Cath Lab and Interventional Survey (CLICS)

Contents

Chapter 1

1.1 Cohort characteristics

Table 1: Basline charcteristics (All patients)

	Overall
n	3226
Age (mean (SD))	67.59 (12.45)
Age group (%)	
50 <= Age < 70	1454 (45.2)
Age < 50	246 (7.6)
Age >= 70	1520 (47.2)
gender = Male (%)	2299 (71.3)
Diabetes = Yes (%)	1131 (41.3)
COPD = Yes (%)	203 (7.4)
Chronic renal failure = Yes (%)	293 (10.7)
Chronic dialysis = Yes (%)	52 (1.6)
Prior stroke or TIA = Yes (%)	199 (7.3)
Prior PCI = Yes (%)	1018 (37.2)
Prior CABG or valve surgey = Yes (%)	226 (8.3)
Heart failure (%)	
Yes	429 (15.7)
No	1925 (70.4)
Unknown	380 (13.9)
% LV ejection fraction (mean (SD))	50.58 (11.77)
Atrial fibrillation = Yes (%)	239 (8.7)

Table 2: Procedure type by center

medical center	Coronary	Structural - Valvular	Structural - non valvular	Peripheral	Other
1	175	6	2	4	7
2	169	0	3	0	3
3	75	1	0	0	2
4	3	0	0	0	0
5	94	1	0	0	0
6	22	0	0	0	0
7	67	0	0	0	2
8	70	0	0	0	0
9	220	36	1	0	0
10	34	7	2	0	22
11	68	0	0	0	1
12	253	41	8	0	19
13	1	0	0	0	0
14	75	0	0	0	0
15	179	27	3	0	46
16	37	0	0	0	0
17	227	7	2	1	10
18	118	0	0	0	1
19	79	0	0	0	0
20	81	7	0	0	0
21	77	7	1	0	6
22	36	0	0	0	1
23	206	5	1	0	7
24	153	30	5	0	81
25	206	34	10	13	36
26	5	0	0	0	0
27	35	0	0	0	0
Total	**2765**	**209**	**38**	**18**	**244**

