

SUPPLEMENTARY MATERIAL LEGEND

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Search strategy for Embase

1: 'percutaneous coronary intervention':ti,ab

2: 'primary PCI':ti,ab

3: 'pci':ti,ab OR 'ptca':ti,ab

4: 1 OR 2 OR 3

5: 'myocardial infarct*':ti,ab OR 'stemi':ti,ab OR 'ami':ti,ab

6: ((corona* OR corono*) NEXT/1 (virus* or viral* or virinae*)):ti,ab

7: (coronavirus* OR coronavirus* OR coronavirinae* OR '2019-ncov' OR '2019 cov' OR ncov2019 OR ncov-2019 OR covid-19 OR covid19 OR corvid-19 OR corvid19 OR wncov OR wn-cov OR hcov-19 OR hcov19 OR '2019 novel' OR 'ncov' OR n-cov OR 'sars-cov-2' OR 'sarscov-2' OR sarscov2 OR sars-cov2 OR sarscov19 OR sars-cov19 OR sars-cov-19 OR 'sarsr cov' OR ncover OR ncorona* OR ncorono* OR ncovwuhan* OR ncovhubei OR ncovchina* OR ncovchinese*):ti,ab

8: 6 OR 7

9: 4 AND 5 AND 8

Search strategy for Medline

1: (percutaneous coronary intervention OR primary PCI OR PCI or angioplast* OR PTCA).tw.

2: (myocardial infarct* OR STEMI or AMI).tw.

3:(corona-virus*.tw OR corono-virus*.tw OR coronavirus*.tw OR coronovirus*.tw OR coronavirinae*.tw OR Wuhan*.tw OR Hubei*.tw OR Huanan.tw OR "2019 nCoV".tw OR 2019nCoV.tw OR 2019 CoV.tw OR nCoV2019.tw OR "nCoV 2019".tw OR "COVID 19".tw OR COVID19.tw OR "CORVID 19".tw OR CORVID19.tw OR "WN CoV".tw OR

WNCov.tw OR "HCoV 19".tw OR HCoV19.tw OR CoV.tw OR "2019 novel*".tw OR Ncov.tw OR "n cov".tw OR "SARS CoV 2".tw OR "SARSCoV 2".tw OR "SARS-CoV-2".tw OR "SARSCoV-2".tw OR "SARSCoV2".tw OR "SARS CoV2".tw OR SARSCov19.tw OR "SARS Cov19".tw OR "SARSCov 19".tw OR "SARS Cov 19".tw OR Ncover.tw OR Ncorona*.tw OR Ncorono*.tw OR NcovWuhan*.tw OR NcovHubei*.tw OR NcovChina*.tw OR NcovChinese*.tw OR SARSr-cov).tw

4: 1 AND 2 AND 3

Supplemental Table S1 Door-to-Balloon Time Definition

| Author | Door-to-Balloon Time Definition |
|--------------------|--|
| Boeddinghaus et al | Not Defined |
| Cammalleri et al | Time interval between admission to ED ^a and successful wire crossing |
| Çinier et al | Time interval between arrival at hospital and balloon inflation |
| Claeys et al | Time interval between admission to PCI ^b center and balloon inflation |
| Clifford et al | Not defined |
| Chew et al | Time interval between arrival at hospital and first device deployment ^c |
| De Luca et al | Not defined |
| Erol et al | Time interval between arrival at study center and balloon inflation |
| Gramegna et al | Time interval between admission to hospital and wire crossing culprit lesion site |
| Haddad et al | Time interval between arrival at hospital and first device activation |
| Kobo et al | Not defined |
| Kwok et al | Not defined |
| Little et al | Time interval between arrival at PCI ^b center and first coronary intervention restoring perfusion |
| Nan et al | Not defined |
| Natarajan et al | Not defined |
| Popovic et al | Not defined |
| Reinstadler et al | Not defined |
| Song et al | Not defined |
| Soylu et al | Time interval between arrival at PCI center and successful wire crossing |

