3	33.3	34.3	88.7
Universitätsspital, Zürich	3272	2224	1048	46.9	24.7	28.4	56.0
Kantonsspital, St. Gallen	3078	1440	1638	34.8	34.4	30.8	97.4
Universitätsspital, Basel	2683	1125	1558	40.9	38.9	18.4	80.3
Stadtspital Triemli, Zürich	2321	1201	1120	58.8	28.5	12.8	89.7
Centre hospitalier universitaire vaudois, Lausanne	2221	1296	925	56.2	42.6	NA	87.8
Hôpital Cantonal, Fribourg	1984	1025	959	26.6	72.2	NA	65.1
Kantonsspital, Aarau	1864	978	886	54.5	28.4	17.0	83.9
Kantonsspital, Winterthur	1739	698	1041	45.6	32.8	21.6	84.0
Hôpitaux universitaires, Genève	1618	954	664	58.7	21.1	13.9	91.2
Hôpital du Valais, Sion	1590	864	726	55.0	44.5	NA	91.2
Hirslanden Klinik Im Park, Zürich	1454	697	757	15.7	68.8	15.5	82.3
Spitalzentrum, Biel	1451	855	596	33.7	39.9	26.3	89.7
Hirslanden Klinik Beau-Site, Bern	1426	811	615	19.8	60.0	20.2	74.1
Hirslanden Klinik HeartClinic, Zürich	1424	617	807	18.2	72.0	9.8	89.4
Kantonsspital Graubünden, Chur	1394	745	649	53.6	23.9	22.5	80.2
Bürgerspital, Solothurn	1384	724	660	40.0	36.2	23.6	71.0
Clinique de la Source, Lausanne	1100	561	539	2.0	97.6	0.4	85.7
Kantonsspital, Frauenfeld	1005	642	363	30.3	65.8	3.9	90.5
Hirslanden HerzZentrum, Zürich	964	430	534	23.0	60.9	16.1	84.8
Istituto Cardiocentro Ticino, Lugano	944	457	487	38.0	52.2	9.9	92.3
Hirslanden Clinique des Grangettes, Genève	900	408	492	8.9	77.0	0.4	89.2
Herz-Neuro-Zentrum Bodensee, Münsterlingen	880	502	378	55.6	32.8	11.6	86.5
Kantonsspital Baselland, Liestal	848	423	425	41.6	50.1	8.2	91.2
Hôpital de la Tour, Genève	759	364	395	23.5	74.4	0.0	94.5
Hôpital Riviera-Chablais, Rennaz	726	369	357	38.4	45.1	16.5	89.5
Ensemble Hospitalier de la Côte, Morges	682	422	260	26.2	58.8	15.0	93.4
Kantonsspital, Baden	590	333	257	59.1	14.0	19.8	85.3
Hirslanden Klinik St. Anna, Luzern	505	194	311	8.7	70.7	20.6	95.6
Cardiance Clinic, Pfäffikon SZ	471	227	244	7.8	86.9	5.3	74.3
Clinique de Genolier, Genolier	393	146	247	0.4	99.6	0.0	88.3
Hirslanden Klinik, Aarau	388	236	152	16.4	71.7	11.8	81.4
Spital Lachen AG, Lachen	162	107	55	3.6	92.7	3.6	88.9
Kantonsspital, Schaffhausen	127	80	47	6.4	87.2	6.4	90.6

6.3 PART I - Overview of diagnostic Coronary Angiographies (CA) (without PCI)

6.3.1 Characteristics of patients undergoing diagnostic CA (without PCI)

Table 3

Characteristic	Overall, N = 26'494 ¹	University h., N = 8'177 ¹	Public n-u h., N = 12'731 ¹	Private h., N = 5'586 ¹
age [y]				
Mean (SD)	69 (12)	68 (12)	69 (11)	70 (11)
Median (IQR)	70 (62, 78)	69 (61, 78)	70 (62, 78)	71 (63, 79)
age group				
<40 y	403 (1.5%)	181 (2.2%)	173 (1.4%)	49 (0.9%)
40 - 60 y	5'183 (20%)	1'770 (22%)	2'465 (19%)	948 (17%)
60 - 80 y	16'017 (60%)	4'712 (58%)	7'832 (62%)	3'473 (62%)
80+ y	4'891 (18%)	1'514 (19%)	2'261 (18%)	1'116 (20%)
sex				
female	8'710 (33%)	2'634 (32%)	4'228 (33%)	1'848 (33%)
male	17'784 (67%)	5'543 (68%)	8'503 (67%)	3'738 (67%)
¹ n (%)				

Note

Note that from all form entries with procedure 'CA only', only the latest entry per patient was counted for Table 3.

Figure 2: Age distribution by sex

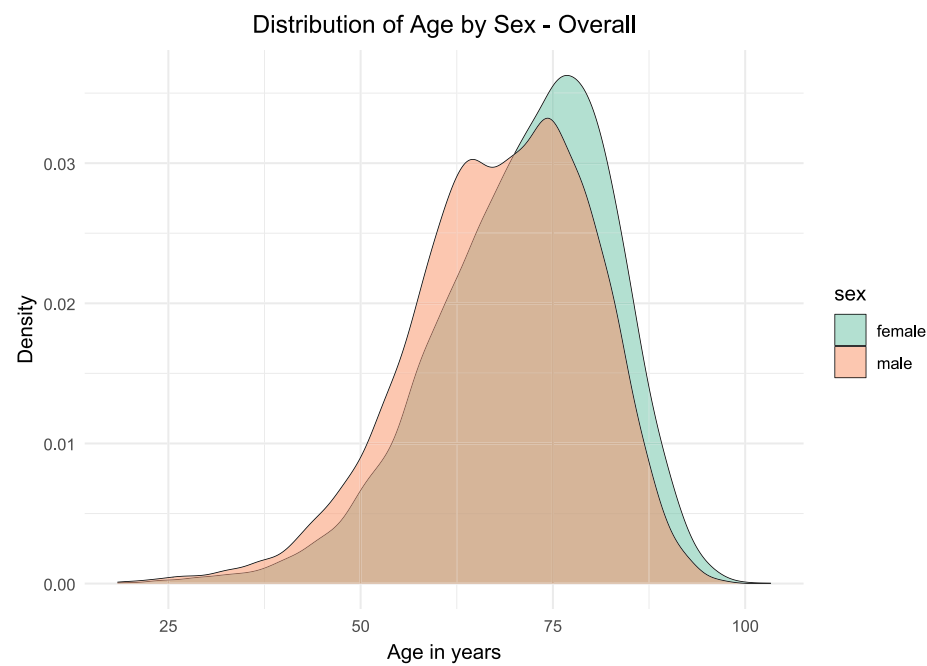
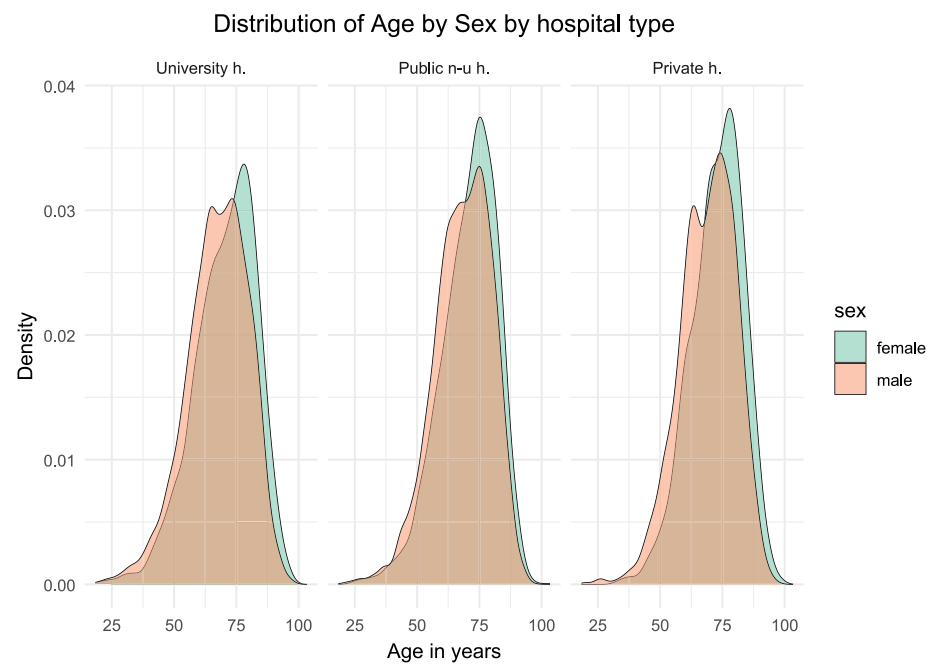


Figure 3: Age distribution by sex



6.3.2 Clinical presentation of patients undergoing diagnostic CA without subsequent revascularization (PCI or CABG)*

Table 4

Characteristic	Overall, N = 23'439 ¹	University h., N = 7'593 ¹	Public n-u h., N = 11'258 ¹	Private h., N = 4'588 ¹
Type of Coronary Syndrom				
ACS	4'784 (21%)	1'994 (27%)	2'301 (21%)	489 (11%)
CCS	18'421 (79%)	5'466 (73%)	8'871 (79%)	4'084 (89%)
Missing	234	133	86	15
Type of ACS				
Unstable angina pectoris	1'171 (24%)	378 (19%)	621 (27%)	172 (35%)
Non-STEMI	2'536 (53%)	1'037 (52%)	1'279 (56%)	220 (45%)
STEMI	459 (9.6%)	260 (13%)	177 (7.7%)	22 (4.5%)
Unknown	618 (13%)	319 (16%)	224 (9.7%)	75 (15%)
¹ n (%)				

Note

*: Records for patients with future revascularization (CABG or PCI, including patients referred to the heart team, [Table 9](#)) were excluded from this analysis.

Unlike form version V2.0, the 'Unknown' option is not available in SwissCaRe form version V1 for the 'type of ACS' variable. This option was created during post-processing of the data when the indication was reported as 'ACS,' but further specification was missing.

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.)

6.3.3 Indication in patients undergoing diagnostic CA without subsequent revascularization (PCI or CABG)*

Table 5

Characteristic	Overall N = 23'439 ¹	University h. N = 7'593 ¹	Public n-u h. N = 11'258 ¹	Private h. N = 4'588 ¹
Indication				
Clinical presentation as ACS	4'784 (21%)	1'994 (27%)	2'301 (21%)	489 (11%)
Suspected CAD or suspected progression of known CAD	10'922 (47%)	2'654 (36%)	5'537 (50%)	2'731 (60%)
Planned valvular heart disease intervention	3'517 (15%)	1'084 (15%)	1'605 (14%)	828 (18%)
Follow-up after HTX	261 (1.1%)	239 (3.2%)	16 (0.1%)	6 (0.1%)
Heart failure	1'500 (6.5%)	411 (5.5%)	879 (7.9%)	210 (4.6%)
Routine follow-up	761 (3.3%)	293 (3.9%)	357 (3.2%)	111 (2.4%)
Tachy- or bradyarrhythmia	631 (2.7%)	262 (3.5%)	287 (2.6%)	82 (1.8%)
Planned vascular surgery	340 (1.5%)	210 (2.8%)	91 (0.8%)	39 (0.9%)
Planned major surgery	489 (2.1%)	313 (4.2%)	99 (0.9%)	77 (1.7%)
Missing	234	133	86	15
¹ n (%)				

Note

*: Records for patients with future revascularization (CABG or PCI, including patients referred to the heart team, [Table 9](#)) were excluded from this analysis.

6.3.4 Preceding diagnostic tests in patients with suspected (progression of) CAD undergoing diagnostic CA without subsequent revascularization (PCI or CABG)*

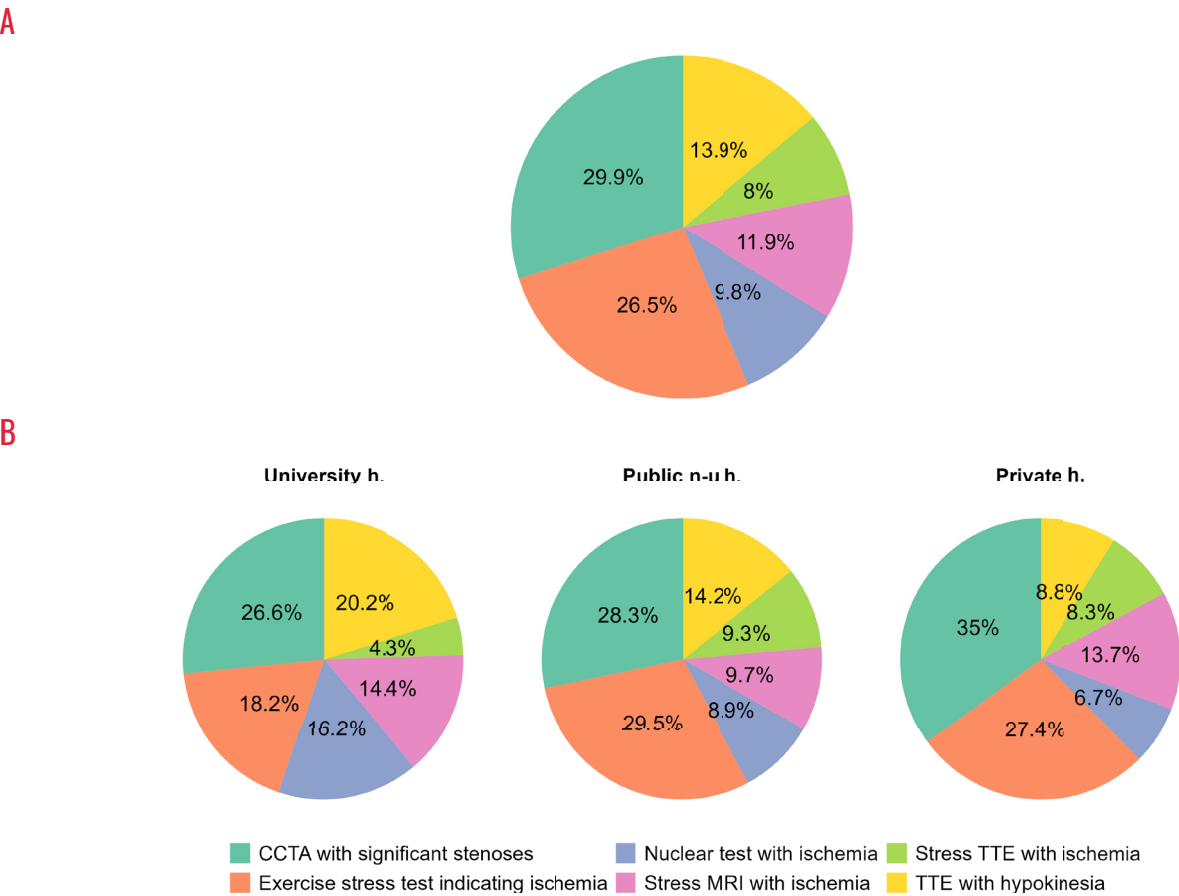
Table 6

Characteristic ¹	Overall N = 10'922 ²	University h. N = 2'654 ²	Public n-u h. N = 5'537 ²	Private h. N = 2'731 ²
Preceding tests suggesting CAD*	6'405 (59%)	1'374 (52%)	3'176 (59%)	1'855 (68%)
Missing	113	0	112	1
Exercise stress test indicating ischemia*	1'742 (16%)	259 (9.8%)	953 (18%)	530 (19%)
CCTA with significant stenoses*	1'969 (18%)	378 (14%)	914 (17%)	677 (25%)
Stress MRI with ischemia*	782 (7.2%)	205 (7.7%)	312 (5.8%)	265 (9.7%)
Stress TTE with ischemia*	524 (4.8%)	61 (2.3%)	302 (5.6%)	161 (5.9%)
TTE with hypokinesia*	917 (8.5%)	287 (11%)	460 (8.5%)	170 (6.2%)
Nuclear test with ischemia*	648 (6.0%)	230 (8.7%)	289 (5.3%)	129 (4.7%)
¹ *: Multiple-choice variable				
² n (%)				

Note

*Records for patients with future revascularization (CABG or PCI, including patients referred to the heart team, [Table 9](#)) were excluded from this analysis.

Figure 4: Distribution of the preceding tests suggesting CAD.