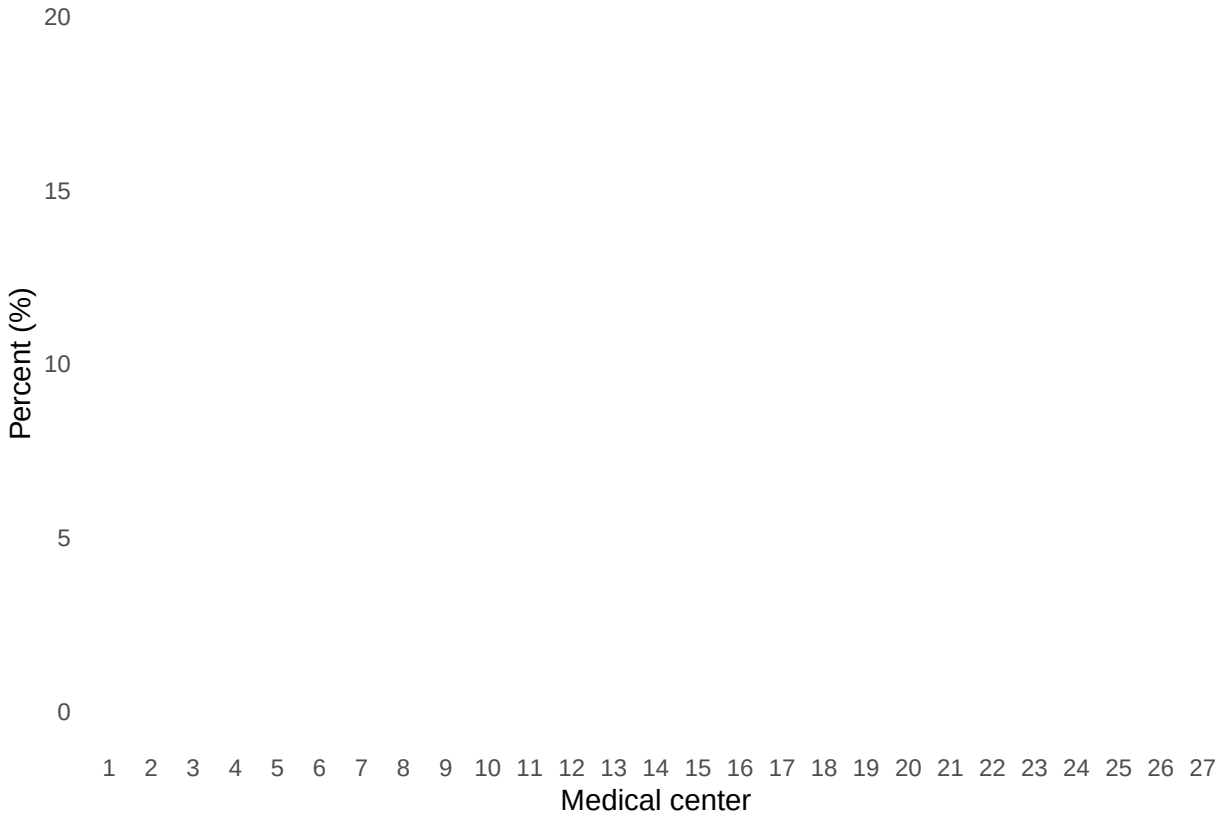

Figure 1: Percentage of total procedures by center

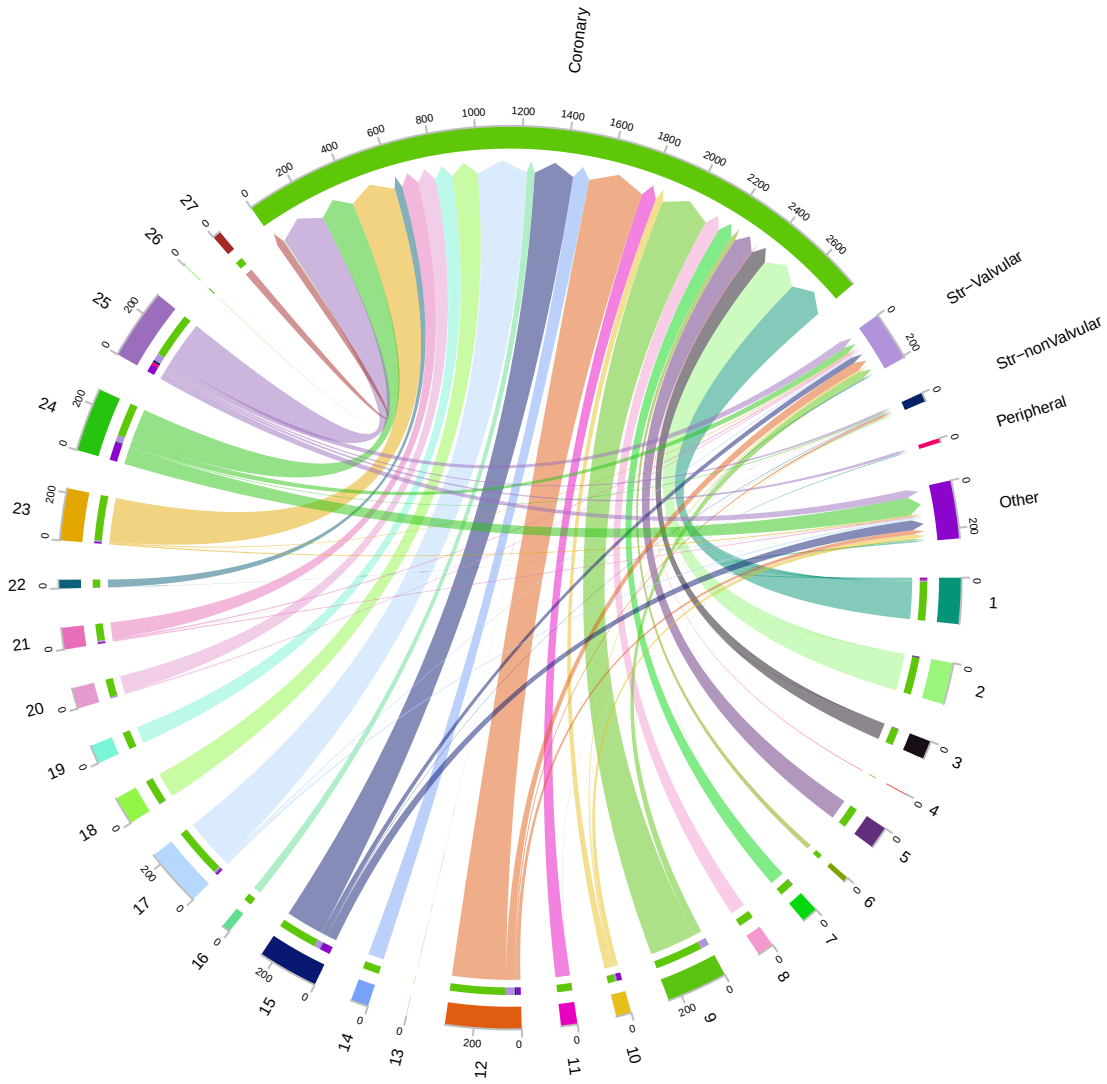

Figure 2: Patients per procedure type by center

1.2 Coronary procedures

Table 3: Type of coronary procedure distribution

Indication for procedure	n	%
Diagnostic angiography only (no PCI done)	1279	46.26
Percutaneous coronary intervention (PCI)	1477	53.42
NA	6	0.22
Total	**2765**	**100.00**

Note:

One fitulae case, one missing data case

Table 4: Coronary procedure by center

medical center	Diagnostic angiography only (no PCI done)	Percutaneous coronary intervention (PCI)	Coronary fistulae closure	Total
1	62% (108)	38% (67)	0% (0)	**6% (175)**
2	32% (54)	68% (115)	0% (0)	**6% (169)**
3	36% (27)	64% (48)	0% (0)	**3% (75)**
4	33% (1)	0% (0)	0% (0)	**0% (3)**
5	39% (37)	61% (57)	0% (0)	**3% (94)**
6	73% (16)	9% (2)	14% (3)	**1% (22)**
7	36% (24)	64% (43)	0% (0)	**2% (67)**
8	33% (23)	67% (47)	0% (0)	**3% (70)**
9	59% (130)	41% (90)	0% (0)	**8% (220)**
10	38% (13)	62% (21)	0% (0)	**1% (34)**
11	40% (27)	57% (39)	0% (0)	**2% (68)**
12	50% (126)	50% (126)	0% (0)	**9% (253)**
13	100% (1)	0% (0)	0% (0)	**0% (1)**
14	47% (35)	53% (40)	0% (0)	**3% (75)**
15	42% (75)	58% (104)	0% (0)	**6% (179)**
16	49% (18)	51% (19)	0% (0)	**1% (37)**
17	45% (103)	55% (124)	0% (0)	**8% (227)**
18	43% (51)	57% (67)	0% (0)	**4% (118)**
19	48% (38)	52% (41)	0% (0)	**3% (79)**
20	54% (44)	46% (37)	0% (0)	**3% (81)**
21	60% (46)	40% (31)	0% (0)	**3% (77)**
22	58% (21)	42% (15)	0% (0)	**1% (36)**
23	39% (80)	61% (126)	0% (0)	**7% (206)**
24	45% (69)	55% (84)	0% (0)	**6% (153)**
25	48% (98)	52% (108)	0% (0)	**7% (206)**
26	60% (3)	40% (2)	0% (0)	**0% (5)**
27	31% (11)	69% (24)	0% (0)	**1% (35)**
Total	**46% (1,279)**	**53% (1,477)**	**0% (3)**	**100% (2,765)**