^a**ED:** Emergency Department

^b**PCI:** Percutaneous Coronary Intervention

^cAuthors defined first device deployment as either balloon inflation, manual thrombectomy or direct stenting

Supplemental Table S2 Summary of Included Studies

| Author | Country | Cohort | Time Period | Caseload Reduction | N | Age | Male (%) | HTN (%) | T2DM (%) | Dyslipidaemia (%) | Smoking (%) | Past MI (%) | Past PCI (%) | Past CABG (%) | Anterior (%) | Killip≥3 (%) | Out of Hosp CA (%) | Cardiogenic Shock (%) | QUIPS Rating | NOS Score | | |
|------------------------------------|-------------|--------|---------------------------|---|-------|------|----------|---------|----------|-------------------|-------------|-------------|--------------|---------------|--------------|--------------|--------------------|-----------------------|--------------|-----------|----------|---|
| Ayad et al ⁵⁰ | Egypt | CP | 1 Feb – 30 Oct 2020 | 25.8% | 270 | 57.1 | 81.5 | 39.6 | 35.2 | 45.2 | 45.6 | - | - | - | 47.4 | - | - | - | Moderate | 8 | | |
| | | PC | 1 Feb – 30 Oct 2019 | | 364 | 58.9 | 85.7 | 42.9 | 35.7 | 50.0 | 57.1 | - | - | - | 59.3 | - | - | - | | | | |
| Boeddinghaus et al ⁵⁷ | Switzerland | CP | 1 Mar – 30 Apr 2020 | NC | 64 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Low | 7 | |
| | | PC | 1 Jan – 29 Feb 2020 | | 63 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Cammalleri et al ¹⁵ | Italy | CP | 1 – 31 Mar 2020 | 63.0% | 13 | 65.0 | 84.6 | 53.8 | 23.1 | 61.5 | 76.9 | 5.7 | 8.6 | 0.0 | 46.2 | - | - | - | - | Moderate | 6 | |
| | | PC | 1 – 31 Mar 2019 | | 35 | 62.0 | 88.6 | 65.7 | 22.9 | 31.4 | 54.3 | 7.7 | 0.0 | 0.0 | 34.3 | - | - | - | - | | | |
| Çinier et al ⁴⁵ | Turkey | CP | 5 Mar – 6 Apr 2020 | 48.2% | 90 | 59.3 | 81.1 | 45.6 | 26.7 | 14.4 | 47.8 | - | - | - | - | - | - | - | - | Low | 8 | |
| | | PC | 5 Mar – 6 Apr 2019 | | 174 | 63.7 | 85.6 | 50.6 | 34.5 | 14.9 | 67.2 | - | - | - | - | - | - | - | - | | | |
| Claeys et al ⁴⁹ | Belgium | CP | 13 Mar – 3 Apr 2020 | 2017: 150, 2018: 152, 2019: 177, 2020: 116 ^a | 116 | 63.0 | 80.0 | 48 | 27 | - | - | - | - | - | 47 | - | - | - | - | Moderate | 7 | |
| | | PC | 13 Mar – 3 Apr 2017/18/19 | | 479 | 63.0 | 74.0 | 47 | 15 | - | - | - | - | - | 45 | - | - | - | - | | | |
| Clifford et al ³⁸ | Canada | CP | 15 Nov 2019 – 16 Mar 2020 | 19.0% | 193 | 65 | 70.0 | 51.0 | 28.0 | 45.0 | 40.0 | 12.0 | 13.0 | 4.0 | - | - | - | - | - | Low | 7 | |
| | | PC | 17 Mar – 16 Jul 2020 | | 238 | 64 | 71.0 | 52.0 | 23.0 | 42.0 | 48.0 | 9.0 | 9.0 | 3.0 | - | - | - | - | - | | | |
| Chew et al ²³ | Singapore | CP | 7 Feb – 31 Mar 2020 | NC | 95 | 59.0 | 56.8 | 53.7 | 35.8 | 58.9 | 55.8 | 8.4 | 12.6 | 0.0 | - | 12.6 | 9.5 | - | - | Low | 8 | |
| | | PC | 1 Oct 19 – 6 Feb 2020 | | 208 | 57.0 | 64.4 | 54.8 | 36.5 | 69.7 | 58.7 | 10.6 | 13.0 | 0.0 | - | 13.1 | 1.9 | - | - | | | |
| De Luca et al ³⁶ | Europe | CP | 1 Mar – 30 Apr 2020 | 18.9% | 2811 | 64.0 | 74.5 | 53.4 | 18.4 | 42.5 | 41.1 | 9.7 | 12.6 | 2 | 45.5 | - | 7.0 | 8.8 | - | Low | 9 | |