Note that [Table 6](#) allows for multiple responses per record, where 100% corresponds to the total number of interventions in patients with suspected CAD. In contrast, this figure represents the relative distribution of all tests performed (total tests = 100%). A: Overall. B: Distribution by hospital type.

6.3.5 Symptoms in patients with suspected (progression of) CAD undergoing diagnostic CA without subsequent revascularization (PCI or CABG)*

Table 7

Characteristic	Overall N = 10'922 ¹	University h. N = 2'654 ¹	Public n-u h. N = 5'537 ¹	Private h. N = 2'731 ¹
Asymptomatic patients	3'705 (36%)	1'238 (47%)	1'471 (29%)	996 (40%)
Missing	666	34	385	247
Dyspnea	4'773 (47%)	933 (36%)	2'796 (54%)	1'044 (42%)
Missing	687	37	389	261
Angina pectoris	3'167 (29%)	735 (28%)	1'682 (30%)	750 (27%)
Missing	3	0	3	0
if Angina: CCS				
I	384 (12%)	58 (7.9%)	188 (11%)	138 (18%)
II	2'201 (69%)	480 (65%)	1'203 (72%)	518 (69%)
III	313 (9.9%)	74 (10%)	177 (11%)	62 (8.3%)
IV	110 (3.5%)	33 (4.5%)	61 (3.6%)	16 (2.1%)
Unknown	159 (5.0%)	90 (12%)	53 (3.2%)	16 (2.1%)
if Angina: Anti-anginal drugs (prior or current)				
No	1'568 (50%)	254 (35%)	912 (54%)	402 (54%)
Yes	1'388 (44%)	284 (39%)	762 (45%)	342 (46%)
Unknown	211 (6.7%)	197 (27%)	8 (0.5%)	6 (0.8%)
	¹ n (%)			

Note

*Records for patients with future revascularization (CABG or PCI, including patients referred to the heart team, [Table 9](#)) were excluded from this analysis.

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

Unlike form version V2.0, the 'Unknown' option is not available in SwissCaRe form version V1 for the 'Angina pectoris' variable. This option was created during post-processing of the data when 'Angina pectoris' was recorded as 'Yes,' but either 'CCS' or 'Anti-anginal drugs' were missing.

6.3.6 Procedural characteristics of patients undergoing diagnostic CA without subsequent revascularization (PCI or CABG)*

Table 8

Characteristic ¹	Overall, N = 23'439 ²	University h., N = 7'593 ²	Public n-u h., N = 11'258 ²	Private h., N = 4'588 ²
Access				
Femoral	3'796 (16%)	1'770 (23%)	1'373 (12%)	653 (14%)
Radial	19'584 (84%)	5'796 (77%)	9'854 (88%)	3'934 (86%)
Missing	59	27	31	1
Intracoronary imaging*				
Missing	47	0	47	0
IVUS*				
	264 (1.1%)	121 (1.6%)	106 (0.9%)	37 (0.8%)
OCT*				
	458 (2.0%)	179 (2.4%)	238 (2.1%)	41 (0.9%)
Intracoronary physiology*				
Missing	48	0	48	0
Resting index (iFR/RFR)*				
	1'732 (7.4%)	249 (3.3%)	809 (7.2%)	674 (15%)
FFR*				
	1'299 (5.6%)	279 (3.7%)	755 (6.7%)	265 (5.8%)
¹ *: Multiple-choice variable				
² n (%)				

Note

*Records for patients with future revascularization (CABG or PCI, including patients referred to the heart team, [Table 9](#)) were excluded from this analysis.

6.3.7 Anticipated treatment after diagnostic CA (without ad hoc PCI)

Table 9

Characteristic	Clinical presentation as ACS				Suspected CAD or suspected progression of known CAD			
	Overall N = 5'748 ¹	University h. N = 2'334 ¹	Public n-u h. N = 2'818 ¹	Private h. N = 596 ¹	Overall N = 13'357 ¹	University h. N = 3'068 ¹	Public n-u h. N = 6'638 ¹	Private h. N = 3'651 ¹
Treatment in case of CAD/ACS								
None	1'749 (33%)	603 (29%)	1'022 (38%)	124 (22%)	3'493 (30%)	709 (25%)	1'992 (34%)	792 (25%)
Conservative medical treatment	2'622 (49%)	1'133 (55%)	1'166 (43%)	323 (58%)	5'888 (50%)	1'662 (60%)	2'766 (47%)	1'460 (46%)
CABG	518 (9.7%)	167 (8.0%)	275 (10%)	76 (14%)	945 (8.0%)	182 (6.5%)	493 (8.4%)	270 (8.5%)
PCI: follow-up PCI is planned at a later date	252 (4.7%)	109 (5.3%)	126 (4.7%)	17 (3.1%)	966 (8.2%)	113 (4.1%)	328 (5.6%)	525 (17%)
CABG or PCI (to be decided by Heart Team)	194 (3.6%)	64 (3.1%)	116 (4.3%)	14 (2.5%)	524 (4.4%)	119 (4.3%)	280 (4.8%)	125 (3.9%)
Missing	413	258	113	42	1'541	283	779	479
¹ n (%)								

Caution

The treatment options 'None' and 'CABG or PCI (to be decided by Heart Team)' are not available in form version V1.

6.3.8 Major complications in patients undergoing diagnostic CA (without PCI)

Table 10

Characteristic ¹	Overall N = 26'838 ²	University h. N = 8'347 ²	Public n-u h. N = 12'876 ²	Private h. N = 5'615 ²
Major complications*	53 (0.2%)	19 (0.2%)	25 (0.2%)	9 (0.2%)
Missing	60	13	47	0
Emergency open heart surgery*	24 (<0.1%)	5 (<0.1%)	14 (0.1%)	5 (<0.1%)
Clinically overt stroke*	9 (<0.1%)	2 (<0.1%)	6 (<0.1%)	1 (<0.1%)
Procedural death*	18 (<0.1%)	11 (0.1%)	4 (<0.1%)	3 (<0.1%)
Emergency vascular surgery (non-cardiac)*	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)
Pericardial tamponade*	2 (<0.1%)	0 (0%)	1 (<0.1%)	1 (<0.1%)
Missing	4'373	1'384	1'471	1'518
¹ *: Multiple-choice variable				
² n (%)				

Note

Major complications are shown in 1) all patients undergoing diagnostic CA (Table 10) and in 2) specifically in patients with coronary syndrom types CCS and ACS (Table 11).

Caution

The major complications 'Emergency vascular surgery (non-cardiac)' and 'Pericardial tamponade' are not available in form version V1.

Table 11

Characteristic ¹	ACS				CCS			
	Overall N = 5'748 ²	University h. N = 2'334 ²	Public n-u h. N = 2'818 ²	Private h. N = 596 ²	Overall N = 20'856 ²	University h. N = 5'880 ²	Public n-u h. N = 9'972 ²	Private h. N = 5'004 ²
Major complications*	18 (0.3%)	10 (0.4%)	7 (0.2%)	1 (0.2%)	35 (0.2%)	9 (0.2%)	18 (0.2%)	8 (0.2%)
Emergency open heart surgery*	7 (0.1%)	4 (0.2%)	2 (<0.1%)	1 (0.2%)	17 (<0.1%)	1 (<0.1%)	12 (0.1%)	4 (<0.1%)
Clinically overt stroke*	2 (<0.1%)	0 (0%)	2 (<0.1%)	0 (0%)	7 (<0.1%)	2 (<0.1%)	4 (<0.1%)	1 (<0.1%)
Procedural death*	8 (0.1%)	5 (0.2%)	3 (0.1%)	0 (0%)	10 (<0.1%)	6 (0.1%)	1 (<0.1%)	3 (<0.1%)
Emergency vascular surgery (non-cardiac)*	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Pericardial tamponade*	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (<0.1%)	0 (0%)	1 (<0.1%)	1 (<0.1%)
Missing	746	467	210	69	3'448	820	1'194	1'434
¹ *: Multiple-choice variable								
² n (%)								

Caution

The major complications 'Emergency vascular surgery (non-cardiac)' and 'Pericardial tamponade' are not available in form version V1.

6.4 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'.

6.4.1 Clinical characteristics of patients undergoing PCI

Table 12

Characteristic ¹	Overall, N = 20'925 ²	University h., N = 5'679 ²	Public n-u h., N = 10'307 ²	Private h., N = 4'919 ²
age [y]				
Mean (SD)	69 (11)	69 (12)	69 (11)	71 (11)
Median (IQR)	70 (61, 78)	69 (61, 78)	70 (61, 78)	71 (63, 79)
age group				
<40 y	157 (0.8%)	52 (0.9%)	75 (0.7%)	30 (0.6%)
40 - 60 y	4'251 (20%)	1'295 (23%)	2'171 (21%)	785 (16%)
60 - 80 y	12'430 (59%)	3'218 (57%)	6'180 (60%)	3'032 (61%)
80+ y	4'087 (20%)	1'114 (20%)	1'881 (18%)	1'092 (22%)
sex				
female	5'253 (25%)	1'385 (24%)	2'598 (25%)	1'270 (26%)
male	15'672 (75%)	4'294 (76%)	7'709 (75%)	3'669 (74%)
cvRF*	16'260 (94%)	4'346 (91%)	7'674 (94%)	4'240 (96%)
Missing	3'573	914	2'126	533
Arterial hypertension*	11'108 (64%)	2'926 (61%)	5'063 (62%)	3'119 (71%)
Diabetes requiring medication*	3'683 (21%)	1'073 (23%)	1'623 (20%)	987 (22%)
Dyslipidemia*	11'471 (66%)	2'988 (63%)	5'174 (63%)	3'309 (75%)
Smoking*	4'344 (25%)	1'308 (27%)	2'077 (25%)	959 (22%)
Family history*	3'552 (20%)	901 (19%)	1'602 (20%)	1'049 (24%)
cvRF unknown / not documented*	978 (6.9%)	226 (5.4%)	641 (9.1%)	111 (3.7%)
Number of CVRFs				
0	2'070 (12%)	645 (14%)	1'148 (14%)	277 (6.3%)
1	3'562 (21%)	999 (21%)	1'747 (21%)	816 (19%)
2	6'127 (35%)	1'594 (33%)	2'739 (33%)	1'794 (41%)
3	4'198 (24%)	1'142 (24%)	1'945 (24%)	1'111 (25%)
4 or 5	1'395 (8.0%)	385 (8.1%)	602 (7.4%)	408 (9.3%)
Missing	3'573	914	2'126	533
Patient history				
None	10'990 (63%)	3'232 (68%)	5'153 (63%)	2'605 (59%)
Prior PCI	5'240 (30%)	1'248 (26%)	2'510 (31%)	1'482 (34%)
Prior CABG	431 (2.5%)	184 (3.9%)	144 (1.8%)	103 (2.3%)
Prior PCI & CABG	474 (2.7%)	91 (1.9%)	221 (2.7%)	162 (3.7%)
unknown / not documented	214 (1.2%)	10 (0.2%)	151 (1.8%)	53 (1.2%)
Missing	3'576	914	2'128	534
LVEF				
Normal (50-70%)	10'310 (64%)	2'130 (49%)	4'957 (64%)	3'223 (80%)
Mildly reduced (40-49%)	1'956 (12%)	548 (13%)	1'077 (14%)	331 (8.2%)
Moderately reduced (30-39%)	874 (5.4%)	278 (6.4%)	452 (5.8%)	144 (3.6%)
Severely reduced (<30%)	596 (3.7%)	247 (5.7%)	291 (3.8%)	58 (1.4%)
unknown / not documented	2'370 (15%)	1'144 (26%)	959 (12%)	267 (6.6%)
Missing	4'819	1'332	2'571	916

¹ *: Multiple-choice variable

² n (%)

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 12](#). 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 3557 patients who only had entries of the procedure type 'Staged PCI' within the current report year 2025. Additional missing values are due to the inclusion of incomplete form entries.

Caution

The answer options 'unknown / not documented' are not part of form version V1.

Figure 5: Age distribution by sex

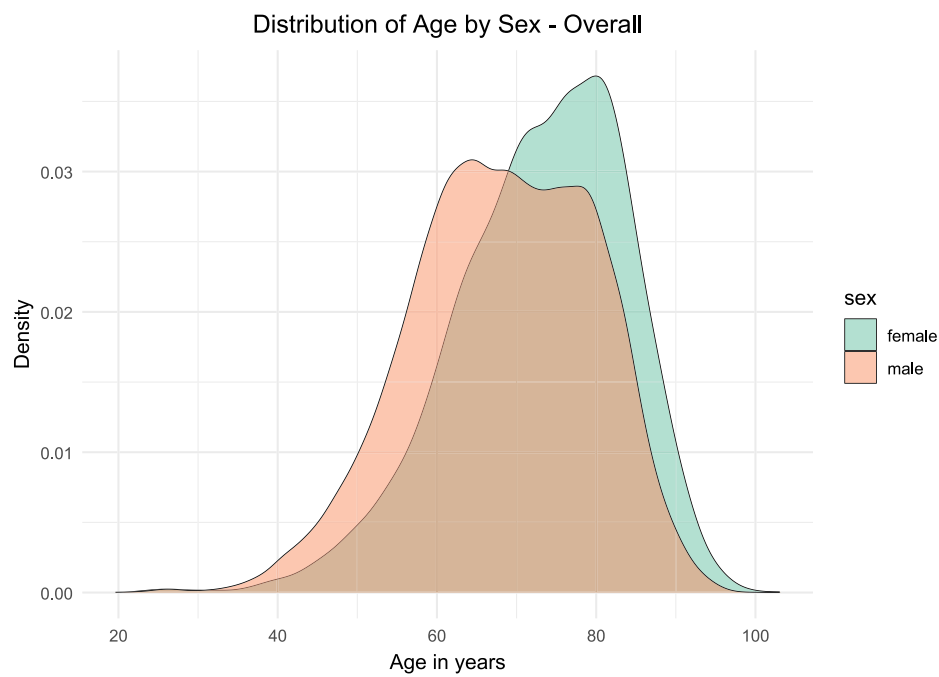
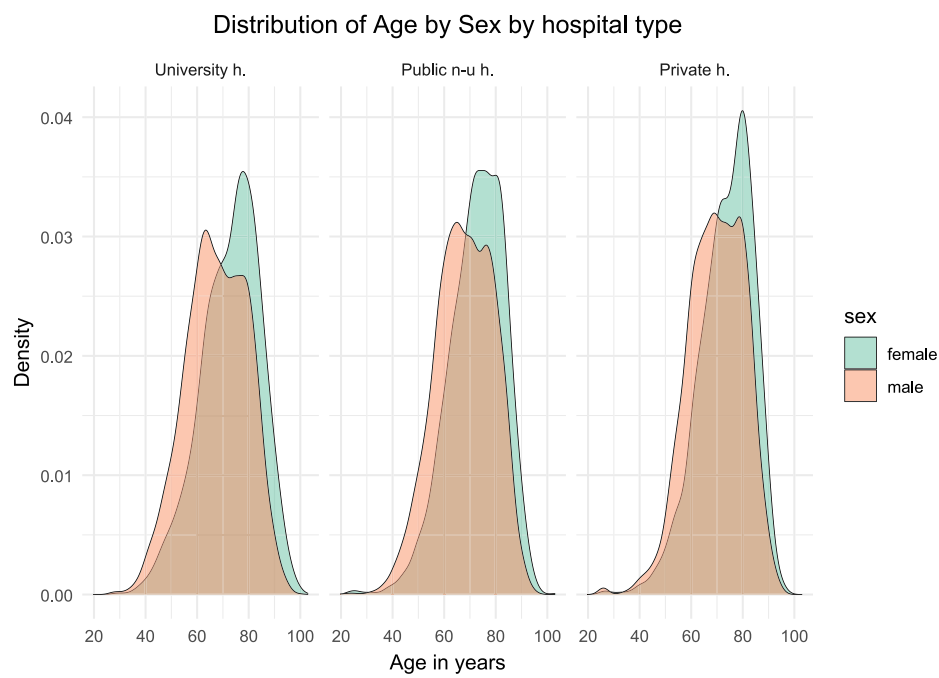


Figure 6: Age distribution by sex



6.4.2 Clinical presentation of patients undergoing PCI

Note

Unlike form version V2.0, the 'Unknown' option is not available in SwissCaRe form version V1 for the 'type of ACS' variable. This option was created during post-processing of the data when the indication was reported as 'ACS,' but further specification was missing.