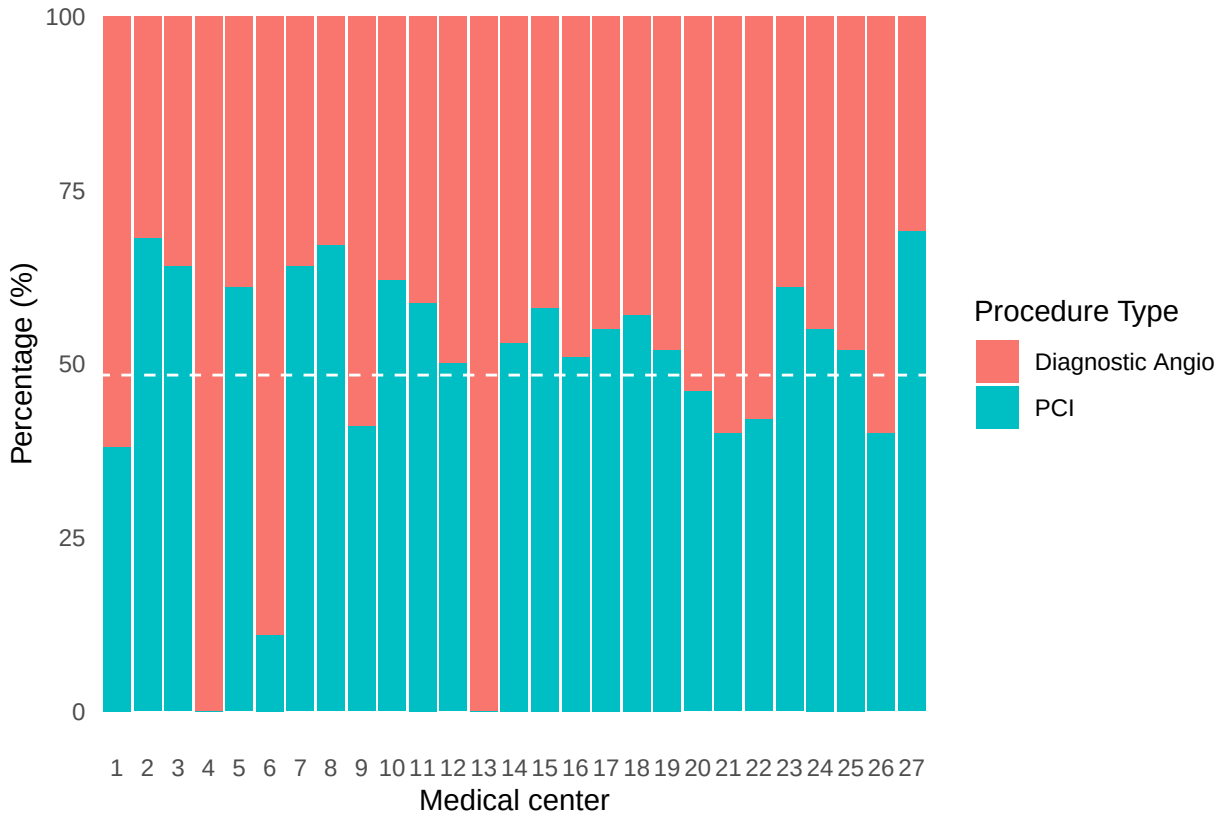

Figure 3: Ratio of diagnostic versus PCI procedures according to center

1.3 Valvular interventions

Table 5: Valvular intervention distribution

Type of valvular intervention	n	%
Aortic - Balloon valvuloplasty	5	2.39
Aortic - Transcatheter valve implantation (TAVI)	170	81.34
Mitral - Balloon valvuloplasty	3	1.44
Mitral - Transcatheter valve implantation (TMVI)	3	1.44
Mitral - Mitral clip	25	11.96
Mitral - Other interventions	0	0.00
Pulmonic - Transcatheter valve implantation	1	0.48
Tricuspid - Transcatheter valve implantation	0	0.00
Tricuspid - Other interventions	1	0.48
NA	1	0.48
Total	**209**	**100.00**

Table 6: Valvular intervention by center

	Aortic	Mitral	Pulmonic	T

medical center	Balloon valvulo-plasty	Transcatheter valve im-plantation (TAVI)	Balloon valvulo-plasty	Transcatheter valve im-plantation (TMVI)	Mitral clip	Other in-terventions	Transcatheter valve im-plantation	Transcath valve im plantatio
1	1	4	1	0	0	0	0	0
3	1	0	0	0	0	0	0	0
9	0	35	0	1	0	0	0	0
10	0	7	0	0	0	0	0	0
12	0	39	0	0	2	0	0	0
15	0	20	0	0	6	0	1	0
17	0	7	0	0	0	0	0	0
20	0	7	0	0	0	0	0	0
21	1	4	0	0	2	0	0	0
23	0	4	0	0	1	0	0	0
24	1	18	1	1	9	0	0	0
25	1	25	1	1	5	0	0	0
Total	**5**	**170**	**3**	**3**	**25**	**0**	**1**	**0**