| | | PC | 1 Mar – 30 Apr 2019 | | 3484 | 64.0 | 73.7 | 54.7 | 18.1 | 41.5 | 41.3 | 9.4 | 12.6 | 1.7 | 45.7 | - | 6.6 | 7.7 | - | | | |
| Erol et al ¹⁷ | Turkey | CP | 17 Apr – 2 May 2020 | 31.2% | 485 | 58 | 79.8 | 45.6 | 31.1 | 22.3 | 51.1 | - | - | - | 49.1 | - | - | - | - | Moderate | 8 | |
| | | PC | 1 – 15 Nov 2018 | | 711 | 60 | 77.6 | 38.4 | 28.3 | 67.0 | 56.4 | - | - | - | 48.1 | - | - | - | - | | | |
| Fileti et al ¹⁶ | Italy | CP | 10 Mar – 10 Apr 2020 | 23.4% | 33 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Low | 6 |
| | | PC | 10 Mar – 10 Apr 2019 | | 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Gramegna et al ²⁰ | Italy | CP | 21 Feb – 1 Apr 2020 | NC | 26 | 66.0 | 73.1 | 53.8 | 26.9 | 57.7 | 30.8 | - | 26.9 | 7.7 | - | - | - | - | 19.2 | - | Low | 6 |
| | | PC | 21 Feb – 1 Apr 2018/19 | | 21 | 68.0 | 85.7 | 52.4 | 19.0 | 38.1 | 19.0 | - | 4.8 | 4.8 | - | - | - | - | 9.5 | - | Moderate | 6 |
| Haddad et al ³⁹ | Canada | CP | 15 Mar – 15 May 2020 | 11.67% | 53 | 60.8 | 83.0 | 41.5 | 11.3 | 37.7 | 35.8 | - | 5.7 | 1.9 | 50.9 | - | - | - | - | Low | 7 | |
| | | PC | 15 Mar – 15 May 2019 | | 60 | 69.5 | 70.0 | 50.0 | 21.7 | 46.7 | 41.7 | - | 18.3 | 1.7 | 46.7 | - | - | - | - | | | |
| Hannan et al ⁴⁰ | USA | CP | 15 Mar – 30 Apr 2020 | 24% per week | 463 | 61.9 | 74.1 | - | 27.9 | - | - | - | 16.6 | - | - | - | - | - | 6.5 | Moderate | 9 | |
| | | PC | 1 Jan 2019 – 14 Mar 2020 | | 6584 | 63 | 73.8 | - | 29.9 | - | - | - | 17.0 | - | - | - | - | - | 8.3 | | | |
| Hauguel-Moreau et al ⁴² | France | CP | 17 Feb – 26 Apr 2020 | 65.0% | 16 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Moderate | 6 |
| | | PC | 17 Feb – 26 Apr 2018/19 | | 63 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Huang et al ¹⁴ | China | CP | 1 Feb – 15 Apr 2020 | NC | 31 | 61 | 80.6 | 51.6 | 25.8 | 22.6 | 58.1 | - | - | - | 54.8 | 6.5 | - | - | - | Moderate | 6 | |
| | | PC | 1 Jan – 31 Dec 2019 | | 31 | 60 | 80.6 | 58.1 | 19.4 | 25.8 | 64.5 | - | - | - | 48.4 | 3.2 | - | - | - | | | |
| Kitahara et al ⁵³ | Japan | CP | 7 Apr – 14 Aug 2020 | NC | 63 | 70 | 66.7 | 57.1 | 25.4 | 73.0 | 36.5 | 12.7 | 9.5 | 1.6 | 39.7 | 25.4 | - | - | - | Moderate | 8 | |
| | | PC | 1 Jan – 6 Apr 2020 | | 359 | 72 | 72.1 | 70.5 | 37.9 | 70.5 | 34.0 | 8.1 | 9.2 | 2.0 | 50.1 | 17.0 | - | - | - | | | |
| Kobo et al ¹² | Israel | CP | 20 Mar – 20 Apr 2020 | 22.0% | 107 | 63.0 | 84.1 | 52.3 | 34.6 | 58.9 | 63.6 | - | - | - | - | - | - | - | - | - | Low | 9 |
| | | PC | 20 Mar – 20 Apr 2019 | | 136 | 61.0 | 81.6 | 47.8 | 29.4 | 53.7 | 61.0 | - | - | - | - | - | - | - | - | | | |
| Kwok et al ²¹ | UK | CP | 1 Jan – 30 Apr 2020 | 43.0% | 683 | 64.0 | 72.9 | 39.4 | 16.4 | 32.8 | 38.1 | 11.4 | 11.8 | 2.3 | - | - | - | - | - | - | Low | 9 |
| | | PC | 1 Jan – 30 Apr 2017/18/19 | | 33255 | 63.0 | 74.7 | 43.2 | 18.5 | 34.9 | 40.9 | 12.4 | 12.5 | 2.4 | - | - | - | - | - | | | |
| Little et al ²² | UK | CP | 1 Mar – 30 Apr 2020 | 21.0% | 348 | 63 | 80.0 | 51.2 | 24.7 | 35.6 | 41.6 | 12.4 | 12.4 | 1.2 | - | - | 10.8 | 13.5 | Moderate | 8 | | |