Table 13

Characteristic	Overall N = 24'511 ¹	University h. N = 6'486 ¹	Public n-u h. N = 12'294 ¹	Private h. N = 5'731 ¹
Out of hospital cardiac arrest	835 (4.1%)	283 (5.2%)	370 (3.7%)	182 (3.5%)
Missing	4'055	1'049	2'417	589
Intubated	530 (2.6%)	252 (4.6%)	225 (2.3%)	53 (1.0%)
Missing	4'056	1'049	2'418	589
Cardiogenic shock	512 (2.5%)	226 (4.2%)	238 (2.4%)	48 (0.9%)
Missing	4'068	1'049	2'431	588
Type of Coronary Syndrom				
ACS	9'066 (37%)	2'982 (46%)	5'075 (41%)	1'009 (18%)
CCS	11'235 (46%)	2'383 (37%)	4'793 (39%)	4'059 (72%)
Staged PCI	4'035 (17%)	1'049 (16%)	2'398 (20%)	588 (10%)
Missing	175	72	28	75
Type of ACS				
Unstable angina pectoris	1'035 (11%)	185 (6.2%)	621 (12%)	229 (23%)
Non-STEMI	4'155 (46%)	1'264 (42%)	2'441 (48%)	450 (45%)
STEMI	3'413 (38%)	1'340 (45%)	1'828 (36%)	245 (24%)
subacute STEMI (symptoms-onset to hospitalization > 12h)	371 (14%)	114 (12%)	218 (15%)	39 (19%)
Unknown	463 (5.1%)	193 (6.5%)	185 (3.6%)	85 (8.4%)
	¹ n (%)			

6.4.3 Indication in patients undergoing PCI

Table 14

Characteristic	Overall N = 20'476 ¹	University h. N = 5'437 ¹	Public n-u h. N = 9'896 ¹	Private h. N = 5'143 ¹
Indication				
Clinical presentation as ACS	9'066 (45%)	2'982 (56%)	5'075 (51%)	1'009 (20%)
Suspected CAD or suspected progression of known CAD	10'068 (50%)	2'137 (40%)	4'144 (42%)	3'787 (75%)
Planned valvular heart disease intervention	192 (0.9%)	18 (0.3%)	62 (0.6%)	112 (2.2%)
Follow-up after HTX	16 (<0.1%)	10 (0.2%)	5 (<0.1%)	1 (<0.1%)
Heart failure	235 (1.2%)	51 (1.0%)	129 (1.3%)	55 (1.1%)
Routine follow-up	556 (2.7%)	102 (1.9%)	382 (3.9%)	72 (1.4%)
Tachy- or bradyarrhythmia	131 (0.6%)	49 (0.9%)	58 (0.6%)	24 (0.5%)
Planned vascular surgery	13 (<0.1%)	4 (<0.1%)	5 (<0.1%)	4 (<0.1%)
Planned major surgery	24 (0.1%)	12 (0.2%)	8 (<0.1%)	4 (<0.1%)
Missing	175	72	28	75
	¹ n (%)			

Note

Please note: The corresponding information is not available in 4035 form entries of the procedure type ‘Staged PCI’ within the current report year 2025. These entries were discarded from the table above.

6.4.4 Preceding diagnostic tests in patients with suspected (progression of) CAD undergoing PCI

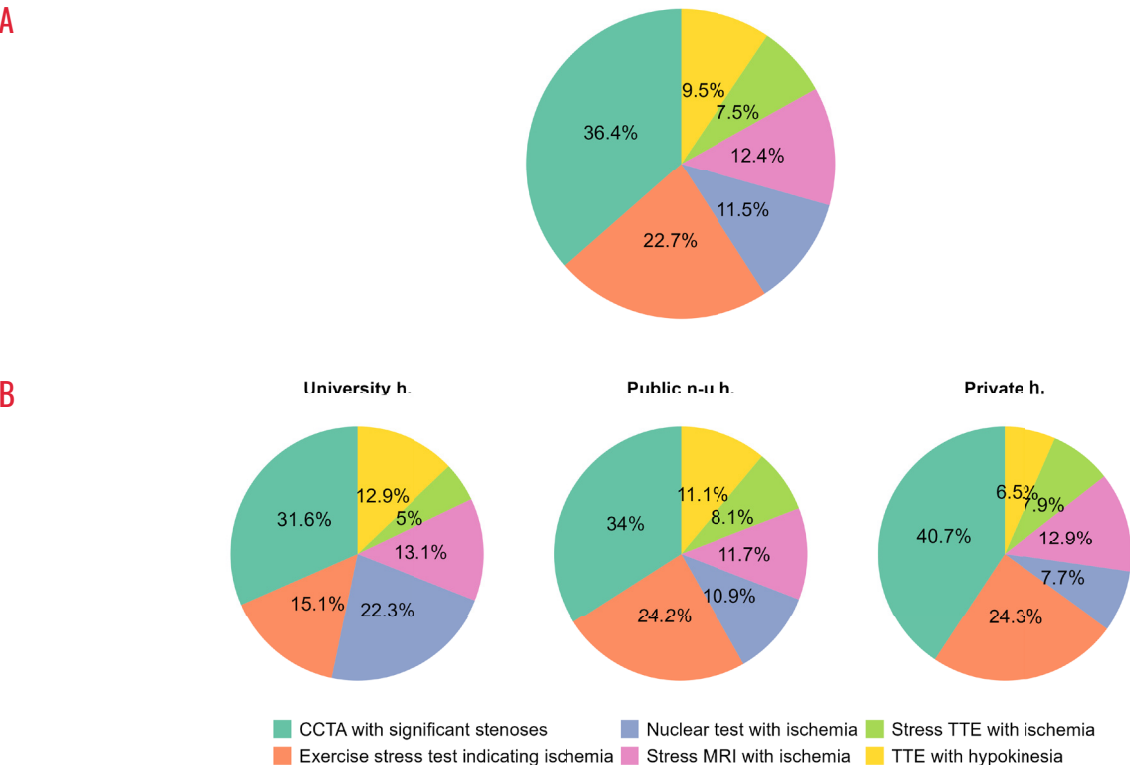
Table 15

Characteristic ¹	Overall N = 10'068 ²	University h. N = 2'137 ²	Public n-u h. N = 4'144 ²	Private h. N = 3'787 ²
Preceding tests suggesting CAD*	6'622 (66%)	1'112 (52%)	2'729 (67%)	2'781 (73%)
Missing	55	1	53	1
Exercise stress test indicating ischemia*	1'559 (16%)	175 (8.2%)	677 (17%)	707 (19%)
CCTA with significant stenoses*	2'501 (25%)	365 (17%)	953 (23%)	1'183 (31%)
Stress MRI with ischemia*	852 (8.5%)	151 (7.1%)	327 (8.0%)	374 (9.9%)
Stress TTE with ischemia*	513 (5.1%)	58 (2.7%)	226 (5.5%)	229 (6.0%)
TTE with hypokinesia*	649 (6.5%)	149 (7.0%)	310 (7.6%)	190 (5.0%)
Nuclear test with ischemia*	789 (7.9%)	258 (12%)	306 (7.5%)	225 (5.9%)

¹ *: Multiple-choice variable

² n (%)

Figure 7: Distribution of the preceding tests suggesting CAD.



Note that Table 15 allows for multiple responses per record, where 100% corresponds to the total number of interventions in patients with suspected CAD. In contrast, this figure represents the relative distribution of all tests performed (total tests = 100%). A: Overall. B: Distribution by hospital type.

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

Table 16

Characteristic	Overall N = 10'068 ¹	University h. N = 2'137 ¹	Public n-u h. N = 4'144 ¹	Private h. N = 3'787 ¹
Asymptomatic patients	3'033 (32%)	847 (41%)	890 (23%)	1'296 (38%)
Missing	667	50	272	345
Dyspnea	4'148 (44%)	735 (35%)	1'995 (52%)	1'418 (41%)
Missing	707	50	288	369
Angina pectoris	3'960 (39%)	841 (39%)	1'868 (45%)	1'251 (33%)
Missing	2	0	2	0
if Angina: CCS				
I	329 (8.3%)	47 (5.6%)	103 (5.5%)	179 (14%)
II	2'628 (66%)	536 (64%)	1'291 (69%)	801 (64%)
III	759 (19%)	142 (17%)	392 (21%)	225 (18%)
IV	104 (2.6%)	34 (4.0%)	43 (2.3%)	27 (2.2%)
Unknown	140 (3.5%)	82 (9.8%)	39 (2.1%)	19 (1.5%)
if Angina: Anti-anginal drugs (prior or current)				
No	1'721 (43%)	246 (29%)	888 (48%)	587 (47%)
Yes	1'917 (48%)	284 (34%)	971 (52%)	662 (53%)
Unknown	322 (8.1%)	311 (37%)	9 (0.5%)	2 (0.2%)
	¹ n (%)			

Note

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

Unlike SwissCaRe form version V2.0, the 'Unknown' option is not available in SwissCaRe form version V1. This option was created during post-processing of the data where 'Angina pectoris' was recorded as 'Yes', but either 'CCS' or 'Anti-anginal drugs' were missing.

6.4.6 Referral times of NSTEMI patients undergoing PCI

Table 17

Characteristic	Overall N = 4'155 ¹	University h. N = 1'264 ¹	Public n-u h. N = 2'441 ¹	Private h. N = 450 ¹
Time between first ECG and coronary angiography				
<24 hours	2'756 (67%)	709 (56%)	1'751 (72%)	296 (67%)
24-48 hours	591 (14%)	147 (12%)	385 (16%)	59 (13%)
>48 hours	421 (10%)	109 (8.7%)	254 (10%)	58 (13%)
unknown / not documented	359 (8.7%)	294 (23%)	33 (1.4%)	32 (7.2%)
Missing	28	5	18	5
¹ n (%)				

Caution

The answer option 'unknown / not documented' is not available in form version V1.

6.4.7 Referral times of acute* STEMI patients undergoing PCI

Table 18

Characteristic	Overall, N = 3'039	University h., N = 1'225	Public n-u h., N = 1'608	Private h., N = 206
Symptoms-to-hospitalization time [h]				
Mean (SD)	2.90 (2.39)	2.78 (2.28)	2.95 (2.40)	3.17 (2.79)
Median (IQR)	2.02 (1.25, 3.76)	2.00 (1.23, 3.72)	2.05 (1.28, 3.78)	2.09 (1.25, 3.90)
Missing	829	418	367	44
Door-to-balloon time [min]				
Mean (SD)	80 (173)	83 (161)	77 (179)	79 (192)
Median (IQR)	49 (30, 77)	56 (36, 81)	41 (25, 72)	45 (25, 75)
Missing	198	48	134	16

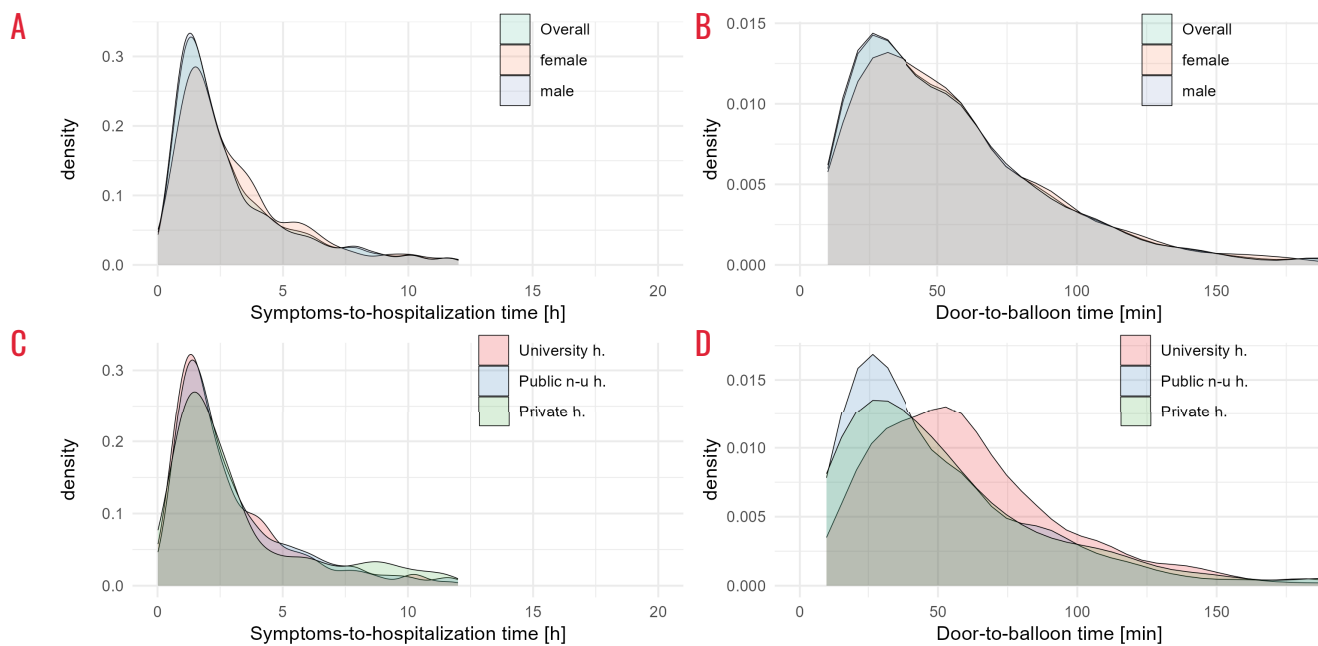
Note

*: Acute STEMI was defined as symptoms-to-hospitalization time < 12h.

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

Door-to-balloon times < 10 minutes and > 48 hours have been excluded from the analysis. Symptoms-to-hospitalization times <= 0 have been excluded from the analysis. While it cannot be ruled out that symptoms occur only after hospitalization, these cases are not informative for an analysis of the referral times. Therefore, neither symptoms-to-hospitalization time nor door-to-balloon time are reported for cases where the 'symptoms-to-hospitalization time' is negative or zero.

Figure 8: Distribution of symptoms-to-hospitalization time and door-to-balloon time in STEMI patients undergoing PCI.



A/B) Symptoms-to-hospitalization and door-to-balloon time overall and stratified by sex. **C/D)** Symptoms-to-hospitalization and door-to-balloon time by hospital type.

6.4.7.1 Referral times of female vs. male patients

Table 19

Characteristic	female, N = 745	male, N = 2'294
Symptoms-to-balloon time [h]		
Median (IQR)	3.25 (2.25, 5.36)	3.00 (2.00, 4.75)
Missing	214	573
Door-to-balloon time [min]		
Median (IQR)	50 (30, 80)	48 (29, 75)
Missing	45	153

Note

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

Symptoms-to-balloon times <= 0 and > 72 hours have been excluded from the analysis.

Door-to-balloon times < 10 minutes and > 48 hours have been excluded from the analysis.

6.4.8 Procedural characteristics of patients undergoing PCI

Table 20

Characteristic ¹	Overall N = 24'511 ²	University h. N = 6'486 ²	Public n-u h. N = 12'294 ²	Private h. N = 5'731 ²
Mechanical support devices*	338 (1.4%)	154 (2.4%)	169 (1.4%)	15 (0.3%)
Missing	144	103	36	5
Impella*	290 (1.2%)	114 (1.8%)	162 (1.3%)	14 (0.2%)
ECMO*	70 (0.3%)	55 (0.9%)	14 (0.1%)	1 (<0.1%)
Access				
Femoral	4'285 (18%)	1'551 (25%)	1'879 (15%)	855 (15%)
Radial	19'929 (82%)	4'654 (75%)	10'399 (85%)	4'876 (85%)
Missing	297	281	16	0
Dose [cGycm2 = uGym2]				
Mean (SD)	5'189 (5'876)	6'260 (7'308)	4'485 (4'890)	5'204 (5'364)
Median (IQR)	3'468 (1'860, 6'446)	4'110 (2'015, 8'066)	3'100 (1'774, 5'492)	3'542 (1'924, 6'434)
Missing	3'468	132	2'521	815
Dose above 10'000 cGycm2 (=uGym2)	2'546 (12%)	1'144 (18%)	799 (8.2%)	603 (12%)
Missing	3'468	132	2'521	815
Intracoronary imaging*	4'921 (20%)	1'615 (25%)	2'846 (23%)	460 (8.0%)
Missing	35	0	34	1
IVUS*	2'354 (9.6%)	983 (15%)	1'145 (9.3%)	226 (3.9%)
OCT*	2'623 (11%)	664 (10%)	1'718 (14%)	241 (4.2%)
Intracoronary physiology*	1'982 (8.1%)	214 (3.3%)	914 (7.5%)	854 (15%)
Missing	30	0	29	1
Resting index (iFR/RFR)*	1'443 (5.9%)	116 (1.8%)	564 (4.6%)	763 (13%)
FFR*	936 (3.8%)	139 (2.1%)	480 (3.9%)	317 (5.5%)
¹ *: Multiple-choice variable				
² n (%)				

Note

Please note: Not all variables listed in the above table are collected for 4035 form entries of the procedure type 'Staged PCI' within the current report year 2025. 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.