1.4 Structural, non-valvular procedures

Table 7: Structural non valvular intervention distribution

intervention	n	%
PFO closure	17	44.74
LAAO	13	34.21
ASD closure	2	5.26
Mitral PVL closure	1	2.63
VSD closure	1	2.63
Other structural non valvular intervention	4	10.53
Total	**38**	**100.00**

Note:
PFO - Patent foramen ovale
LAAO - Left atrial appendage occlusion
ASD - Atrial septal defect
VSD - Ventricular septal defect
PVL - Paravalvular leak

Table 8: Structural non valvular intervention by center

Medical center	LAAO	PFO closure	ASD closure	VSD closure	Mitral PVL closure	Aortic PVL closure	NULL	n
1	0	2	0	0	0	0	0	2
2	0	2	0	1	0	0	0	3
9	0	1	0	0	0	0	0	1
10	0	1	0	0	1	0	0	2
12	2	2	1	0	0	0	3	5
15	2	0	1	0	0	0	0	3
17	1	1	0	0	0	0	0	2
23	1	0	0	0	0	0	0	1
24	1	4	0	0	0	0	0	5
25	6	4	0	0	0	0	0	10
Total	**13**	**17**	**2**	**1**	**1**	**0**	**3**	**34**

Note:
PFO - Patent foramen ovale
LAAO - Left atrial appendage occlusion
ASD - Atrial septal defect
VSD - Ventricular septal defect
PVL - Paravalvular leak

1.5 Peripheral procedures

Table 9: Peripheral procedure distribution

	n	%
Carotid - diagnostic	2	11.11
Carotid - intervention	11	61.11
Subclavian intervention	1	5.56
Ilio-femoral - diagnostic	3	16.67
Ilio-femoral - intervention	0	0.00
Renal - diagnostic	1	5.56
Renal - intervention	0	0.00
Renal nerve denervation	0	0.00
Other	0	0.00
Total	**18**	**100.00**

Table 10: Peripheral procedure type by center

medical center	Carotid - diagnostic	Carotid - intervention	Subclavian intervention	Ilio-femoral - diagnostic	Ilio-femoral - intervention	Renal - diagnostic	Ren interve
1	0	0	0	3	0	1	0
17	0	0	1	0	0	0	0
25	2	11	0	0	0	0	0
Total	**2**	**11**	**1**	**3**	**0**	**1**	**0**

1.6 Other procedures

Table 11: Table 6: Other procedure distribution

	n	%
Right heart study	98	36.5671642
Myocardial biopsy	33	12.3134328
Pulmonary artery intervention	5	1.8656716
Coronary sinus reducer	2	0.7462687
Heart failure interventions (inter-atrial shunt, PAP monitor, etc.)	0	0.0000000
IABP insertion	11	4.1044776
Impella insertion	2	0.7462687
ECMO	2	0.7462687
Pericardiocentesis	13	4.8507463
Mechanical valve fluoroscopy	5	1.8656716
Temporary pacemaker	37	13.8059701
Other	60	22.3880597
Total	**268**	**100.0000000**

Table 12: Other procedure types by ce

medical center	Right heart study	Myocardial biopsy	Pulmonary artery intervention	Coronary sinus reducer	Heart failure interventions (inter-atrial shunt, PAP monitor, etc.)	| IABP insertion	| Impella insertion	| ECMO
1	3	0	0	0	0	0	0	0
2	0	0	0	0	0	1	2	0
3	1	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	1	0	0
8	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0
10	21	3	0	0	0	0	0	0
11	1	0	0	0	0	0	0	0
12	4	2	0	2	0	1	0	2
13	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0
15	36	13	0	0	0	4	0	0
16	0	0	0	0	0	0	0	0
17	7	0	1	0	0	1	0	0
18	1	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0
21	5	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	2	0	0	0	0	1	0	0
24	0	0	0	0	0	2	0	0
25	17	15	3	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
Total	**98**	**33**	**5**	**2**	**0**	**11**	**2**	**2**

Note:

* inter-atrial shunt, PAP monitor, etc.

Chapter 2 - Coronary procedures

2.1 Procedure indication and time of procedure

Table 13: Indication for procedure distribution

Indication for procedure	n	%
Non STEMI	666	24.09
Stable angina	548	19.82
Unstable angina (troponin negative ACS)	511	18.48
STEMI	317	11.46
Planned PCI (Staged PCI, after Heart-team discussion etc.)	169	6.11
Heart failure symptoms	101	3.65
Diagnostic cath before structural percutaneous intervention (e.g. TAVI)	95	3.44
Diagnostic cath before cardiac surgery	52	1.88
STEMI - Late arrival (>12 hrs)	32	1.16
Pre / Post organ transplant	21	0.76
Out of hospital sudden death	8	0.29
LBBB of unknown age	1	0.04
Other	218	7.88
Missing	26	0.94
Total	**2765**	**100.00**

Table 14: Procedure time distribution (All coronary procedures)

Time of procedure	n	%
Regular working hours	2386	86.29
Off-working hours / weekend	370	13.38
Missing	9	0.33
Total	**2765**	**100.00**