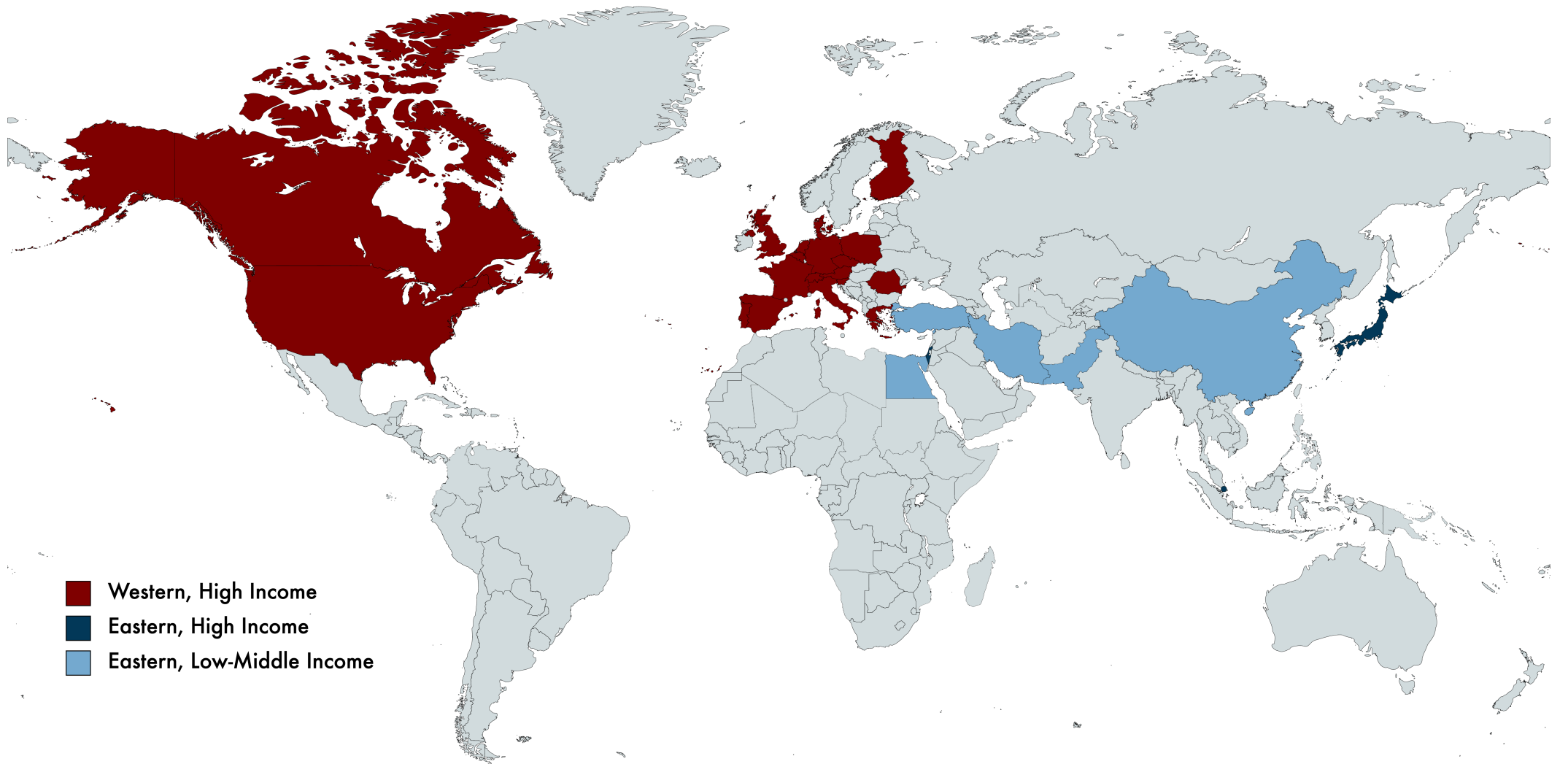
| | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|----------|----|---------------------------|-----------------|-------|-------|------|------|------|------|------|------|------|-----|------|------|------|------|----------|---|
| | | PC | 1 Mar – 30 Apr 2019 | | 440 | 63 | 78.0 | 49.3 | 24.1 | 35.0 | 55.7 | 13.6 | 14.3 | 2.7 | - | - | 8.9 | 12.5 | | |
| Mengal et al ⁴⁴ | Pakistan | CP | 1 Mar – 30 Apr 2020 | 25.9% | 1139 | 55.52 | 80.7 | 41.4 | 34.7 | - | 24.7 | - | - | - | - | - | - | - | Low | 6 |
| | | PC | 1 Mar – 30 Apr 2019 | | 1537 | 52.72 | 78.4 | 38.8 | 35.1 | - | 26.2 | - | - | - | - | - | - | - | | |
| Nan et al ²⁴ | China | CP | 23 Jan – 31 Mar 2020 | NC | 60 | 71.0 | 61.7 | 40 | 45 | 26.7 | 30.0 | 13.3 | 10 | 1.7 | 68.3 | 60 | - | - | | |
| | | PC | 1 Aug 19 – 22 Jan 2019 | | 183 | 66.7 | 61.7 | 63.4 | 45.4 | 37.2 | 38.8 | 12.6 | 14.2 | 0.5 | 54.6 | 40.4 | - | - | Moderate | 6 |
| Natarajan et al ⁴¹ | Canada | CP | 1 Jan – 10 May 2020 | 11.6% | 1352 | - | - | - | - | - | - | - | - | - | - | - | - | - | Moderate | 6 |
| | | PC | 1 Jan – 10 May 2019 | | 1555 | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| Popovic et al ⁴³ | France | CP | 26 Feb – 10 May 2020 | NC | 83 | 62.6 | 56.3 | 43.4 | 19.3 | 37.8 | 53.0 | - | - | - | - | - | 16.9 | 9.6 | | |