6.4.9 PCI-specific procedural characteristics of patients undergoing PCI

Table 21

Characteristic	Overall, N = 24'511 ¹	University h., N = 6'486 ¹	Public n-u h., N = 12'294 ¹	Private h., N = 5'731 ¹
PCI aborted	580 (2.8%)	76 (1.3%)	387 (3.5%)	117 (2.9%)
Missing	3'695	754	1'266	1'675
Number of treated lesions				
Mean (SD)	1.67 (0.98)	1.64 (1.00)	1.71 (1.00)	1.65 (0.88)
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	1'110	323	495	292
Number of treated vessels				
Mean (SD)	1.25 (0.53)	1.24 (0.53)	1.27 (0.55)	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	893	149	487	257
Unprotected left main stenosis treated	1'370 (5.7%)	299 (4.7%)	813 (6.9%)	258 (4.6%)
Missing	652	76	456	120
Number of implanted stents				
Mean (SD)	1.40 (1.05)	1.33 (0.98)	1.39 (1.08)	1.49 (1.05)
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	611	76	415	120
Number of used drug-eluting balloons				
Mean (SD)	0.43 (0.81)	0.39 (0.73)	0.52 (0.92)	0.28 (0.63)
Median (IQR)	0.00 (0.00, 1.00)	0.00 (0.00, 1.00)	0.00 (0.00, 1.00)	0.00 (0.00, 0.00)
Missing	613	76	417	120
Stent only	16'159 (68%)	4'334 (68%)	7'627 (64%)	4'198 (75%)
Missing	613	76	417	120
Drug-eluting balloon only	2'936 (12%)	750 (12%)	1'732 (15%)	454 (8.1%)
Missing	613	76	417	120
Mixed Stent and DEB	3'910 (16%)	1'031 (16%)	2'158 (18%)	721 (13%)
Missing	613	76	417	120
Stent failure intervention*	1'918 (8.0%)	363 (5.7%)	955 (8.0%)	600 (11%)
Missing	624	76	428	120
Restenosis*	1'761 (7.4%)	313 (4.9%)	868 (7.3%)	580 (10%)
Stent thrombosis*	176 (0.7%)	53 (0.8%)	95 (0.8%)	28 (0.5%)
CTO procedure	1'404 (5.7%)	359 (5.5%)	675 (5.5%)	370 (6.5%)
Missing	36	0	33	3
CTO procedure - specification				
Antegrade	1'268 (90%)	303 (84%)	614 (91%)	351 (95%)
Retrograde	136 (9.7%)	56 (16%)	61 (9.0%)	19 (5.1%)
Calcium modification*	5'673 (24%)	643 (10%)	4'026 (34%)	1'004 (18%)
Missing	616	76	420	120
Cutting balloon*	2'701 (11%)	297 (4.6%)	2'129 (18%)	275 (4.9%)
Scoring balloon*	696 (2.9%)	82 (1.3%)	482 (4.1%)	132 (2.4%)
Rotablation*	454 (1.9%)	115 (1.8%)	276 (2.3%)	63 (1.1%)
Lithotripsy*	839 (3.5%)	212 (3.3%)	374 (3.1%)	253 (4.5%)
Orbital atherectomy*	92 (0.4%)	15 (0.2%)	65 (0.5%)	12 (0.2%)
High-pressure balloon*	1'827 (9.0%)	36 (0.6%)	1'389 (13%)	402 (10%)
Bifurcation	5'467 (23%)	867 (14%)	2'965 (25%)	1'635 (29%)
Missing	616	76	420	120
Bifurcation - specification				
1 stent	4'860 (89%)	789 (91%)	2'698 (91%)	1'373 (84%)
2 stents	607 (11%)	78 (9.0%)	267 (9.0%)	262 (16%)

¹ n (%)

Caution

Not available in form version V1:

- The variable 'PCI aborted'
- The answer option 'High-pressure balloon' for calcium modification

In the 2024 report, a coding error affected the 'drug-eluting balloon only' category; this has been corrected in the present report. A corrected version of this table based on 2024 data is provided in the Appendix (Corrigendum), see [Table 26](#).

6.4.10 Key procedural and PCI-specific procedural characteristics of patients undergoing PCI by center

Table 22

Table 22

Center	Total PCI	Intracoronary imaging		Intracoronary physiology		Calcium modification								
		N	%	N	%	Stents	DCB	None	Cutting balloon	Scoring balloon	Rotablation	Lithotripsy	Orbital atherectomy	High-pressure balloon
Universitätsspital, Bern	2291	601	26.2	73	3.2	3265	682	2133	56	3	30	37	12	7
Kantonsspital, Luzern	2028	1146	56.5	45	2.2	2398	1965	832	718	33	72	72	40	751
Kantonsspital, St. Gallen	1638	738	45.1	36	2.2	2541	1734	146	888	228	124	77	0	36
Universitätsspital, Basel	1558	53	3.4	23	1.5	1856	1112	1480	0	0	48	0	0	15
Stadtspital Triemli, Zürich	1120	108	9.6	38	3.4	1350	244	1018	22	1	11	6	0	41
Universitätsspital, Zürich	1048	895	85.4	40	3.8	1623	320	897	30	0	15	102	0	14
Kantonsspital, Winterthur	1041	110	10.6	42	4.0	1702	302	916	3	48	7	35	0	39
Hôpital Cantonal, Fribourg	959	159	16.6	81	8.4	1248	376	720	173	68	10	29	1	0
Centre hospitalier universitaire vaudois, Lausanne	925	47	5.1	64	6.9	1062	185	849	29	4	8	19	3	0
Kantonsspital, Aarau	886	142	16.0	96	10.8	1287	399	489	247	36	19	20	0	164
Hirslanden Klinik HeartClinic, Zürich	807	46	5.7	65	8.1	1235	226	561	2	8	6	18	0	227
Hirslanden Klinik Im Park, Zürich	757	56	7.4	143	18.9	1269	175	656	6	0	10	41	0	22
Hôpital du Valais, Sion	726	9	1.2	75	10.3	936	69	657	8	11	2	4	0	24
Hôpitaux universitaires, Genève	664	19	2.9	14	2.1	726	204	408	182	75	14	54	0	0
Bürgerspital, Solothurn	660	52	7.9	60	9.1	937	66	505	1	7	4	15	24	74
Kantonsspital Graubünden, Chur	649	125	19.3	86	13.3	899	117	411	27	0	4	36	0	176
Hirslanden Klinik Beau-Site, Bern	615	12	2.0	75	12.2	787	201	504	5	21	2	26	0	58
Spitalzentrum, Biel	596	59	9.9	64	10.7	740	132	545	3	2	6	26	0	1
Clinique de la Source, Lausanne	539	26	4.8	152	28.2	586	71	455	41	21	1	38	0	0
Hirslanden HerzZentrum, Zürich	534	55	10.3	42	7.9	854	156	449	4	21	3	36	0	13
Hirslanden Clinique des Grangettes, Genève	492	121	24.6	78	15.9	861	223	376	71	16	14	35	5	0
Istituto Cardiocentro Ticino, Lugano	487	106	21.8	67	13.8	564	234	438	10	24	1	7	0	5
Kantonsspital Baselland, Liestal	425	24	5.6	54	12.7	525	250	387	7	9	1	5	0	2
Hôpital de la Tour, Genève	395	75	19.0	71	18.0	546	113	269	77	14	21	31	3	0
Herz-Neuro-Zentrum Bodensee, Münsterlingen	378	0	0.0	74	19.6	527	97	301	0	0	0	0	0	64
Kantonsspital, Frauenfeld	363	24	6.6	54	14.9	499	234	309	2	11	11	28	0	1
Hôpital Riviera-Chablais, Rennaz	357	35	9.8	101	28.3	322	49	173	14	3	0	10	0	59
Hirslanden Klinik St. Anna, Luzern	311	7	2.3	15	4.8	461	53	286	14	3	0	6	0	4
Ensemble Hospitalier de la Côte, Morges	260	28	10.8	49	18.8	320	57	193	15	13	4	7	4	2
Kantonsspital, Baden	257	9	3.5	6	2.3	369	37	220	5	1	4	4	0	0
Clinique de Genolier, Genolier	247	18	7.3	62	25.1	283	102	195	37	9	1	6	0	0
Cardiance Clinic, Pfäffikon SZ	244	7	2.9	28	11.5	399	73	229	2	2	1	5	0	4
Hirslanden Klinik, Aarau	152	9	5.9	0	0.0	226	36	133	1	4	0	4	0	8
Spital Lachen AG, Lachen	55	0	0.0	7	12.7	83	6	51	1	0	0	0	0	3
Kantonsspital, Schaffhausen	47	0	0.0	2	4.3	57	9	31	0	0	0	0	0	13

Caution

The answer option 'High-pressure balloon' for calcium modification is not available in form version V1.

6.4.11 Major complications occurring in the CathLab in patients undergoing PCI

Table 23

Characteristic ¹	Overall N = 24'511 ²	University h. N = 6'486 ²	Public n-u h. N = 12'294 ²	Private h. N = 5'731 ²
Major complications*	128 (0.5%)	28 (0.4%)	74 (0.6%)	26 (0.5%)
Missing	32	4	25	3
Emergency open heart surgery*	50 (0.2%)	4 (<0.1%)	34 (0.3%)	12 (0.2%)
Clinically overt stroke*	19 (<0.1%)	3 (<0.1%)	13 (0.1%)	3 (<0.1%)
Procedural death*	46 (0.2%)	16 (0.2%)	20 (0.2%)	10 (0.2%)
Emergency vascular surgery (non-cardiac)*	2 (<0.1%)	1 (<0.1%)	1 (<0.1%)	0 (0%)
Pericardial tamponade*	14 (<0.1%)	4 (<0.1%)	8 (<0.1%)	2 (<0.1%)
Missing	3'727	758	1'291	1'678
¹ *: Multiple-choice variable				
² n (%)				

Caution

The major complications ‘Emergency vascular surgery (non-cardiac)’ and ‘Pericardial tamponade’ are not available in form version V1.

Table 24

Characteristic ¹	ACS				CCS			
	Overall N = 9'066 ²	University h. N = 2'982 ²	Public n-u h. N = 5'075 ²	Private h. N = 1'009 ²	Overall N = 11'235 ²	University h. N = 2'383 ²	Public n-u h. N = 4'793 ²	Private h. N = 4'059 ²
Major complications*	53 (0.6%)	15 (0.5%)	33 (0.7%)	5 (0.5%)	45 (0.4%)	7 (0.3%)	20 (0.4%)	18 (0.4%)
Missing	2	2	0	0	4	2	0	2
Emergency open heart surgery*	16 (0.2%)	2 (<0.1%)	13 (0.3%)	1 (<0.1%)	22 (0.2%)	2 (<0.1%)	10 (0.2%)	10 (0.2%)
Clinically overt stroke*	4 (<0.1%)	0 (0%)	3 (<0.1%)	1 (<0.1%)	11 (<0.1%)	1 (<0.1%)	8 (0.2%)	2 (<0.1%)
Procedural death*	29 (0.3%)	10 (0.3%)	16 (0.3%)	3 (0.3%)	10 (<0.1%)	3 (0.1%)	1 (<0.1%)	6 (0.1%)
Emergency vascular surgery (non-cardiac)*	2 (<0.1%)	1 (<0.1%)	1 (<0.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Pericardial tamponade*	3 (<0.1%)	2 (<0.1%)	1 (<0.1%)	0 (0%)	4 (<0.1%)	1 (<0.1%)	2 (<0.1%)	1 (<0.1%)
¹ *: Multiple-choice variable								
² n (%)								

Caution

The major complications ‘Emergency vascular surgery (non-cardiac)’ and ‘Pericardial tamponade’ are not available in form version V1.

6.4.12 Discharge medication after PCI

Table 25

Characteristic ¹	ACS				CCS			
	Overall N = 9'066 ²	University h. N = 2'982 ²	Public n-u h. N = 5'075 ²	Private h. N = 1'009 ²	Overall N = 11'235 ²	University h. N = 2'383 ²	Public n-u h. N = 4'793 ²	Private h. N = 4'059 ²
ASA*	8'802 (98%)	2'925 (99%)	4'923 (98%)	954 (95%)	10'504 (95%)	2'309 (97%)	4'533 (96%)	3'662 (92%)
Missing	71	24	39	8	149	10	67	72
P2Y12 inhibitor*	8'822 (98%)	2'921 (99%)	4'936 (98%)	965 (96%)	10'579 (95%)	2'329 (98%)	4'542 (96%)	3'708 (93%)
Clopidogrel	2'014 (23%)	547 (19%)	1'145 (23%)	322 (33%)	8'131 (77%)	1'663 (71%)	3'308 (73%)	3'160 (85%)
Prasugrel	2'487 (28%)	631 (22%)	1'584 (32%)	272 (28%)	1'085 (10%)	123 (5.3%)	608 (13%)	354 (9.5%)
Ticagrelor	4'203 (48%)	1'658 (57%)	2'177 (44%)	368 (38%)	1'234 (12%)	432 (19%)	612 (13%)	190 (5.1%)
Other	118 (1.3%)	85 (2.9%)	30 (0.6%)	3 (0.3%)	129 (1.2%)	111 (4.8%)	14 (0.3%)	4 (0.1%)
N/OAC*	797 (8.9%)	250 (8.5%)	459 (9.1%)	88 (8.8%)	1'284 (12%)	315 (13%)	562 (12%)	407 (10%)
Statin therapy	8'104 (95%)	2'461 (97%)	4'696 (93%)	947 (95%)	9'812 (92%)	1'924 (97%)	4'335 (92%)	3'553 (89%)
Missing	512	457	47	8	536	408	58	70
Low-intensity	460 (5.7%)	105 (4.3%)	249 (5.3%)	106 (11%)	1'135 (12%)	156 (8.1%)	372 (8.7%)	607 (17%)
High-intensity	7'617 (94%)	2'347 (96%)	4'430 (95%)	840 (89%)	8'589 (88%)	1'767 (92%)	3'887 (91%)	2'935 (83%)
Prescribed dual antiplatelet therapy	7'981 (89%)	2'663 (90%)	4'457 (89%)	861 (86%)	9'134 (82%)	2'005 (84%)	3'932 (83%)	3'197 (80%)
Missing	71	24	39	8	149	10	67	72
<1 month	22 (0.3%)	3 (0.1%)	15 (0.3%)	4 (0.5%)	47 (0.5%)	1 (<0.1%)	26 (0.7%)	20 (0.6%)
1 month	125 (1.6%)	55 (2.1%)	57 (1.3%)	13 (1.5%)	509 (5.8%)	139 (7.2%)	273 (7.4%)	97 (3.1%)
3 months	141 (1.8%)	23 (0.9%)	78 (1.8%)	40 (4.6%)	502 (5.7%)	64 (3.3%)	232 (6.3%)	206 (6.5%)
6 months	798 (10%)	180 (6.9%)	439 (10%)	179 (21%)	5'956 (68%)	1'181 (62%)	2'310 (63%)	2'465 (78%)
12 months	6'592 (84%)	2'338 (89%)	3'657 (84%)	597 (69%)	1'610 (18%)	506 (26%)	799 (22%)	305 (9.7%)
>12 months	170 (2.2%)	27 (1.0%)	115 (2.6%)	28 (3.3%)	144 (1.6%)	28 (1.5%)	50 (1.4%)	66 (2.1%)
Prescribed triple antiplatelet therapy	671 (7.5%)	228 (7.7%)	381 (7.6%)	62 (6.2%)	937 (8.5%)	271 (11%)	429 (9.1%)	237 (5.9%)
Missing	71	24	39	8	149	10	67	72
<1 week	518 (78%)	188 (82%)	289 (76%)	41 (66%)	647 (70%)	211 (78%)	306 (73%)	130 (55%)
1 month	118 (18%)	31 (14%)	78 (21%)	9 (15%)	185 (20%)	49 (18%)	87 (21%)	49 (21%)
3 months	7 (1.0%)	1 (0.4%)	5 (1.3%)	1 (1.6%)	16 (1.7%)	4 (1.5%)	9 (2.1%)	3 (1.3%)
6 months	25 (3.7%)	8 (3.5%)	6 (1.6%)	11 (18%)	80 (8.6%)	7 (2.6%)	20 (4.7%)	53 (23%)
¹ *: Multiple-choice variable								
² n (%)								

Note

Please note that in version V1 of the form, statin use is captured within the multiple-choice question “discharge medication.” This structure likely leads to underreporting of statin use. In version V2.0 of the form, statin use is specifically addressed as a separate question. However, since both versions are used concurrently across the registry, systematic bias is unavoidable. Therefore, any results on statin use must be interpreted with caution.