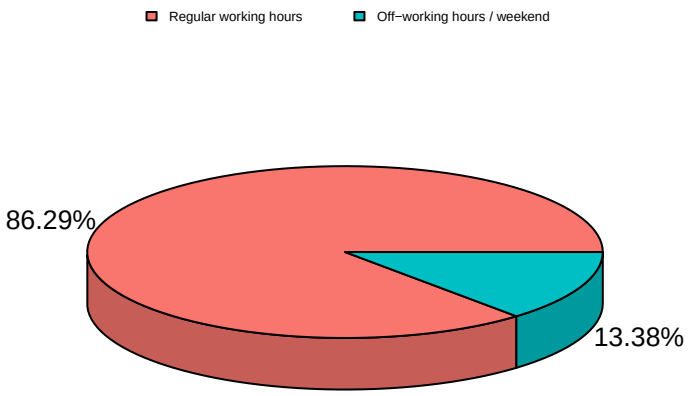

Figure 4: Procedure time (All coronary procedures)

Table 15: Procedure Time among Stable angina patients

Time of procedure	n	%
Regular working hours	501	91.42
Off-working hours / weekend	47	8.58
Total	**548**	**100.00**

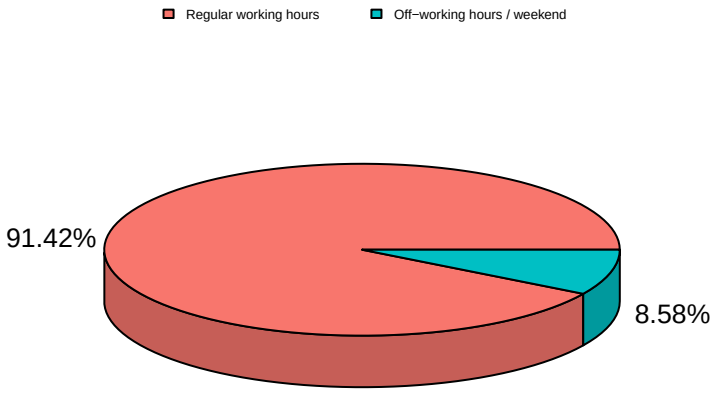

Figure 5: Procedure time (Stable angina patients)

Table 16: Procedure Time among urgent patients*

Time of procedure	n	%
Regular working hours	1278	83.26
Off-working hours / weekend	255	16.61
Missing	2	0.13
Total	**1535**	**100.00**

Note:
urgent patients = patients with one of the following indication: Unstable angina (troponin negative ACS)/ Non STEMI/ STEMI/ STEMI - Late arrival (>12 hrs)/ LBBB of unknown age/ Out of hospital sudden death

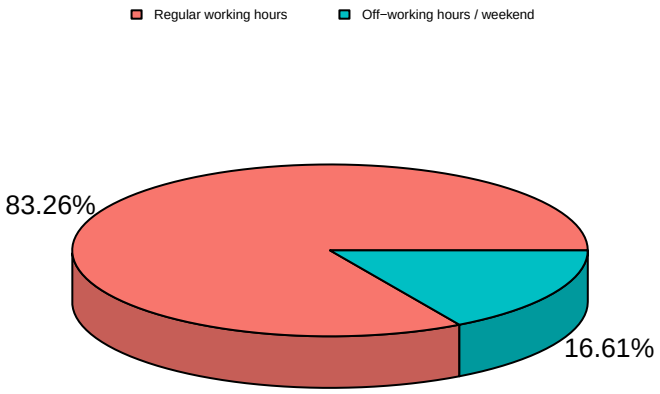

Figure 6: Procedure time (Urgent patients)

Table 17: fig4c: Procedure Time among primary PCI patients

Time of procedure	n	%
Regular working hours	121	38.17
Off-working hours / weekend	195	61.51
NA	1	0.32
Total	**317**	**100.00**

2.2 Arterial access and hemostasis

Table 18: Arterial access among Coronary Procedures

Arterial access	n	%
Right radial artery	2250	80.50
Left radial artery	292	10.45
Femoral artery	217	7.76
Brachial artery	6	0.21
Planned dual arterial access	3	0.11
Other	27	0.97
Total	**2795**	**100.00**

Table 19: Arterial access by center

Medical center	Radial artery	Femoral artery	Other	n	%
1	169 (96.57)	5 (2.86)	1 (0.57)	175	6.27
2	151 (85.8)	25 (14.2)	0 (0)	176	6.30
3	64 (90.14)	5 (7.04)	2 (2.82)	71	2.54
4	1 (100)	0 (0)	0 (0)	1	0.04
5	85 (87.63)	12 (12.37)	0 (0)	97	3.47
6	6 (85.71)	0 (0)	1 (14.29)	7	0.25
7	63 (95.45)	3 (4.55)	0 (0)	66	2.36
8	64 (91.43)	6 (8.57)	0 (0)	70	2.51
9	218 (99.09)	1 (0.45)	1 (0.45)	220	7.88
10	29 (82.86)	6 (17.14)	0 (0)	35	1.25
11	62 (91.18)	4 (5.88)	2 (2.94)	68	2.44
12	235 (92.52)	16 (6.3)	3 (1.18)	254	9.10
13	1 (100)	0 (0)	0 (0)	1	0.04
14	66 (88)	8 (10.67)	1 (1.33)	75	2.69
15	169 (87.11)	18 (9.28)	7 (3.61)	194	6.95
16	34 (91.89)	2 (5.41)	1 (2.7)	37	1.33
17	213 (91.42)	15 (6.44)	5 (2.15)	233	8.35
18	111 (93.28)	8 (6.72)	0 (0)	119	4.26
19	79 (100)	0 (0)	0 (0)	79	2.83
20	75 (88.24)	10 (11.76)	0 (0)	85	3.04
21	65 (84.42)	8 (10.39)	4 (5.19)	77	2.76
22	36 (94.74)	2 (5.26)	0 (0)	38	1.36
23	182 (87.08)	27 (12.92)	0 (0)	209	7.49