| | | PC | 2008 – 2017 | | 1552 | 59.6 | 76.1 | 40.1 | 14.9 | 37.1 | 58.0 | - | - | - | - | - | 11.6 | 7.7 | Moderate | 6 |
| Rangé et al ⁴⁴ | France | CP | 15 Mar – 14 Apr 2020 | 12.2% per month | 122 | 62.93 | 70.5 | 45.8 | 19.0 | 28.2 | 39.7 | 4.1 | 9.0 | 0.0 | 46.7 | - | - | 5.7 | Low | 7 |
| | | PC | 15 Jan – 14 Mar 2020 | | 1942 | 63.6 | 76.1 | 42.2 | 14.9 | 33.8 | 38.3 | 7.0 | 12.1 | 1.8 | 42.3 | - | - | 2.9 | | |
| Reinstadler et al ⁴⁸ | Austria | CP | 16 Mar – 5 Apr 2020 | NC | 63 | 64 | 79.0 | 60.0 | 22.0 | 84.0 | 46.0 | 1.0 | - | 3.0 | 50.1 | - | - | - | Moderate | 7 |
| | | PC | 24 Feb – 15 Mar 2020 | | 100 | 61 | 69.0 | 65.0 | 18.0 | 79.0 | 42.0 | 1.5 | - | 3.0 | 46.0 | - | - | - | | |
| Rodríguez-Leor et al ⁵⁰ | Spain | CP | 16 Mar – 14 Apr 2020 | 22.7% | 1009 | 63.1 | 78.4 | 51.9 | 22.6 | 46.7 | 44.6 | - | - | - | - | 9.2 | - | 4.1 | | |
| | | PC | 1 Apr – 30 Apr 2019 | | 1305 | 63.7 | 78.4 | 50 | 25.2 | 45.8 | 45.7 | - | - | - | - | 9.9 | - | 4.1 | Low | 9 |
| Salarifar et al ⁵¹ | Iran | CP | 29 Feb – 30 Apr 2020 | 21.9% | 178 | 58.8 | 77.0 | 78.1 | 45.5 | 53.4 | 41.6 | - | - | - | - | - | - | - | Moderate | 6 |
| | | PC | 1 Mar – 30 Apr 2020 | | 146 | 59.82 | 78.1 | 52.2 | 44.5 | 54.8 | 46.6 | - | - | - | - | - | - | - | | |
