



RES-Q
Data for Life

World report Activate Quality campaign

*Report prepared from RES-Q database from
patients discharged in March 2024*

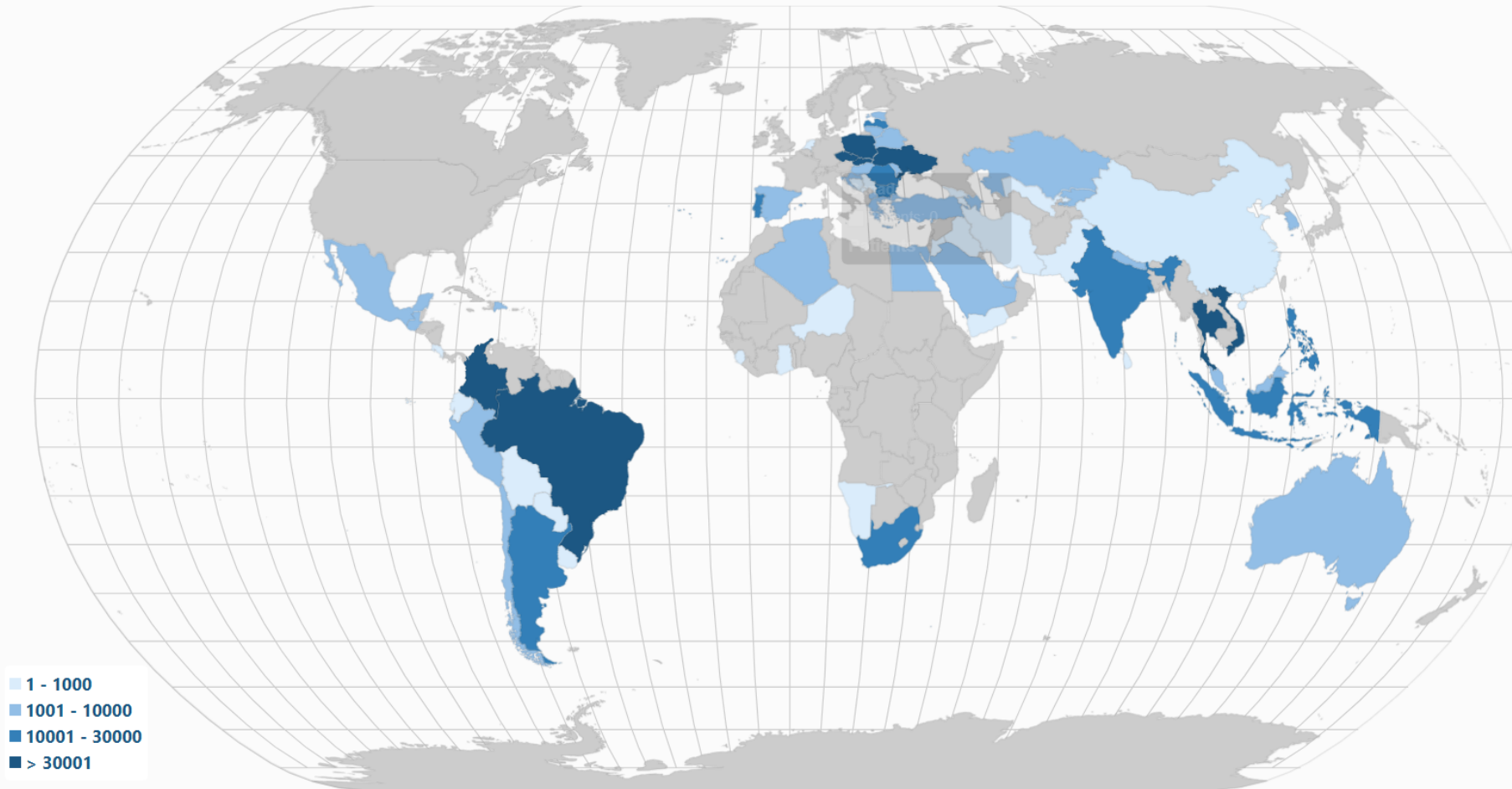
RES-Q in the world

950,000+
Patient cases

1870+
Hospitals

80
Countries

Number of stroke cases enrolled in RES-Q per country



Activate Quality data collection campaign (March & Sept)

Joint global effort by RES-Q and stroke organizations



What gets measured, gets improved

“Activate Quality” this March by collecting all stroke cases in RES-Q registry

By entering all stroke cases, you're not just collecting data, but making it meaningful to improve stroke care.



CLICK HERE TO JOIN! 

For any queries regarding RES-Q, please contact us at admin@qualityregistry.org

www.qualityregistry.org

What gets measured, gets improved

“Activate Quality” this September by collecting all consecutive stroke cases in RES-Q



Countries

Period	Countries
Mar. '22	52
Sep. '22	49
Mar. '23	49
Sep. '23	53
Mar. '24	55



Hospitals

Period	Hospitals
Mar. '22	574
Sep. '22	512
Mar. '23	713
Sep. '23	710
Mar. '24	839



Patients

Period	Patients
Mar. '22	15K
Sep. '22	11K
Mar. '23	20K
Sep. '23	16K
Mar. '24	22K

Join the Global effort with RES-Q!




www.qualityregistry.org



ESO - European Stroke Organisation
March 26

Join us in the March data collection campaign for all stroke patients in RES-Q! Our objective: harmonised data, enhanced country representation, and meaningful utilisation. Your participation doesn't just collect data; it transforms it into actionable insights to advance stroke care. **Activate Quality today!** <https://stroke.qualityregistry.org/> #stroke #strokecare RES-Q Registry of Stroke Care Quality

Activate Quality: What gets measured, gets improved

“Activate Quality” this March by documenting each stroke patient.

By entering all patients for this period, you're not just contributing data; you're advocating for excellence in stroke care.