Note that for all multiple-choice variables in this table (‘ASA’, ‘P2Y12 inhibitor’, and ‘N/OAC’), the number of missing values is displayed only for the first variable, as it is the same for all.

6.5 PART III - Quality indicators (QI)

6.5.1 QI - Methods

Quality Indicators (QIs) provide a structured approach to evaluating healthcare performance by quantifying specific processes and outcomes. They are calculated as the ratio of a defined numerator to a denominator and expressed as a percentage.

The numerator includes all cases that meet the specified criteria, such as a documented process (e.g., radial access) or outcome (e.g., complication or death). The denominator consists of all cases in which the intervention of interest, such as coronary angiography and PCI or staged PCI, was performed, and relevant information about the process or outcome was available (i.e., not missing). While the information used to calculate the QIs presented here is mandatory, it may occasionally be missing due to the inclusion of incomplete, non-submitted records.

QIs are reported for each center providing denominator data. They are visualized by plotting the total number of cases (denominator) on the x-axis against the mean QI value for each department on the y-axis.

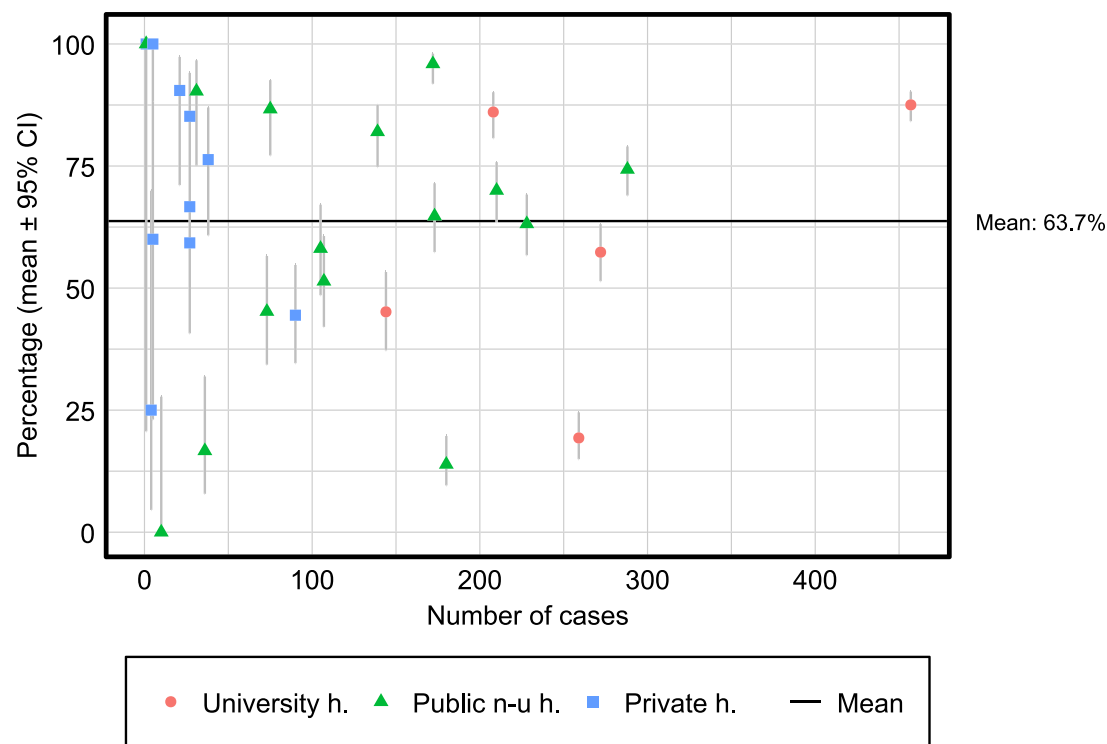
Process QIs measure adherence to specific procedural or care standards, such as the frequency of radial access. To provide a reliable estimate of the true mean based on observed data, 95% confidence intervals (CIs) are displayed. See e.g. [Figure 15](#).

Outcome QIs, on the other hand, assess clinical outcomes, such as the incidence of major complications. These indicators are presented using funnel plots, which include control limits at 95% and 99.8%. Centers exceeding the 99.8% control limit are generally considered statistical outliers, both positively and negatively. See e.g. [Figure 22](#).

6.5.2 Frequency of known LVEF in STEMI patients undergoing PCI

This process QI measures the proportion of STEMI patients undergoing PCI for whom the left ventricular ejection fraction (LVEF) is known. Note that LVEF is not assessed in staged PCI. 'Unknown' is defined as LVEF = 'Unknown' or missing. Please note that the response option 'Unknown' is only available in form version 2.0, which may introduce bias.

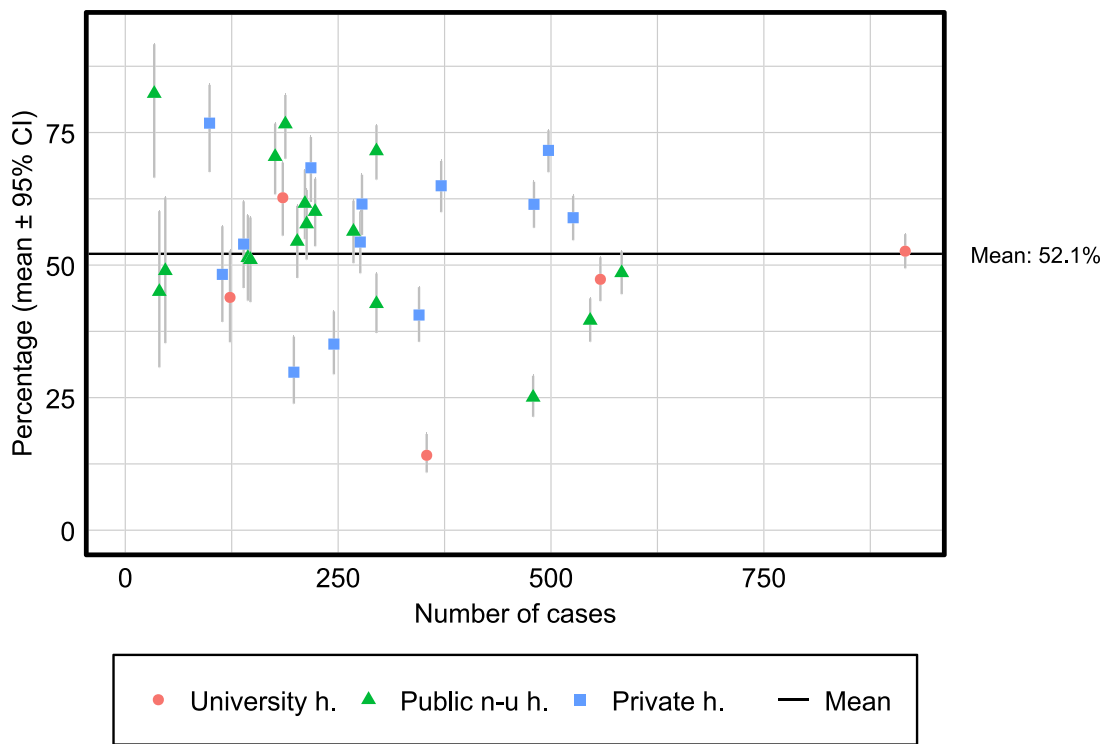
Figure 9: Frequency of known LVEF in STEMI patients undergoing PCI



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

This process QI measures the proportion of non-invasive tests indicative of CAD in patients undergoing PCI. The non-invasive tests include ‘CCTA with significant stenoses’, ‘Stress MRI with ischemia’, ‘Stress TTE with ischemia’, ‘TTE with hypokinesia’, ‘Nuclear test with ischemia’. Detailed methodology can be found in [Section 6.5.1](#).

Figure 10: Frequency of non-invasive tests indicative of CAD in patients undergoing PCI



6.5.4 Referral times

The following QI evaluate timely invasive management in acute coronary syndromes, distinguishing between NSTEMI and STEMI patients.

For NSTEMI, the process QI measures the proportion of patients who underwent an early invasive strategy, defined as coronary angiography performed within 24 hours of the first ECG.

For STEMI, the outcome QI assesses the proportion of patients who achieved a door-to-balloon time of less than 60 minutes or less than 90 minutes. Note that implausible values for door-to-balloon time (e.g., negative times, durations below 10 minutes, or exceeding 48 hours) as well as subacute-STEMI are excluded.

Refer to [Section 6.5.1](#) for detailed methodology.

Figure 11: Frequency of early invasive strategy (<24h) in NSTEMI patients undergoing PCI

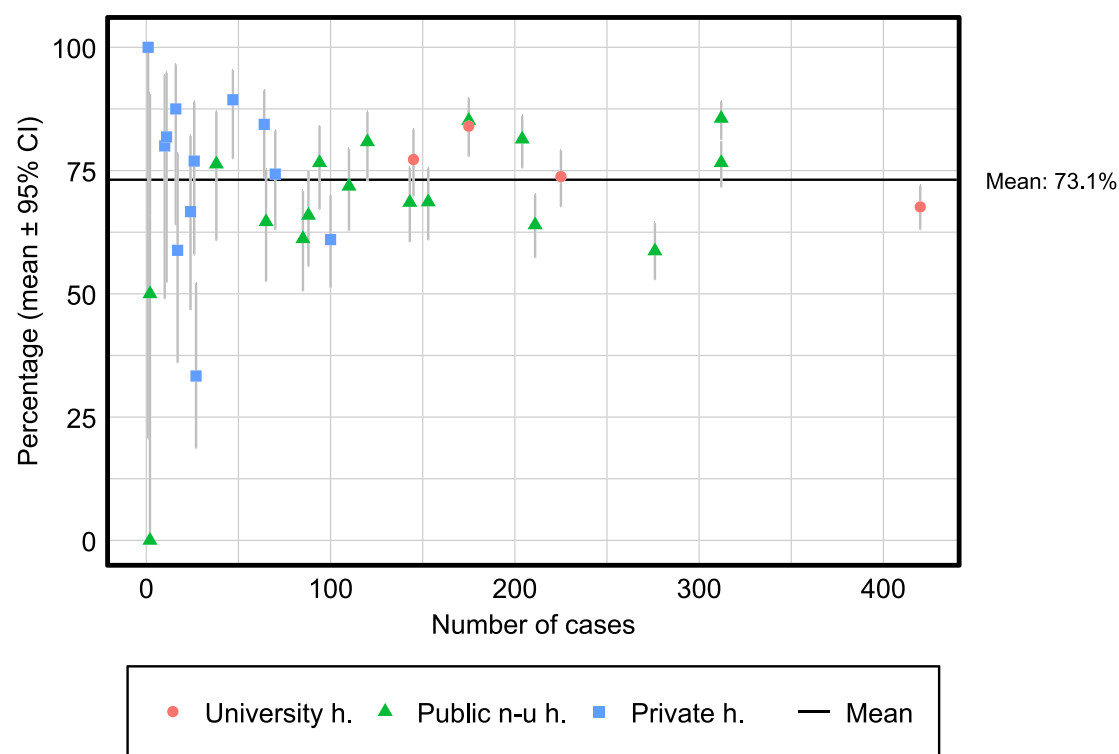
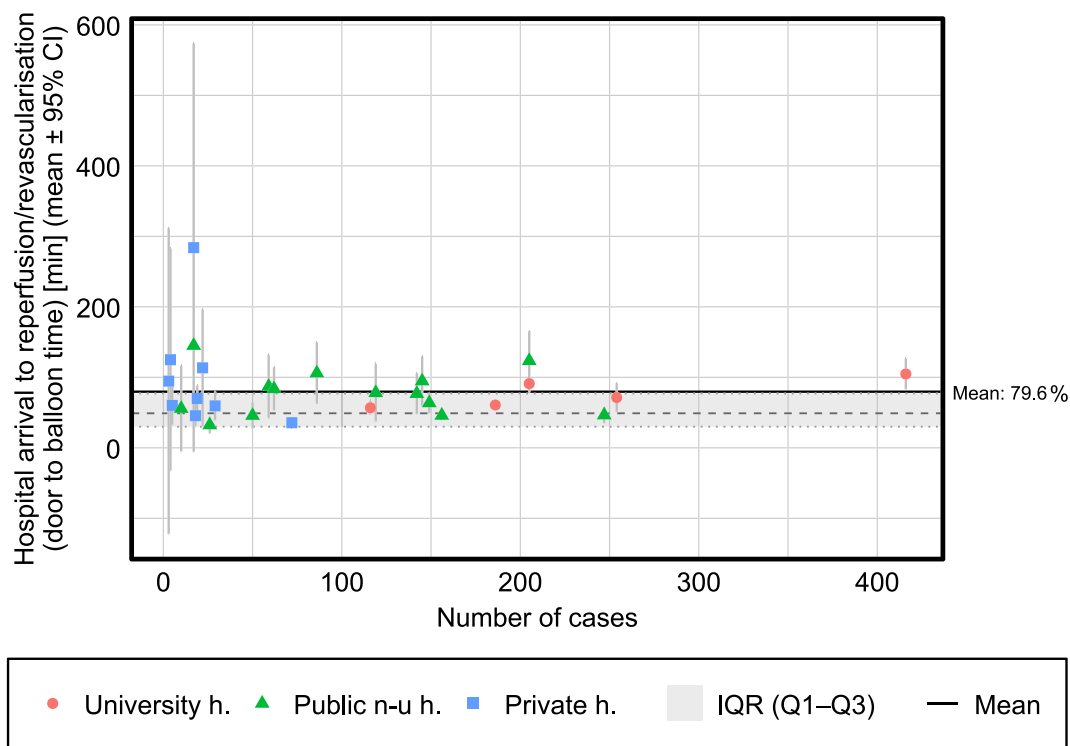


Figure 12: Mean door-to-balloon time in STEMI patients undergoing PCI



Caution

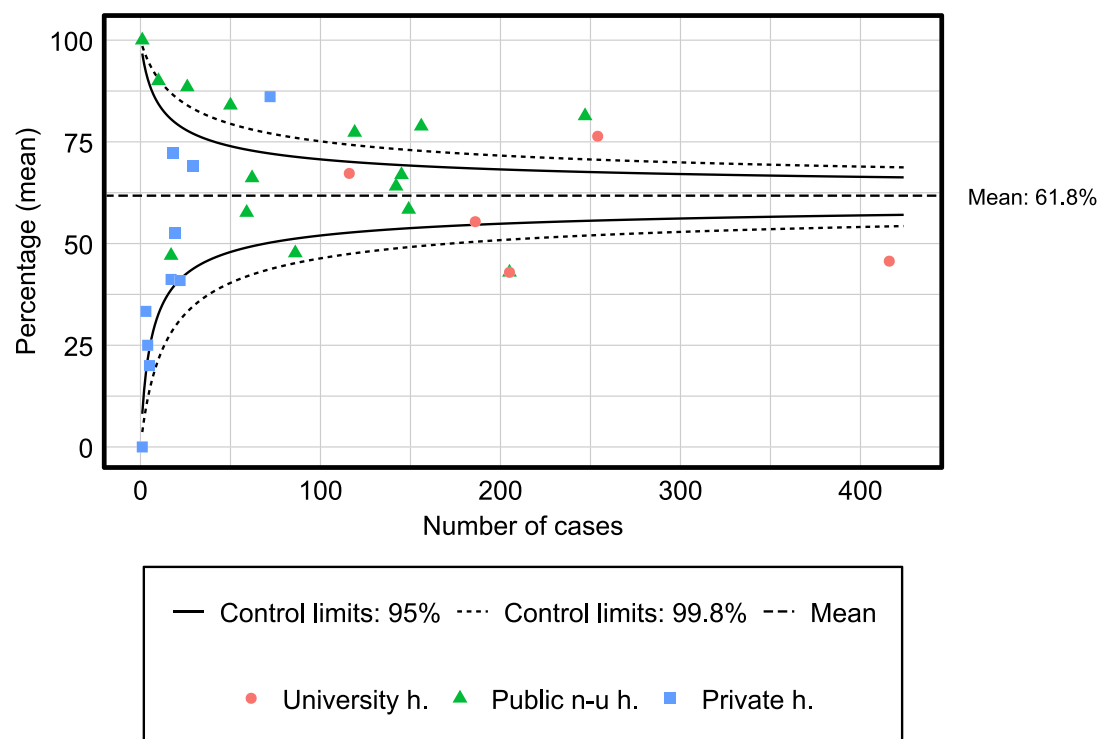
The figure above is a graphical representation of t-tests, examining whether the mean of each center significantly differs from the overall mean. The error bars represent the 95% confidence interval (CI) of the mean, assuming a normal distribution (which is one of the underlying assumptions for t-tests). 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.