| Siudak et al ⁵⁵ | Poland | CP | 13 Mar – 13 May 2020 | NC | 97 | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| | | PC | 13 Mar – 13 May 2019 | | 970 | - | - | - | - | - | - | - | - | - | - | - | - | - | Low | 9 |
| Song et al ³² | China | CP | 24 Jan – 31 Mar 2020 | 23.2% | 73 | 61.6 | 80.8 | 58.9 | 21.9 | 53.4 | 49.3 | 9.6 | 9.6 | 2.7 | 43.8 | 8.2 | - | - | | |
| | | PC | 24 Jan – 31 Mar 2019 | | 95 | 60.6 | 71.6 | 59 | 23.2 | 53.7 | 57.9 | 5.3 | 9.5 | 2.1 | 44.2 | 3.1 | - | - | Low | 8 |
| Soylu et al ⁴⁶ | Turkey | CP | 10 Mar 2020 onwards | NC | 82 | 61.2 | 74.4 | 70.7 | 34.1 | - | 37.8 | 12.0 | - | - | 39.0 | - | - | - | Moderate | 6 |
| | | PC | Before 13 Jan 2020 | | 83 | 60.7 | 73.5 | 66.0 | 32.5 | - | 44.5 | 8.4 | - | - | 42.2 | - | - | - | | |
| Tomasoni et al ³⁷ | Italy | CP | 21 Feb – 10 Apr 2020 | 33.0% | 34 | 66.0 | 73.5 | 64.7 | 23.5 | 20.6 | 44.1 | 17.6 | 20.6 | 0.0 | 58.8 | 14.7 | - | - | Moderate | 7 |
| | | PC | 3 Jan – 10 Feb 2020 | | 51 | 65.0 | 74.5 | 49 | 19.6 | 41.2 | 33.3 | 11.8 | 11.8 | 2.0 | 43.1 | 15.7 | - | - | | |
| Xiang et al ⁴ | China | CP | 24 Jan – 20 Feb 2020 | 26.8% | 10296 | 62.4 | 76.0 | - | - | - | - | - | - | - | - | - | - | - | | |
| | | PC | 27 Dec 2019 – 23 Jan 2020 | | 14070 | 62.9 | 75.3 | - | - | - | - | - | - | - | - | - | - | - | Low | 8 |