For any queries regarding RES-Q, please contact us at admin@qualityregistry.org

www.qualityregistry.org



RES-Q Registry of Stroke Care Quality
Published by Max Martynenko - March 26

#qualityregistry #StrokeCare #strokecarequality ESO - European Stroke Organisation World Stroke Campaign ESO-East "Enhancing and Accelerating Stroke Treatment" American Stroke Association Stroke Alliance for Europe Stroke AHA/ASA Mission Thrombectomy The Angels Initiative

What gets measured, gets improved

“Activate Quality” this March by collecting all stroke cases in RES-Q registry

By entering all stroke cases, you're not just collecting data, but making it meaningful to improve stroke care.

For any queries regarding RES-Q, please contact us at admin@qualityregistry.org

www.qualityregistry.org



Methodology

March 2024 data from 55 countries | 832 hospitals | 22,300+ patient cases



Data Collection

- Data is collected continuously in the RES-Q registry by the hospitals
- This report is based on patient cases discharged in March 2024.

Participation Levels

- **High Participation Countries:** 27 countries with more than 10 hospitals participating or a population of less than 5 million.
- **Low Participation Countries:** 14 countries with fewer than 10 hospitals participating and a population of more than 5 million.

Data Analysis

- Analysis was split based on participation levels.
- Key indicators such as arrival mode, EMS pre-notification, onset-to-door time, patient admission rates, and recanalization rates were evaluated.

Statistical Methods

- Median values were used for time-based metrics (e.g., onset-to-door time, door-to-needle time).
- Percentiles were used to categorize performance on key indicators.

Participation overview

55 countries| 832 hospitals| 22, 300+ patient cases



- Number of countries participated - **55**
- Statistics shown for **41 countries** that registered at least 30 patients in March 2024

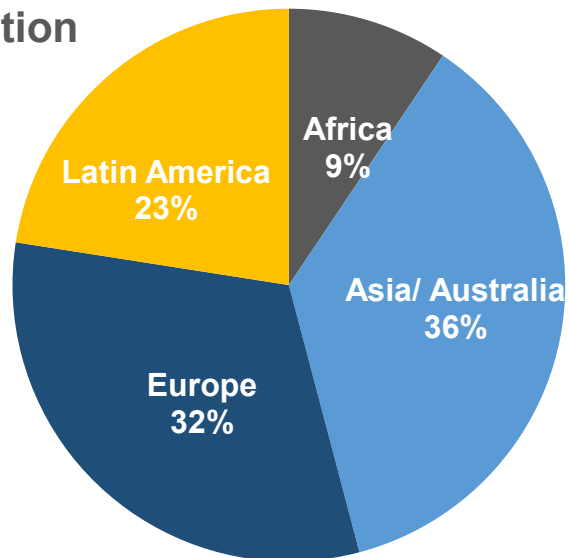
Analysis split into two types based on the participation level

1. **27 Countries** with more than 10 hospitals participating **OR** a population of less than 5 Mn - **High participation countries**
2. **14 Countries** with fewer than 10 hospital participating **AND** a population of more than 5 Mn - **Low participation countries**

High Participation countries (27)	Low Participation countries (14)
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Argentina	Algeria
Brazil	Australia
Bulgaria	Belarus
Colombia	Chile
Croatia	Dominican Republic
Czechia	Greece
Egypt	Guatemala
Estonia	Jordan
Georgia	Kazakhstan
Hungary	Nepal
India	Peru
Indonesia	Portugal
Kyrgyzstan	Serbia
Latvia	<u>South Korea</u>
Lithuania	
Malaysia	
Mexico	
Moldova	
Philippines	
Poland	
Romania	
Slovakia	
South Africa	
Spain	
Thailand	
Ukraine	
Viet Nam	

Hospital Participation by region



Partners and Collaborators



RES-Q Global Scientific Committee

Australia	Sandy	Middleton
Brazil	Sheila	Martins
Canada	Michael	Hill
Chile	Pablo	Lavados
Czechia	Robert	Mikulik
Germany	Jan	Van der merwe
Germany	Thomas	Fischer
Greece	Georgios	Tsivgoulis
India	P N	Sylaja
Israel	Natan	Bornstein
Netherlands	Bart	van der worp
South Korea	Sung-II	Sohn
Thailand	Nijasri	Suwanwela
USA	Kaiz	Asif
USA	Dileep	Yavagal
Vietnam	Nguyen	Huy Thang

RES-Q National Coordinators



Argentina	Sebastian	Ameriso	Malaysia	Hoo Fan	Kee
Armenia	Nune	Yeghiazaryan	Mexico	Fernando	Gongora- Rivera
Azerbaijan	Nargiz	Mammadova	Mexico	Carlos	Cantu Brito
Bahrain	Firas	Alnidawi	Moldova	Stanislav	Groppa
Belarus	Sergey	Marchenko	Moldova	Natalia	Ciobanu
Brazil	Sheila	Martins	Nepal	Raju	Paudel
Bulgaria	Prof. Ivan	Milanov	North Macedonia	Anita	Arsovska
Chile	Freddy	Constanzo	Pakistan	Qasim	Bashir
Colombia	Mario	Muñoz	Peru	Carlos	Abanto
Costa Rica	Miguel A.	Barboza	Philippines	Maria Epifania	Collantes
Croatia	Hrvoje	Budincevic	Philippines	Cristina	San Jose
Czechia	Martin	Šrámek	Poland	Adam	Kobayashi
Czechia	Robert	Mikulík	Portugal	Ana	Gomes
Dominican R	Cristina	Ramos	Romania	Cristina	Tiu
Ecuador	Nelson	Maldonado	Russia	Nikolay	Shamalov
Egypt	Magd Fouad	Zakaria	Serbia	Milija	Mijajlovic
Estonia	Janika	Kõrv	Slovakia	Zuzana	Gdovinová
Georgia	Alexander	Tsiskaridze	South Africa	Louis	Kroon
Greece	Georgios	Tsivgoulis	South Korea	Sung-II	Sohn
Hungary	Laszlo	Szapary	Spain	Francisco	Moniche
India	Jeyaraj	Pandian	Thailand	Somchai	Towanabut
Indonesia	Adin	Nulkhasanah	Ukraine	Sergii	Moskovko
Iraq	Hussam	Robiai	UAE	Ammar	AlOmar
			Uzbekistan	Zafar	Abdullayev
			Vietnam	Nguyen Huy	Thang