24	140 (89.17)	15 (9.55)	2 (1.27)	157	5.62
25	186 (89.42)	21 (10.1)	1 (0.48)	208	7.45
26	5 (100)	0 (0)	0 (0)	5	0.18
27	33 (94.29)	0 (0)	2 (5.71)	35	1.25
Total	**2542 (2477.44)**	**217 (177.86)**	**33 (44.69)**	**2792**	**100.00**

Table 20: Femoral artery hemostasis

	n	%
Angioseal	120	55.30
Manual compression	58	26.73
Perclose/Proglide/Prostyle	16	7.37
Mynx	9	4.15
Exoseal	1	0.46
Other	13	5.99
Total	**217**	**100.00**

2.3 Characteristics of coronary anatomy and clinical recommendations

Table 21: Number vessel disease

	n	%
No vessel disease	619	22.39
One vessel disease	789	28.54
Two vessel disease	626	22.64
Three vessel disease	683	24.70
Missing	48	1.74
Total	**2765**	**100.00**

Table 22: LM disease (> 50 percent stenosis)

	n	%
Yes	208	7.52
No	2522	91.21
Missing	35	1.27
Total	**2765**	**100.00**

Table 23: Clinical recommendation after diagnostic angiogram among stable angina patients

Clinical recommendation	n	%
Conservative/medical treatment	257	46.90
Immediate PCI	214	39.05
Cardiac surgery	38	6.93
Immediate PCI with staged PCI procedure (Partial revascularization with planned additional PCI)	25	4.56
Heart team discussion	6	1.09
Planned PCI at future time	4	0.73
TAVI	3	0.55
Other structural heart intervention	0	0.00
NA	1	0.18
Total	**548**	**100.00**

Table 24: Clinical recommendation after diagnostic angiogram among urgent patients

Clinical recommendation	n	%
Immediate PCI	881	57.39
Conservative/medical treatment	385	25.08
Cardiac surgery	108	7.04
Immediate PCI with staged PCI procedure (Partial revascularization with planned additional PCI)	99	6.45
Heart team discussion	30	1.95
Planned PCI at future time	17	1.11
Other structural heart intervention	4	0.26
TAVI	3	0.20
Missing	8	0.52
Total	**1535**	**100.00**

Note:
urgent patients = patients with one of the following indication: Unstable angina (troponin negative ACS)/ Non STEMI/ STEMI/ STEMI - Late arrival (>12 hrs)/ LBBB of unknown age/ Out of hospital sudden death

Chapter 3 - Percutaneous coronary interventions

3.1 General characteristics

Table 25: Percutaneous coronary intervention (PCI) - count per center

Medical center	PCI - Total	| Stable, n (%	| Urgent, n (%
1	67	22 (32.8)	45 (67.2)
2	115	27 (23.5)	88 (76.5)
3	48	15 (31.2)	33 (68.8)
5	57	0 (0)	57 (100)
6	2	2 (100)	0 (0)
7	43	26 (60.5)	17 (39.5)
8	47	15 (31.9)	32 (68.1)
9	90	90 (100)	0 (0)
10	21	14 (66.7)	7 (33.3)
11	39	7 (17.9)	32 (82.1)
12	126	26 (20.6)	100 (79.4)
14	40	10 (25)	30 (75)
15	104	26 (25)	78 (75)
16	19	2 (10.5)	17 (89.5)
17	124	50 (40.3)	74 (59.7)
18	67	24 (35.8)	43 (64.2)
19	41	20 (48.8)	21 (51.2)
20	37	3 (8.1)	34 (91.9)
21	31	3 (9.7)	28 (90.3)
22	15	9 (60)	6 (40)
23	126	21 (16.7)	105 (83.3)
24	84	30 (35.7)	54 (64.3)
25	108	29 (26.9)	79 (73.1)
26	2	0 (0)	2 (100)
27	24	10 (41.7)	14 (58.3)
Total	**1477**	**481 (32.6)**	**996 (67.4)**

Note:
urgent patients = patients with one of the following indication: Unstable angina (troponin negative ACS)/ Non STEMI/ STEMI/ STEMI - Late arrival (>12 hrs)/ LBBB of unknown age/ Out of hospital sudden death

Table 26: Admission type among percutaneous coronary intervention

	n	%
Elective (from home)	370	25.05
Hospitalized (including urgent admission from emergency department - primary PCI, unstable NSTEMI etc.)	1106	74.88
Missing	1	0.07
Total	**1477**	**100.00**

Table 27: Ischemia evaluation among patients with stable angina who underwent PCI

	n (%)
N	245
Non invasive test ischemia = Yes	178 (72.7)
Functional (e.g. Ergometry, stress echo, SPECT) = Yes	156 (63.7)
Anatomical - Coronary CT angiography = Yes	30 (12.2)
FFR / IFR used = Yes	12 (4.9)
IVUS used = Yes	8 (3.3)
OCT used = Yes	245 (100.0)

Note:

10/15 FFR patients also underwent non invasive test for ischemia

Table 28: Number of vessels treated during index PCI procedure

	n	%
0	25	1.69
1	1146	77.59
2	211	14.29
3	64	4.33
4	13	0.88
5	9	0.61
Missing	1	0.07
NA	8	0.54
Total	**1477**	**100.00**

Table 29: Number of lesions treated during index PCI procedure

	n	%
0	48	3.25
1	1005	68.04
2	313	21.19
3	86	5.82
4	9	0.61

5	5	0.34
Missing	1	0.07
NA	10	0.68
Total	**1477**	**100.00**

Table 30: Number of stents used during index PCI procedure

	n	%
1	851	57.62
2	326	22.07
3	101	6.84
4	12	0.81
5	12	0.81
6	2	0.14
None	163	11.04
NA	10	0.68
Total	**1477**	**100.00**