Caution

371 subacute STEMI patients (symptoms-onset to hospitalization > 12h) were excluded from the above analysis.

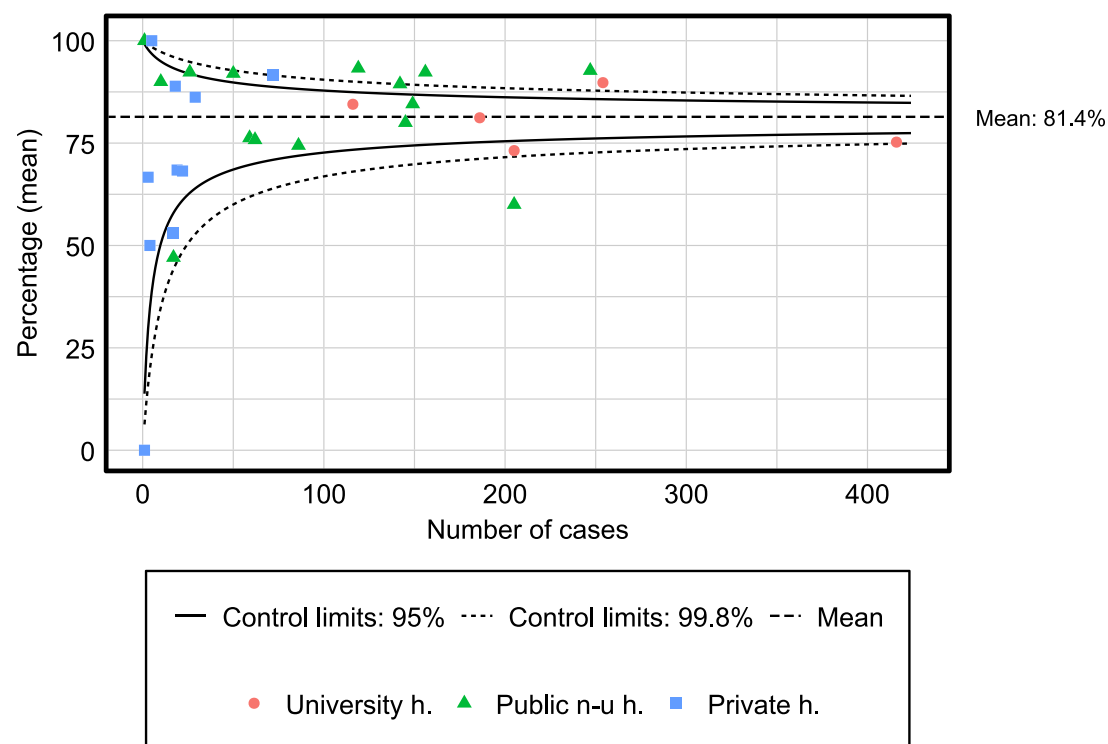
Figure 13: Frequency of door-to-balloon time below 60 minutes in STEMI patients undergoing PCI



Caution

371 subacute STEMI patients (symptoms-onset to hospitalization > 12h) were excluded from the above analysis.

Figure 14: Frequency of door-to-balloon time below 90 minutes in STEMI patients undergoing PCI



Caution

371 subacute STEMI patients (symptoms-onset to hospitalization > 12h) were excluded from the above analysis.

6.5.5 Radial access

Figure 15: Frequency of radial access in patients undergoing diagnostic CA

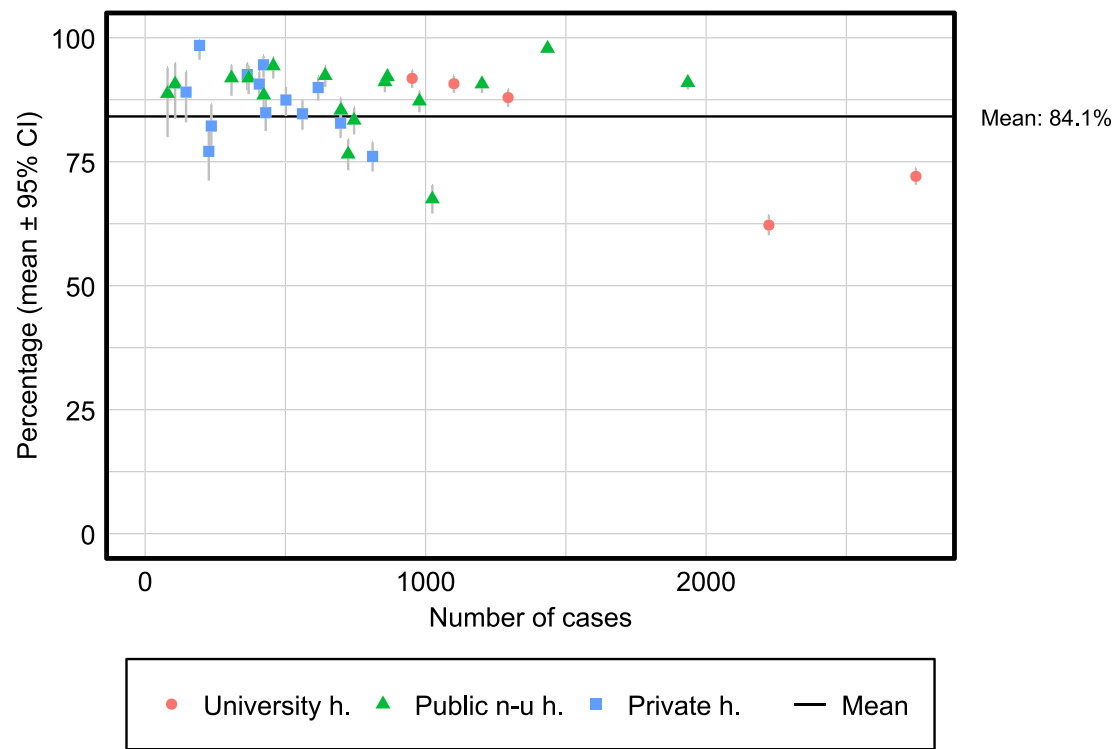


Figure 16: Frequency of radial access in patients undergoing PCI

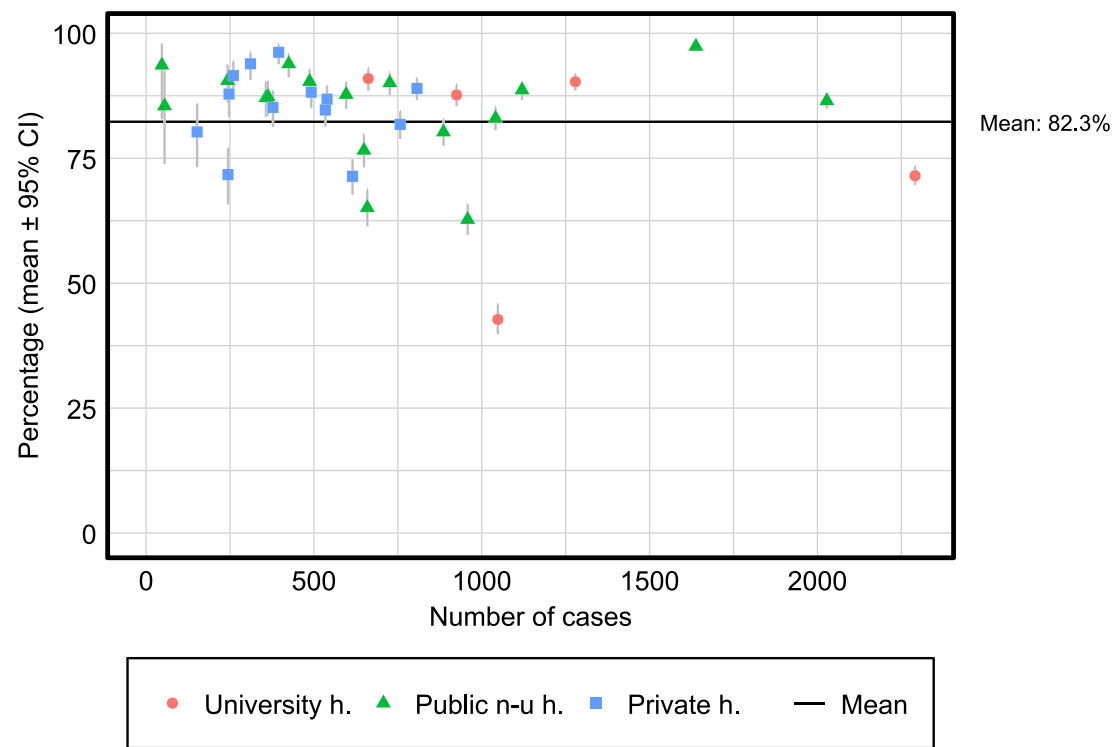
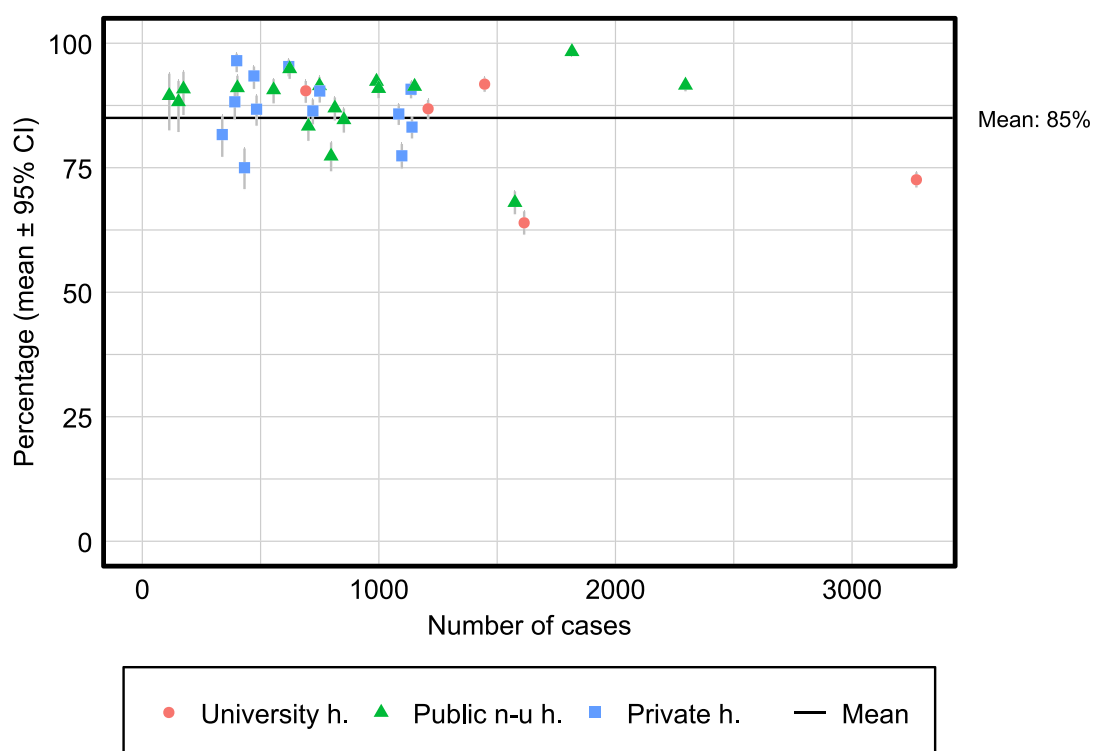


Figure 17: Frequency of radial access in CCS patients



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Figure 18: Frequency of radial access in unstable Angina pectoris and NSTEMI patients

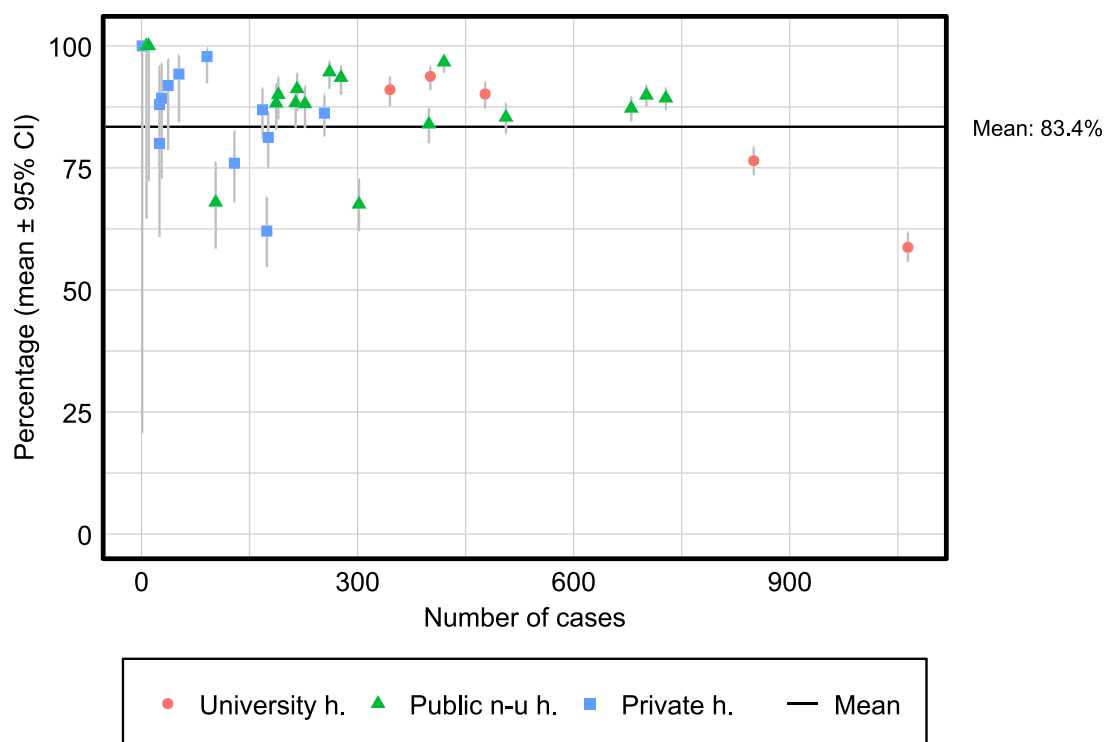
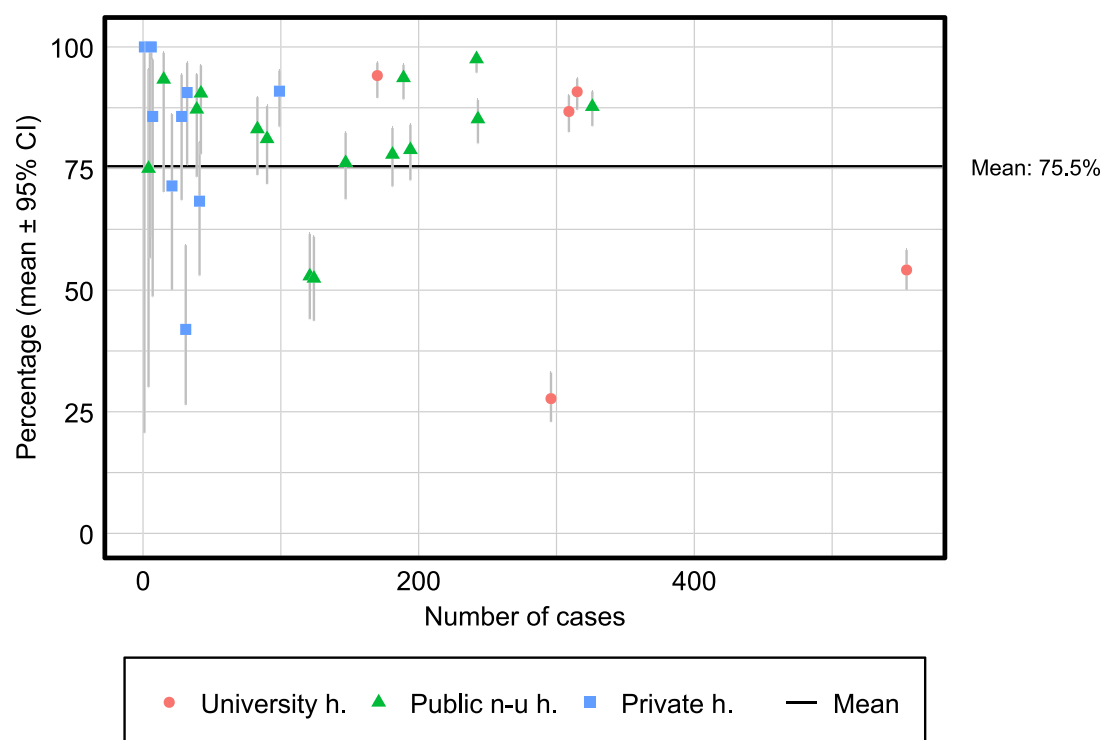