Summary - World and country performance on key indicators



Country	Arrived by EMS %	EMS prenotified %	ICU/Stroke Unit %	Median admission NIHSS	Recanalization rate %	Median DTN (in mins)	Median DTG (in mins)	Swallow screening done %	Physiotherapy done %	Antihypertensive @ discharge %	Statins @ discharge %	Anticoagulant @ discharge %	Median hospital stay	Median discharge NIHSS
WORLD (41 countries)	53	46	73	6	23	40	80	91	78	77	78	92	5	3
High Participation														
Argentina	55	40	70	4	15	49	136	79	67	57	83	92	4	2
Brazil	58	33	76	5	27	43	109	84	91	55	66	94	4	3
Bulgaria	71	2	76	6	20	35	73	96	78	90	57	90	5	3
Colombia	34	33	51	6	32	59	178	69	73	60	73	93	4	2
Croatia	77	12	63	5	22	48	48	89	91	90	82	97	8	3
Czechia	75	82	75	4	40	19	43	90	75	77	87	95	5	1
Egypt	41	8	89	12	32	30	121	97	92	72	58	93	4	6
Estonia	78	23	83	5	30	30	77	70	74	83	72	85	7	2
Georgia	94	3	97	8	8	84	60	78	59	94	61	88	6	2
Hungary	73	47	70	4	33	50	76	92	69	87	80	94	5	2
India	31	58	94	6	39	37	74	92	93	63	76	87	5	2
Indonesia	13	73	57	8	18	49	77	85	78	74	42	92	5	5
Kyrgyzstan	49	6	84	10	0			98	4	90	78	47	10	5
Latvia	92	25	74	7	33	34	53	81	86	89	81	98	8	3
Lithuania	77	65	54	5	59	26	100	94	100	84	76	100	10	3
Malaysia	18	4	40	5	18	67	190	91	65	71	76	73	4	3
Mexico	54	1	50	8	23	59	134	69	45	71	62	89	2	3
Moldova	82	11	40	8	14	48	113	74	37	91	38	83	9	4
Philippines	23	22	56	7	20	45	316	76	58	78	75	91	5	3
Poland	72	40	95	6	36	40	77	96	93	85	86	97	8	3
Romania	80	27	25	8	15	44	98	87	55	85	80	96	8	3
Slovakia	79		61	4	27	31	103	97			87	92	6	2
South Africa	35	51	60	5	28	72	56	75	84	58	47	96	4	3
Spain	61	61	81	5	47	53	83	90	42	56	62	100	4	1
Thailand	42	100	98	4	16	42	74	99	99		97	87	3	2
Ukraine	84	58	84	8	24	20	60	100	94	96	89	84	7	4
Viet Nam	26	12	83	6	21	40	77	98	70	79	75	96	6	3

WORLD REPORT BASED ON MARCH DATA FROM RES-Q (signal icons based on 0-33,34-66,67-100 Percentiles)