Table 31: Device types used during index PCI procedure

	Overall
N	1477
Drug eluting stent	1309 (88.6)
Bare metal stent	1 (0.1)
Biodergadable scaffold	0 (0.0)
Covered stent (stent graft)	1 (0.1)
Drug coated balloon - paclitaxel	119 (8.1)
Drug coated balloon - sirolimus	28 (1.9)
Cutting balloon	19 (1.3)
Scoring balloon	93 (6.3)
POBA	39 (2.6)
OPN balloon	22 (1.5)
None	1 (0.1)

Note:
It is possible to have more then one device per patient

Table 32: Advanced imaging and rotablator among PCI patients

	Stable	Urgent	Missing
N	245	1228	
IVUS used = Yes (%)	8 (3.3)	26 (2.1)	0.5
OCT used = Yes (%)	0 (0.0)	6 (0.5)	0.5
FFR / IFR used = Yes (%)	12 (4.9)	44 (3.6)	0.9
Rotablator or orbital atherectomy used = Yes (%)	0 (0.0)	7 (0.6)	0.5

3.2 Multi-vessel PCI

Table 33: Patient characteristics according to single versus multivessel PCI

	Single vessel PCI	Multivessel PCI
n	1268	201
Age (mean (SD))	66.61 (11.78)	68.69 (11.10)
Age group (%)		
50 <= Age < 70	627 (49.4)	95 (47.3)
Age < 50	99 (7.8)	8 (4.0)
Age >= 70	542 (42.7)	98 (48.8)
gender = Male (%)	1010 (79.7)	161 (80.1)
Diabetes = Yes (%)	522 (41.2)	94 (46.8)
COPD = Yes (%)	74 (5.8)	16 (8.0)
Chronic renal failure = Yes (%)	131 (10.3)	24 (12.0)
Chronic dialysis = Yes (%)	22 (1.7)	4 (2.0)
Prior stroke or TIA = Yes (%)	95 (7.5)	16 (8.0)
Prior PCI = Yes (%)	566 (44.7)	84 (41.8)
Prior CABG or valve surgey = Yes (%)	108 (8.5)	13 (6.5)
Heart failure (%)		
Yes	182 (14.4)	39 (19.5)
No	912 (72.1)	127 (63.5)
Unknown	171 (13.5)	34 (17.0)
% LV ejection fraction (mean (SD))	50.03 (11.12)	48.09 (12.69)
Atrial fibrillation = Yes (%)	86 (6.8)	17 (8.5)

3.3 Left main coronary artery PCI

Table 34: Patient characteristics according to left main versus non-left main PCI

	Left main coronary intervention	Other intervention
n	77	1392
Age (mean (SD))	73.30 (9.39)	66.56 (11.70)
Age group (%)		
50 <= Age < 70	22 (28.6)	700 (50.3)
Age < 50	1 (1.3)	105 (7.5)
Age >= 70	54 (70.1)	587 (42.2)
gender = Male (%)	54 (70.1)	1117 (80.2)
Diabetes = Yes (%)	37 (48.7)	580 (41.7)
COPD = Yes (%)	6 (7.8)	84 (6.0)
Chronic renal failure = Yes (%)	15 (19.7)	140 (10.1)
Chronic dialysis = Yes (%)	2 (2.6)	24 (1.7)
Prior stroke or TIA = Yes (%)	6 (7.8)	105 (7.5)
Prior PCI = Yes (%)	37 (48.1)	613 (44.1)
Prior CABG or valve surgey = Yes (%)	18 (23.4)	103 (7.4)
Heart failure (%)		
Yes	21 (27.6)	200 (14.4)
No	43 (56.6)	996 (71.7)
Unknown	12 (15.8)	193 (13.9)
% LV ejection fraction (mean (SD))	45.73 (14.37)	49.99 (11.12)
Atrial fibrillation = Yes (%)	12 (15.8)	91 (6.5)

3.4 Chronic total occlusion (CTO) PCI

Table 35: Patient characteristics according to chronic total occlusion (CTO) versus non-CTO

	PCI to CTO	Other
n	49	1413
Age (mean (SD))	67.84 (12.42)	66.87 (11.70)
Age group (%)		
50 <= Age < 70	23 (46.9)	694 (49.1)
Age < 50	3 (6.1)	104 (7.4)
Age >= 70	23 (46.9)	615 (43.5)
gender = Male (%)	38 (77.6)	1127 (79.8)
Diabetes = Yes (%)	22 (44.9)	591 (41.9)
COPD = Yes (%)	2 (4.1)	87 (6.2)
Chronic renal failure = Yes (%)	7 (14.3)	145 (10.3)
Chronic dialysis = Yes (%)	0 (0.0)	26 (1.8)
Prior stroke or TIA = Yes (%)	1 (2.0)	110 (7.8)
Prior PCI = Yes (%)	27 (55.1)	619 (43.8)
Prior CABG or valve surgey = Yes (%)	7 (14.3)	113 (8.0)
Heart failure (%)		
Yes	12 (24.5)	209 (14.8)
No	31 (63.3)	1002 (71.1)
Unknown	6 (12.2)	199 (14.1)
% LV ejection fraction (mean (SD))	43.73 (13.12)	49.99 (11.24)
Atrial fibrillation = Yes (%)	5 (10.2)	98 (6.9)