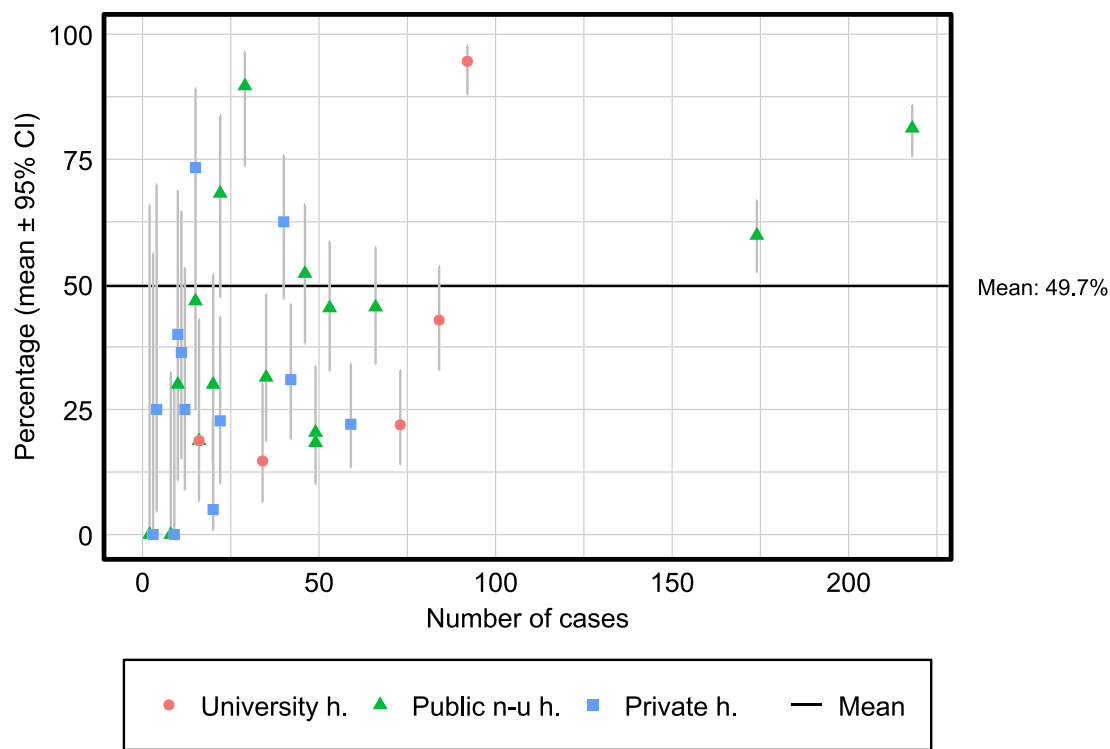
Figure 19: Frequency of radial access in STEMI patients



6.5.6 Use of intracoronary imaging in unprotected left main PCI

This process-QI measures the proportion of cases where intracoronary imaging (IVUS,OCT or both) was utilized during treatment of unprotected left main stenosis. See [Section 6.5.1](#) for details on the applied method.

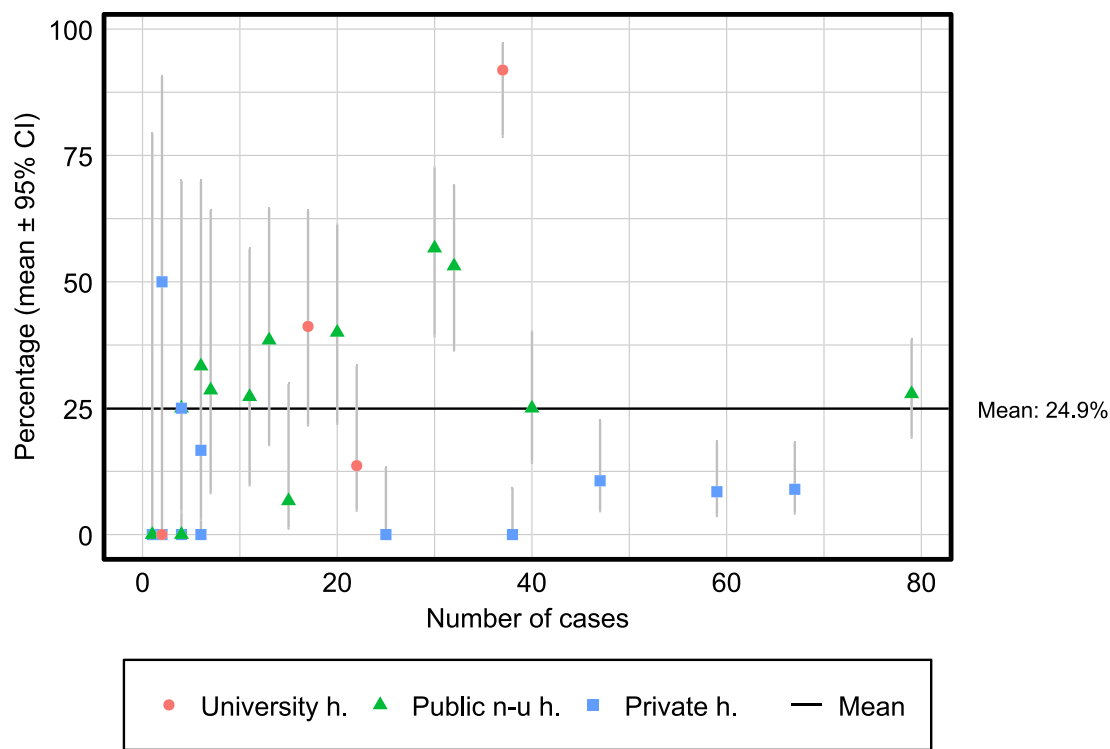
Figure 20: Frequency of intracoronary imaging in treated unprotected left main stenosis



6.5.7 Use of intracoronary imaging in 2-stent bifurcation PCI

This process-QI measures the proportion of cases in which intracoronary imaging (IVUS,OCT or both) was utilized during the treatment of bifurcation lesions using two stents. Refer to [Section 6.5.1](#) for detailed methodology.

Figure 21: Frequency of intracoronary imaging in bifurcation with 2 stents



6.5.8 Major complications occurring 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.

Caution

Version V2.0 of the form includes two new answer options for major complications: ‘Emergency vascular surgery (non-cardiac)’ and ‘Pericardial tamponade’. As a result, major complications may be underreported in Version V1, potentially introducing bias.