Summary - World and country performance on key indicators

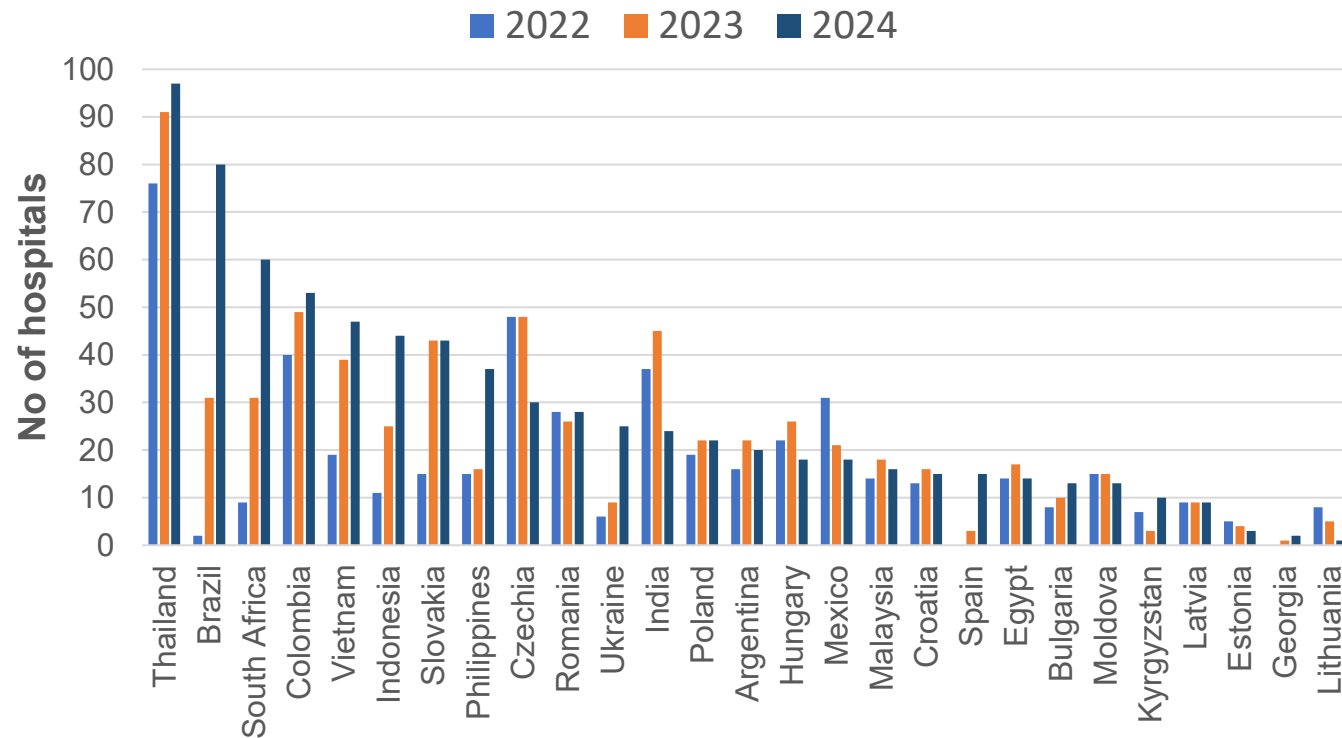


Country	Arrived by EMS %	EMS prenotified %	ICU/Stroke Unit %	Median admission NIHSS	Recanalization rate %	Median DTN (in mins)	Median DTG (in mins)	Swallow screening done %	Physiotherapy done %	Antihypertensive @ discharge %	Statins @ discharge %	Anticoagulant @ discharge %	Median hospital stay	Median discharge NIHSS
WORLD (41 countries)	● 53	● 46	● 73	6	● 23	● 40	● 80	● 91	● 78	● 77	● 78	● 92	● 5	3
Low participation														
Algeria	● 22	● 56	● 99	12	● 33	● 9		● 96	● 59	● 78	● 43	● 90	● 4	8
Australia	● 74	● 25	● 76	3	● 0			● 96	● 100	● 67	● 58	● 100	● 4	1
Belarus	● 94	● 28	● 99	6	● 44	● 64	● 75	● 97	● 76	● 98	● 65	● 100	● 13	2
Chile	● 66	● 27	● 62	5	● 21	● 44	● 67	● 93	● 94	● 66	● 88	● 88	● 6	2
Dominican Republic	● 30	● 7	● 53	6	● 16	● 38	● 167	● 86	● 73	● 69	● 72	● 89	● 3	3
Greece	● 27	● 11	● 43	3	● 19	● 55	● 130	● 87	● 62	● 60	● 85	● 100	● 5	1
Guatemala	● 33	● 8	● 18	8	● 8	● 80		● 62	● 42	● 59	● 70	● 100	● 4	3
Jordan	● 40	● 0	● 25	9	● 11	● 26		● 88	● 82	● 66	● 68	● 100	● 3	8
Kazakhstan	● 96	● 3	● 100	8	● 16	● 30	● 38	● 97	● 95	● 96	● 54	● 88	● 10	3
Nepal	● 69	● 28	● 15	5	● 7	● 80	● 155	● 78	● 89	● 50	● 53	● 100	● 3	2
Peru	● 13	● 33	● 23	7	● 18	● 104		● 65	● 71	● 65	● 62	● 86	● 11	3
Portugal	● 67	● 25	● 89	7	● 44	● 48	● 97	● 90	● 74	● 67	● 82	● 97	● 5	2
Serbia	● 74	● 0	● 23	6	● 30	● 57	● 127	● 100	● 83	● 83	● 54	● 100	● 11	3
South Korea	● 61	● 51	● 81	4	● 30	● 41	● 93	● 92	● 85	● 52	● 88	● 100	● 7	2