CP = COVID period; PC = Pre-Covid period; T2DM = Type 2 Diabetes Mellitus; MI = Myocardial Infarction; PCI = Percutaneous Coronary Intervention; CABG = Coronary Artery Bypass Graft; CA = Cardiac Arrest; QUIPS = Quality in Prognosis Studies; HTN = Hypertension; NC = Not Comparable; * = Study reported a monthly caseload comparison of the years 2017 to 2019 versus 2020

Supplemental Table S3. Summary of results, comparing outcomes during the COVID-19 pandemic to the PreCOVID-19 period

| Binary Outcomes | | | | | | | | | | |
|------------------------------|-------------------------|-------------------|------------------------|----------------|------------------------|----------------|------------------------------|----------------|----------------------------------|----------------|
| | <u>Overall Studies</u> | | <u>Western Centres</u> | | <u>Eastern Centres</u> | | <u>High Income Countries</u> | | <u>Non-High-Income Countries</u> | |
| | OR (95% CI) | p-Value | OR (95% CI) | p-Value | OR (95% CI) | p-Value | OR (95% CI) | p-Value | OR (95% CI) | p-Value |
| <i>Primary Outcomes</i> | | | | | | | | | | |
| In Hospital Mortality | 1.27 (1.09 to 1.49) | 0.002 | 1.19 (0.95 to 1.49) | 0.13 | 1.41 (1.09 to 1.83) | 0.01 | 1.17 (0.95 to 1.44) | 0.13 | 1.52 (1.13 to 2.05) | 0.006 |
| <i>Secondary Outcomes</i> | | | | | | | | | | |
| Cardiogenic Shock | 1.03 (0.86 to 1.23) | 0.75 | - | - | - | - | - | - | - | - |
| Major Adverse Cardiac Events | 1.54 (1.18 to 2.00) | 0.001 | - | - | - | - | - | - | - | - |
| TIMI Grade <3 | 1.60 (1.17 to 2.21) | 0.004 | - | - | - | - | - | - | - | - |
| Continuous Outcomes | | | | | | | | | | |
| | <u>Overall Studies</u> | | <u>Western Centres</u> | | <u>Eastern Centres</u> | | <u>High Income Countries</u> | | <u>Non-High-Income Countries</u> | |
| | WMD (95% CI) | p-Value | WMD (95% CI) | p-Value | WMD (95% CI) | p-Value | WMD (95% CI) | p-Value | WMD (95% CI) | p-Value |
| <i>Primary Outcome</i> | | | | | | | | | | |
| Door-to-Balloon Time (mins) | 8.10 (3.90 to 12.30) | 0.0002 | 4.75 (0.68 to 8.83) | 0.02 | 14.55 (2.88 to 26.22) | 0.01 | 4.52 (0.80 to 8.25) | 0.02 | 19.64 (4.61 to 34.68) | 0.03 |
| <i>Secondary Outcomes</i> | | | | | | | | | | |
| Onset-to-Door Time (mins) | 38.22 (12.67 to 63.77) | 0.003 | - | - | - | - | - | - | - | - |
| LVEF on Discharge (%) | - 4.20 (-1.19 to -7.21) | 0.006 | - | - | - | - | - | - | - | - |
| Mean ICU Stay (days) | 0.70 (0.40 to 0.99) | <0.0001 | - | - | - | - | - | - | - | - |
| Mean Hospital Stay (days) | 0.24 (-0.46 to 0.93) | 0.51 | - | - | - | - | - | - | - | - |

ICU: Intensive Care Unit; **LVEF:** Left Ventricular Ejection Fraction; **TIMI:** Thrombolysis in Myocardial Infarction grading system



Supplemental Figure S1. Classification of the included studies from low-middle or high income countries based on World Bank classification of countries by income.