58 Figure 22: Frequency of major complications - overall

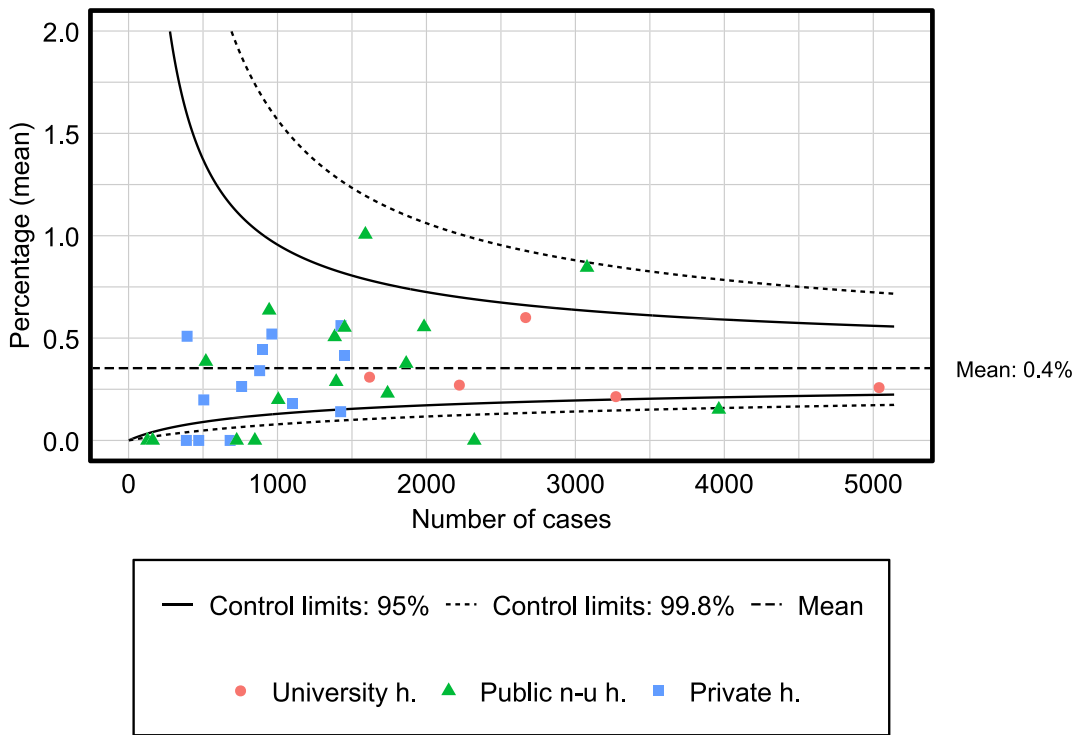


Figure 23: Frequency of major complication procedural death

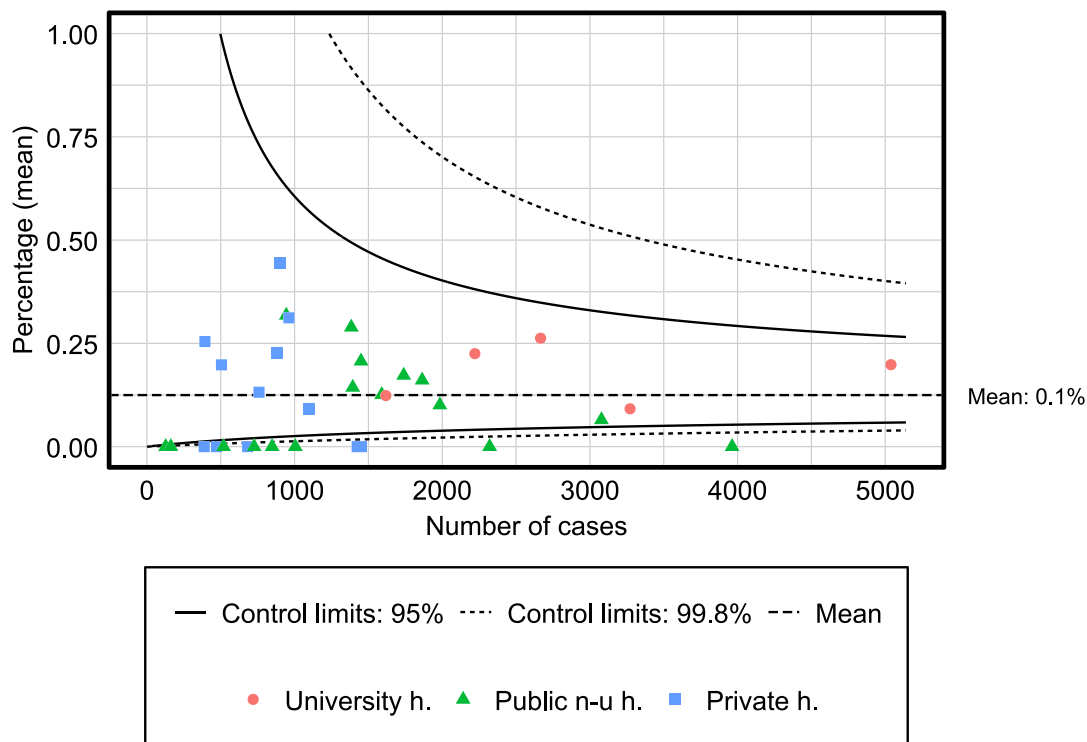


Figure 24: Frequency of major complication clinically overt stroke

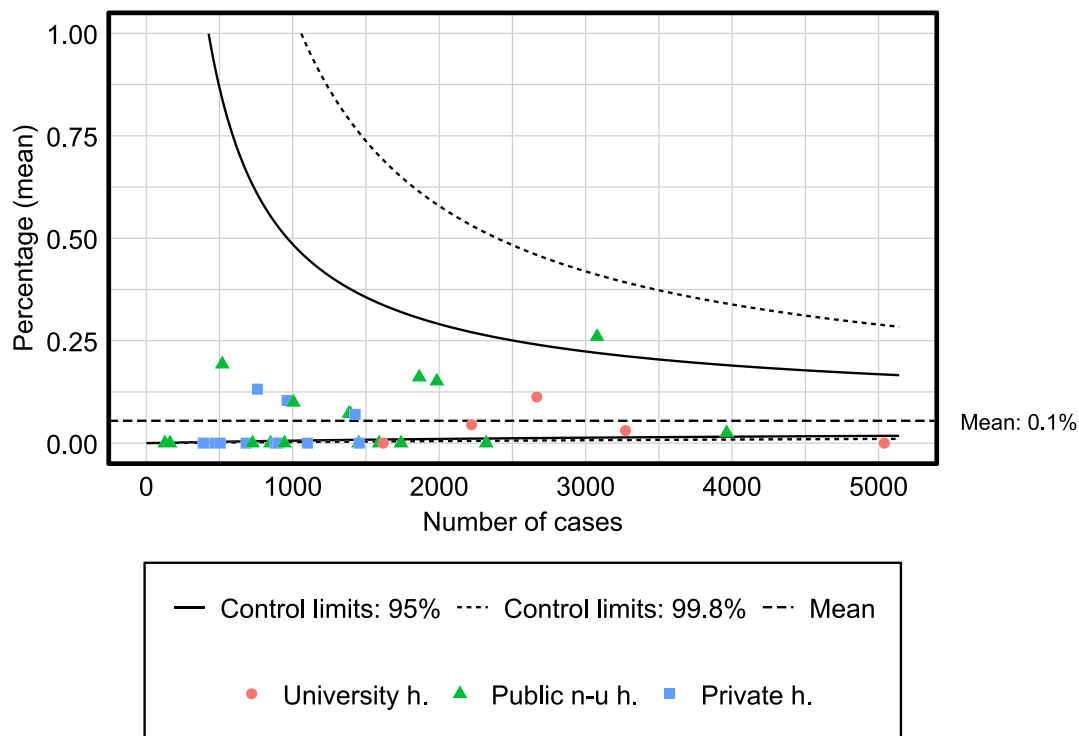


Figure 25: Frequency of major complication emergency open heart surgery

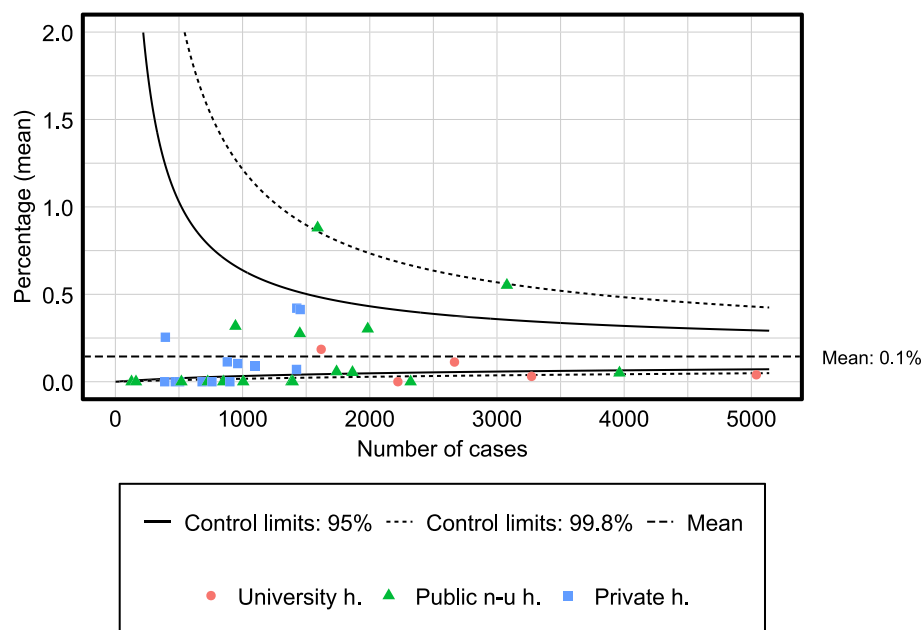
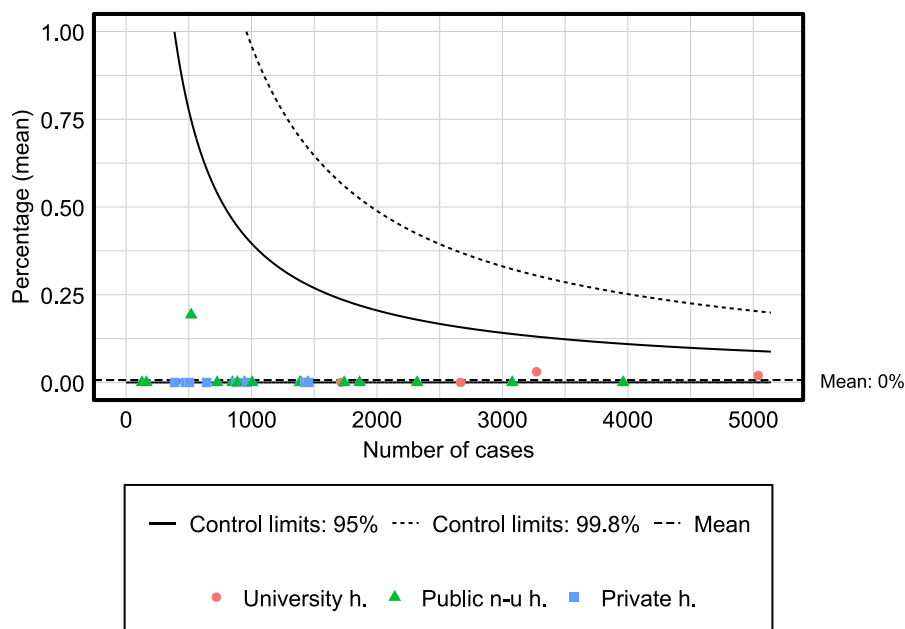


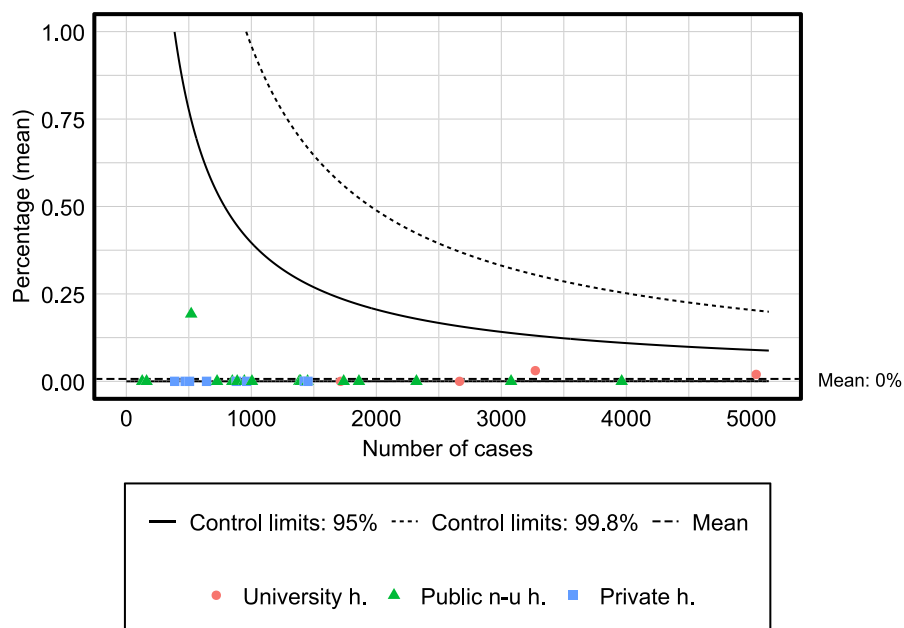
Figure 26: Frequency of major complication emergency vascular surgery (non-cardiac)



Caution

Please note that only the new form version V2.0 contains the answer option 'Emergency vascular surgery (non-cardiac)'.

Figure 27: Frequency of major complication pericardial tamponade



Caution

Please note that only the new form version V2.0 contains the answer option 'Pericardial tamponade'.

Note

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

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

This process QI measures the proportion of PCI patients (individually for CCS and ACS) discharged with both a potent P2Y12 inhibitor (prasugrel or ticagrelor) and a NOAC, as per ESC guidelines on contraindications. See [Section 6.5.1](#) for details on the applied method.

Figure 28: Frequency of potent P2Y12 inhibitor with N/OAC use in CCS patients

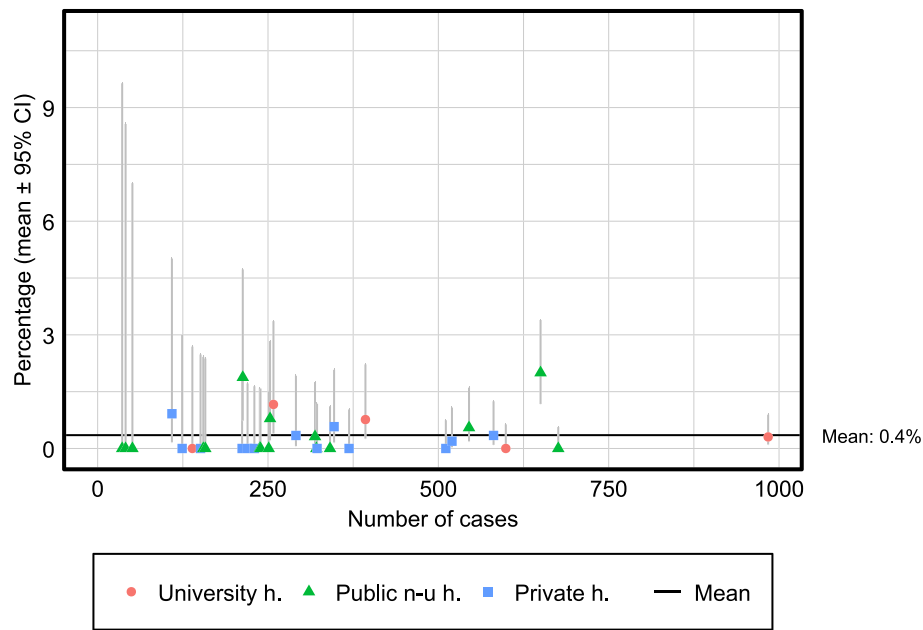
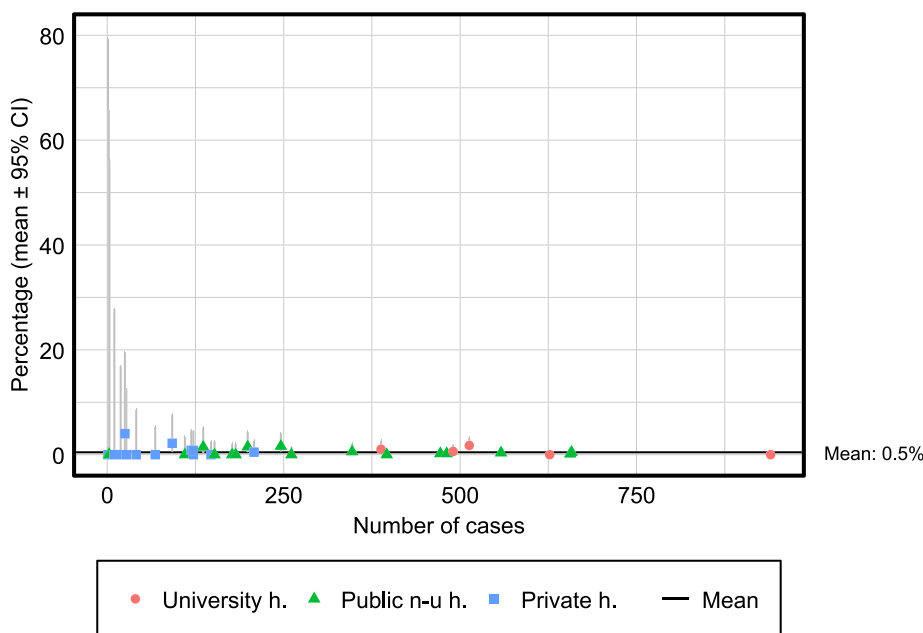


Figure 29: Frequency of potent P2Y12 inhibitor with N/OAC use in ACS

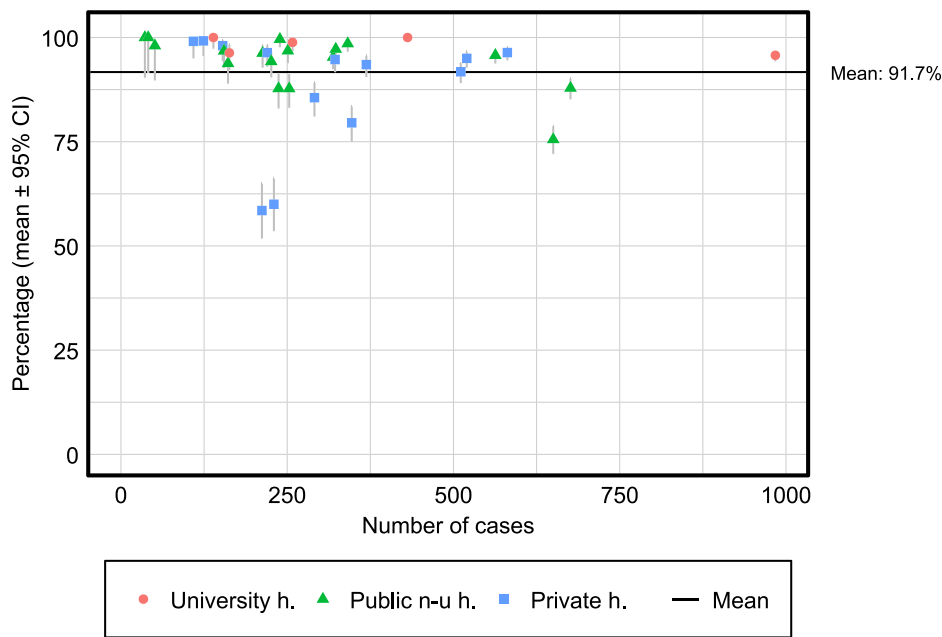


6.5.10 Patients discharged on statins in CCS

Caution

In version V1 of the form, statin use is captured within the multiple-choice question “discharge medication.” This structure likely leads to underreporting of statin use. In version V2.0 of the form, statin use is specifically addressed as a separate question. However, since both versions are used concurrently across the registry, systematic bias is unavoidable. Therefore, any results on statin use must be interpreted with caution.

Figure 30: Percentage of patients discharged on statins: CCS



7 Appendix

7.1 Corrigendum: PCI-specific procedural characteristics of patients undergoing PCI (2024 Data)

In the 2024 report, a coding error affected the 'drug-eluting balloon only' category. A corrected version of this table based on 2024 data is shown below in [Table 26](#). Please note that this data was derived from a current data export (27.05.2026); therefore, the number of cases differs slightly from those reported in the 2024 report.

Caution

Not available in form version V1:

- The variable 'PCI aborted'
- The answer option 'High-pressure balloon' for calcium modification

Table 26

Characteristic	Overall, N = 18'817 ¹	University h., N = 5'957 ¹	Public n-u h., N = 8'068 ¹	Private h., N = 4'792 ¹
PCI aborted	412 (2.8%)	148 (2.8%)	215 (3.5%)	49 (1.5%)
Missing	4'276	733	1'931	1'612
Number of treated lesions				
Mean (SD)	1.61 (0.89)	1.59 (0.89)	1.60 (0.89)	1.63 (0.88)
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	787	231	335	221
Number of treated vessels				
Mean (SD)	1.23 (0.50)	1.22 (0.51)	1.22 (0.50)	1.24 (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	675	202	329	144
Unprotected left main stenosis treated	978 (5.3%)	324 (5.6%)	445 (5.7%)	209 (4.4%)
Missing	437	148	240	49
Number of implanted stents				
Mean (SD)	1.41 (1.01)	1.35 (0.95)	1.39 (1.01)	1.53 (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	424	148	227	49
Number of used drug-eluting balloons				
Mean (SD)	0.33 (0.69)	0.38 (0.69)	0.35 (0.74)	0.24 (0.60)
Median (IQR)	0.00 (0.00, 0.00)	0.00 (0.00, 1.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
Missing	427	148	230	49
Stent only	13'352 (73%)	3'985 (69%)	5'644 (72%)	3'723 (78%)
Missing	427	148	230	49
Drug-eluting balloon only	1'869 (10%)	667 (11%)	866 (11%)	336 (7.1%)
Missing	427	148	230	49
Mixed Stent and DEB	2'505 (14%)	964 (17%)	1'031 (13%)	510 (11%)
Missing	427	148	230	49
Stent failure intervention*	1'552 (8.4%)	378 (6.5%)	683 (8.7%)	491 (10%)
Missing	433	148	236	49
Restenosis*	1'430 (7.8%)	338 (5.8%)	620 (7.9%)	472 (10.0%)
Stent thrombosis*	139 (0.8%)	44 (0.8%)	73 (0.9%)	22 (0.5%)
CTO procedure	1'072 (5.7%)	366 (6.1%)	371 (4.6%)	335 (7.0%)
Missing	14	0	14	0
CTO procedure - specification				
Antegrade	958 (89%)	314 (86%)	331 (89%)	313 (93%)
Retrograde	114 (11%)	52 (14%)	40 (11%)	22 (6.6%)
Calcium modification*	3'153 (17%)	601 (10%)	1'861 (24%)	691 (15%)
Missing	431	148	234	49
Cutting balloon*	1'190 (6.5%)	243 (4.2%)	754 (9.6%)	193 (4.1%)
Scoring balloon*	423 (2.3%)	63 (1.1%)	270 (3.4%)	90 (1.9%)
Rotablation*	258 (1.4%)	83 (1.4%)	92 (1.2%)	83 (1.7%)
Lithotripsy*	725 (3.9%)	245 (4.2%)	299 (3.8%)	181 (3.8%)
Orbital atherectomy*	55 (0.3%)	6 (0.1%)	35 (0.4%)	14 (0.3%)
High-pressure balloon*	1'316 (9.3%)	47 (0.9%)	1'038 (18%)	231 (7.4%)
Bifurcation	4'050 (22%)	925 (16%)	1'853 (24%)	1'272 (27%)
Missing	430	148	233	49
Bifurcation - specification				
1 stent	3'565 (88%)	821 (89%)	1'688 (91%)	1'056 (83%)
2 stents	485 (12%)	104 (11%)	165 (8.9%)	216 (17%)

¹ n (%)