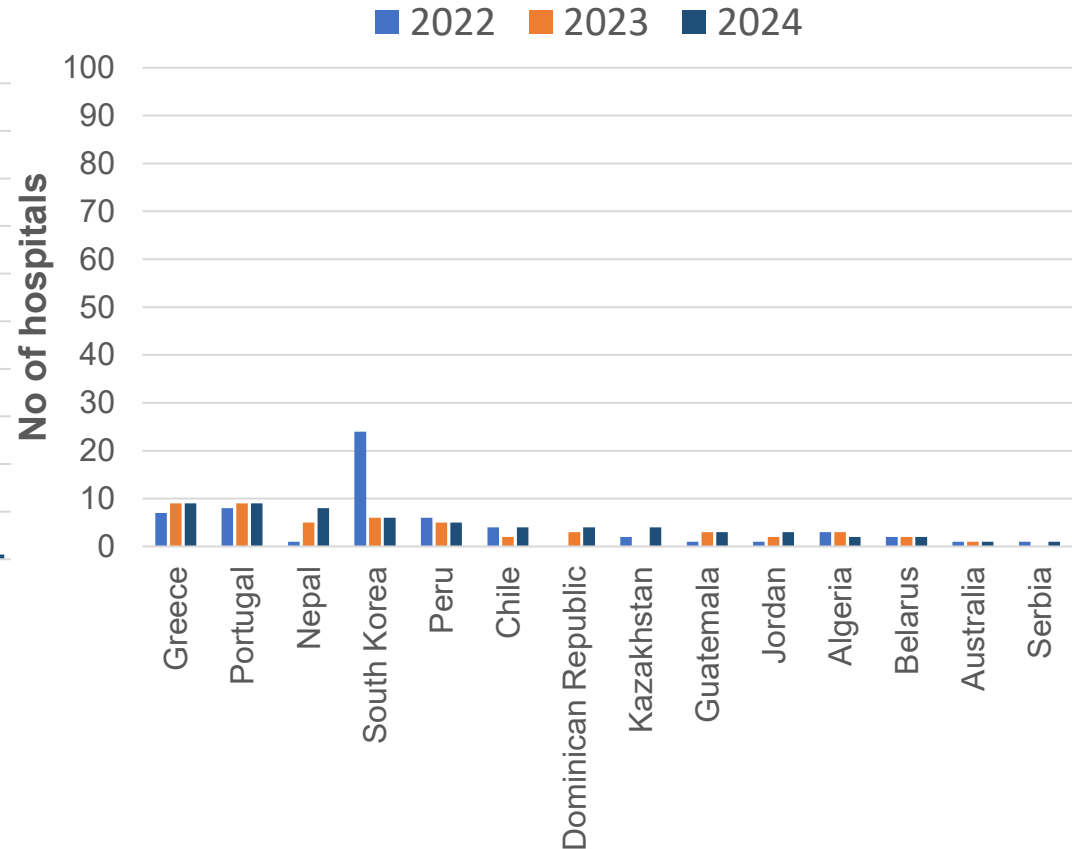
Total Participation

	Mar 2022	Sept 2022	Mar 2023	Sept 2023	Mar 2024	Sept 2024
Total Countries	52	49	49	53	55	52
Total Hospitals	574	512	713	710	839	919
Total Patients	15,455	11,716	20,007	16,235	22,342	20,500