Table 36: Success rates of chronic total occlusion (CTO) intervention

	n	%
Yes	27	55.1
No	22	44.9
Total	**49**	**100.0**

Table 37: Chronic total occlusion (CTO) strategy utilized

	n (%)
n	49
Retrograde	4 (8.2)
Anterograde	22 (44.9)

3.5 Bifurcation lesion PCI

Table 38: Patients characteristics according to bifurcation versus non-bifurcation PCI

	PCI to bifurcation lesion	Other
n	49	1413
Age (mean (SD))	67.84 (12.42)	66.87 (11.70)
Age group (%)		
50 <= Age < 70	23 (46.9)	694 (49.1)
Age < 50	3 (6.1)	104 (7.4)
Age >= 70	23 (46.9)	615 (43.5)
gender = Male (%)	38 (77.6)	1127 (79.8)
Diabetes = Yes (%)	22 (44.9)	591 (41.9)
COPD = Yes (%)	2 (4.1)	87 (6.2)
Chronic renal failure = Yes (%)	7 (14.3)	145 (10.3)
Chronic dialysis = Yes (%)	0 (0.0)	26 (1.8)
Prior stroke or TIA = Yes (%)	1 (2.0)	110 (7.8)
Prior PCI = Yes (%)	27 (55.1)	619 (43.8)
Prior CABG or valve surgey = Yes (%)	7 (14.3)	113 (8.0)
Heart failure (%)		
Yes	12 (24.5)	209 (14.8)
No	31 (63.3)	1002 (71.1)
Unknown	6 (12.2)	199 (14.1)
% LV ejection fraction (mean (SD))	43.73 (13.12)	49.99 (11.24)
Atrial fibrillation = Yes (%)	5 (10.2)	98 (6.9)

Table 39: Bifurcation PCI approach

	n	%
Provisional	167	80.68
Two stent technique	38	18.36
Missing	2	0.97
Total	207	100.00

Table 40: Final bifurcation PCI approach

	n	%
Provisional with DCB to SB and DES to main branch	10	4.83
Provisional with DES to side branch and DCB to main branch	7	3.38
Provisional with POBA/no device to Side branch	125	60.39
Two DCB technique	7	3.38
Two stent technique	53	25.60
NA	5	2.42
Total	207	100.00

3.6 Saphneous vein graft (SVG) PCI

Table 41: Interventions among SVG patients

	Overall
n	16
Age of surgey, mean (SD)	12.00 (9.82)
embolic protection used = Yes , n (%)	2 (12.5)
balloon used = Yes, n (%)	2 (12.5)
stent used = Yes, n (%)	13 (81.2)

Table 42: Procedural complications

	All coronary procedurers	Diagnostic procedures
n	2756	1279
Coronary artery dissection (%)	17 (0.6)	3 (0.2)
Coronary artery perforation (%)	3 (0.1)	0 (0.0)
No reflow / distal embolization (%)	18 (0.7)	0 (0.0)
Significant (>1.5 mm) side branch occlusion (%)	4 (0.1)	0 (0.0)
Tamponade (%)	2 (0.1)	0 (0.0)
Ventricular arrhythmia (%)	6 (0.2)	0 (0.0)
Significant conduction abnormality requiriung pacing (%)	|2 (0.1)	|0 (0.0)
CPR (%)	6 (0.2)	0 (0.0)
Urgent cardiac surgery (%)	2 (0.1)	0 (0.0)
Vascular access complication (%)	2 (0.1)	0 (0.0)
Ascending aorta dissection = Unchecked (%)	2756 (100.0)	1279 (100.0)
Device related complication (wire/stent/balloon/rorablator etc.) (%)	4 (0.1)	0 (0.0)

3.7 Post-procedural anti-platelet and anticoagulation

Table 43: Post procedure anti-platelet recommendations

	Stable, n (%)	Urgent, n (%)
n	234	1132
Aspirin recommendation = Yes	214 (92.6)	1064 (95.6)
Second anti-platelet recommendation		
Clopidogrel	170 (72.6)	482 (42.9)
Ticagrelor	11 (4.7)	252 (22.4)
Prasugrel	6 (2.6)	312 (27.8)
None	47 (20.1)	77 (6.9)

Note:
Patients with Atrial fibrillation were excluded

Table 44: Lipid lowering therapy at discharge

	Stable, n (%)	Urgent, n (%)

n	245	1228
Statin	168 (68.6)	981 (79.9)
Ezetemibe	12 (4.9)	128 (10.4)
PCSk9i	1 (0.4)	5 (0.4)
Bempedoic acid	245 (100.0)	1228 (100.0)
Icosapent Ethyl (Vazcepa)	245 (100.0)	1228 (100.0)
Bezafibrate	0 (0.0)	6 (0.5)
No lipid lowering therapy	22 (9.0)	33 (2.7)

Table 45: Recommended anticoagulants after PCI in patients with atrial fibrillation

	Stable, n (%)	Urgent, n (%)
n	11	92
Coumadin	0 (0.0)	1 (1.1)
Xarelto (Rivaroxaban)	1 (9.1)	6 (6.5)
Eliquis (Apixaban)	7 (63.6)	54 (58.7)
Pradaxa (Dabigatran)	0 (0.0)	1 (1.1)
Other	0 (0.0)	1 (1.1)
None	0 (0.0)	1 (1.1)

Table 46: Number of days from procedure to discharge

	Stable, n (%)	Urgent, n (%)
n	245	1228
Number of days from procedure to discharge		
>4 days post procedure	7 (3.6)	178 (19.0)
2-3 days post procedure	18 (9.2)	261 (27.8)
Day post procedure	92 (47.2)	411 (43.8)
Procedure day	78 (40.0)	89 (9.5)