High participation

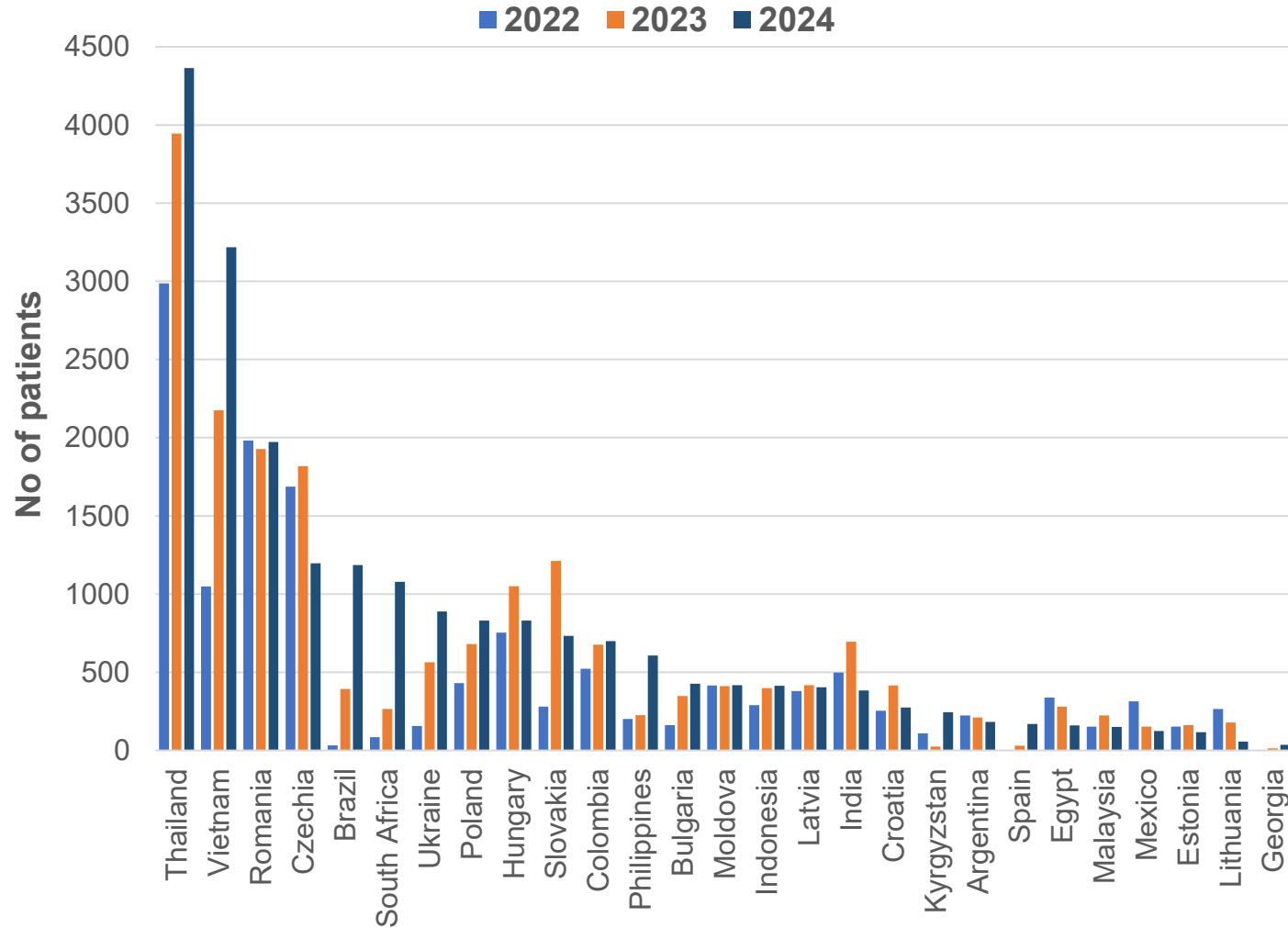


Low participation



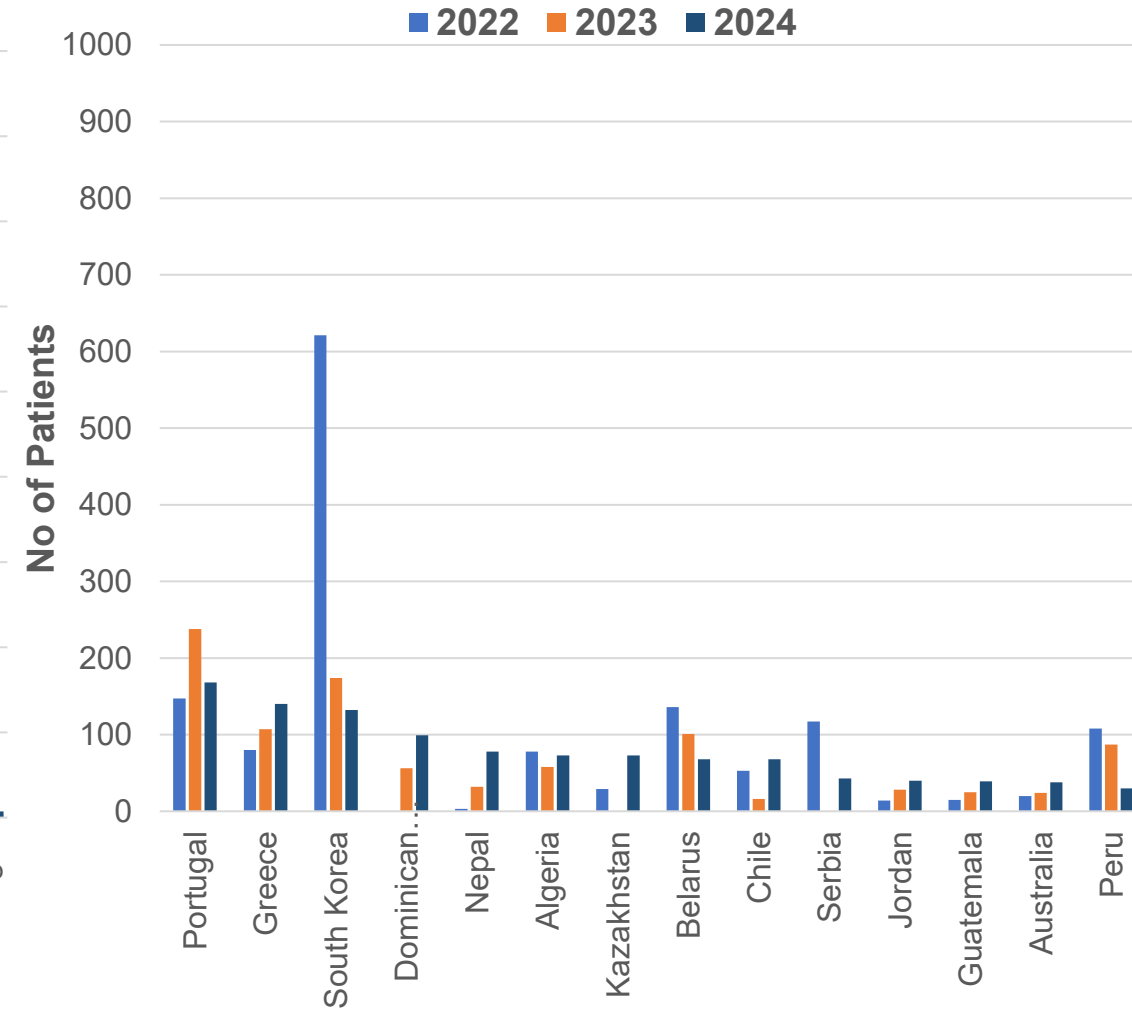
Country wise patient trend

High participation



All stroke cases

Low participation



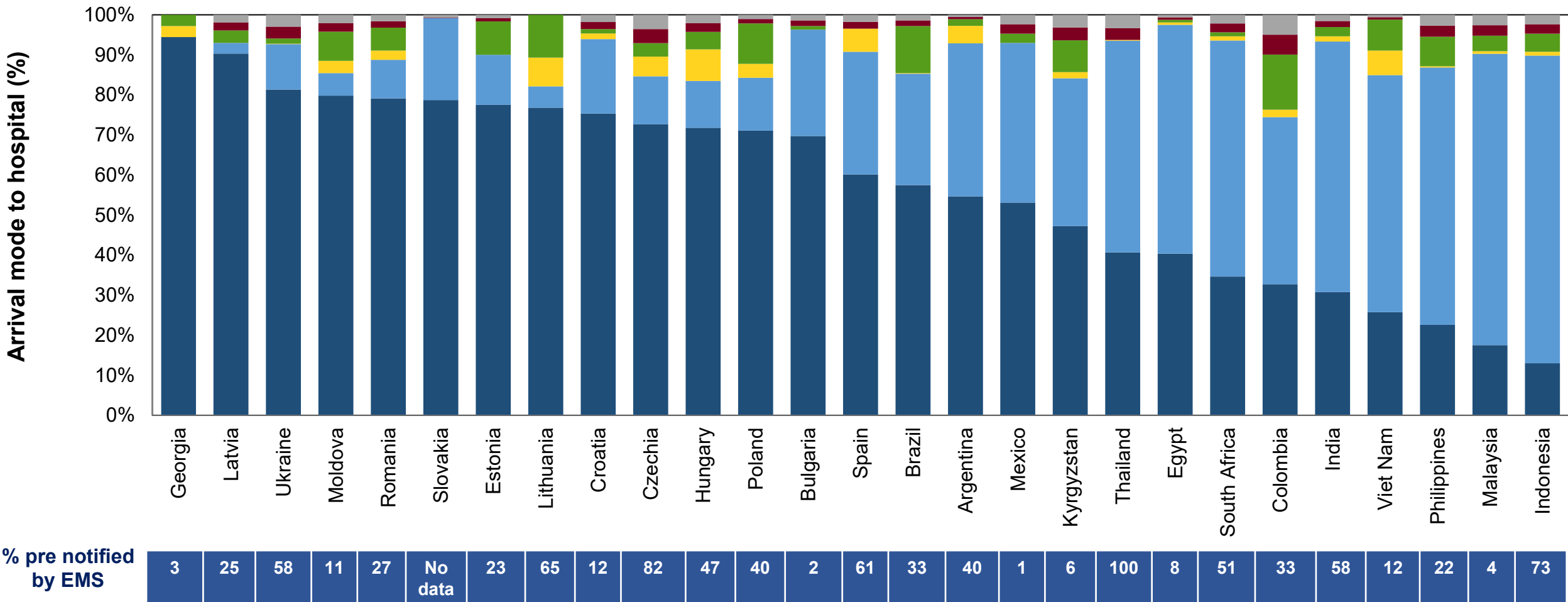
Arrival mode to hospital and EMS pre notification %

53% arrive via EMS out of which 44% cases are pre notified



High participation

■ EMS
 ■ Personal transport
 ■ Another stroke center
 ■ Another hospital
 ■ Unknown
 ■ Inhospital



All stroke cases

Arrival mode to hospital and EMS pre notification %

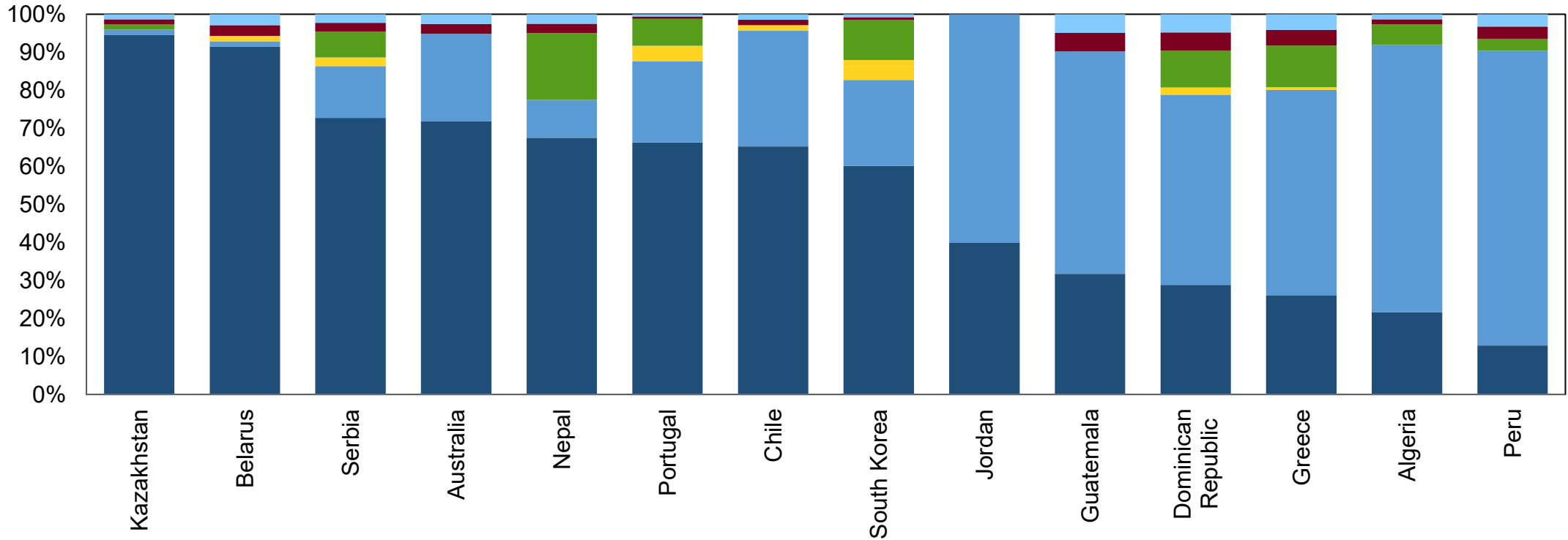
53% arrive via EMS out of which 44% cases are pre notified



Low participation

■ EMS ■ Personal transport ■ Another stroke center ■ Another hospital ■ Unknown ■ Inhospital

Arrival mode to hospital (%)



% pre notified by EMS

3	28	0	25	28	25	27	51	0	8	7	11	56	33
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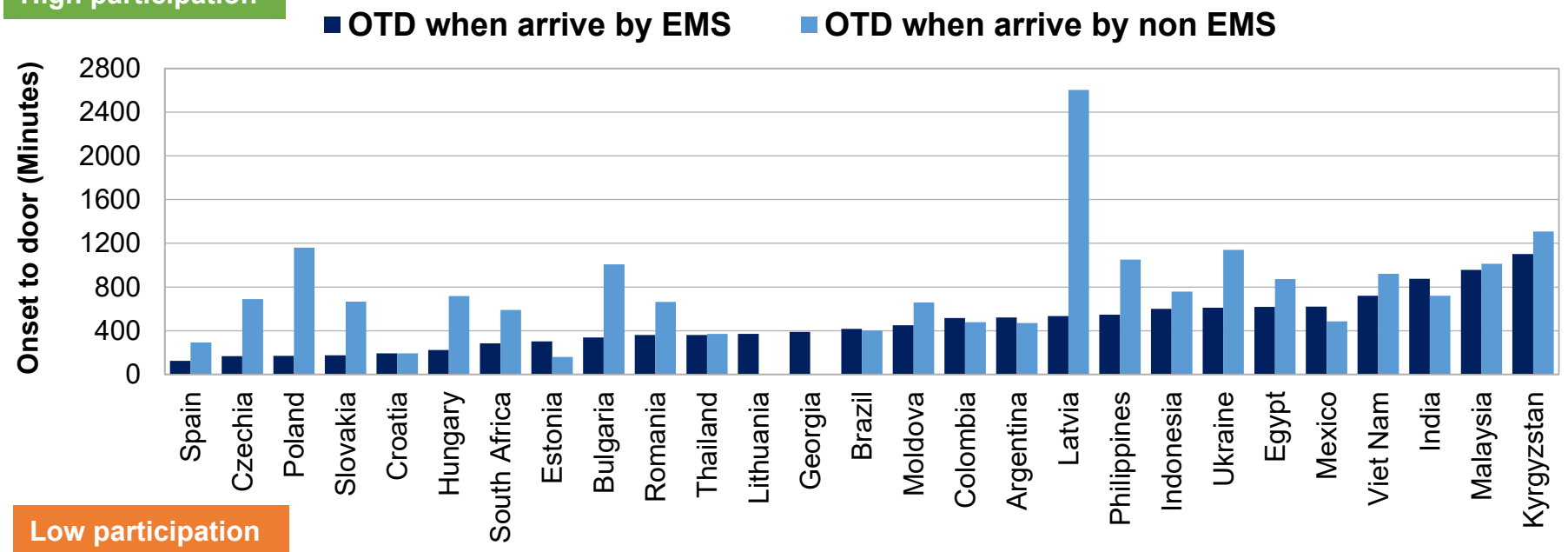
All stroke cases

Median Onset To Door Time (OTD) based on arrival mode (in mins)

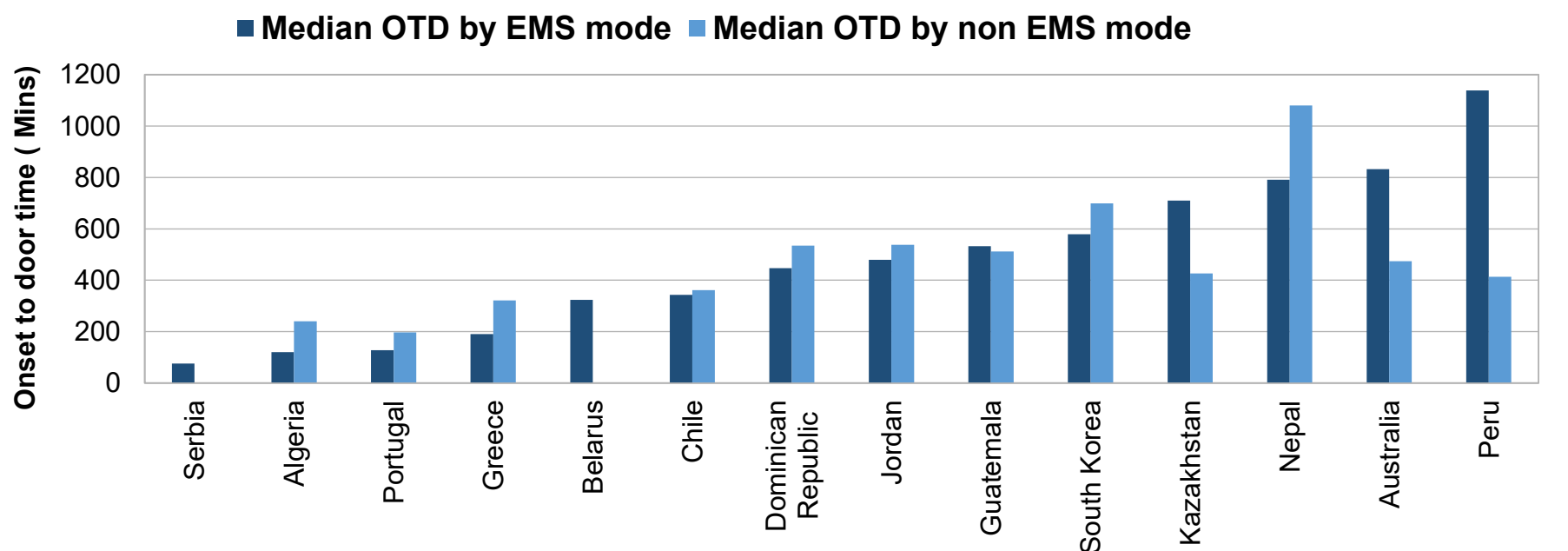
Median Onset To Door time via EMS mode
324 mins

Median Onset To Door time via non-EMS mode
454 mins

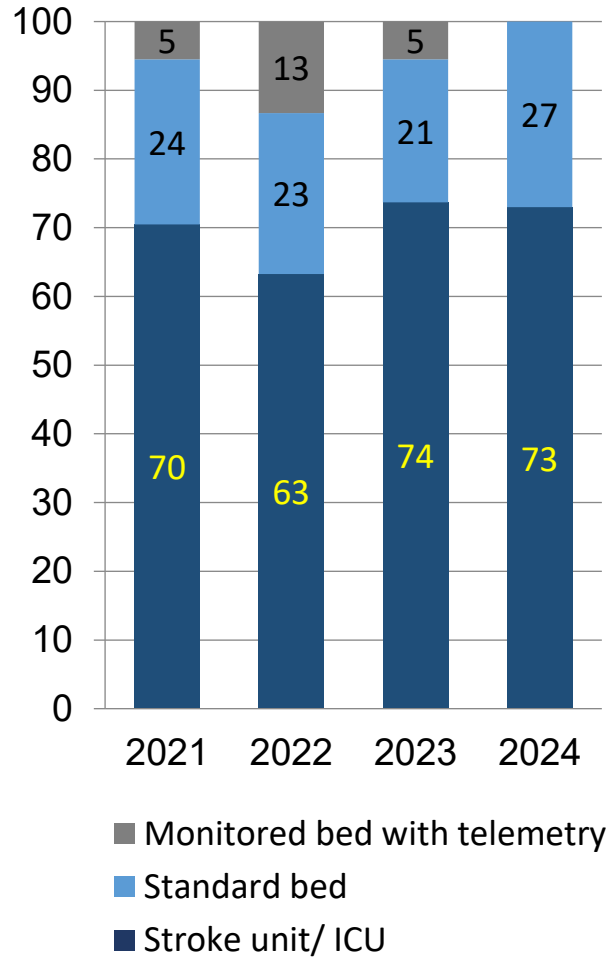
High participation



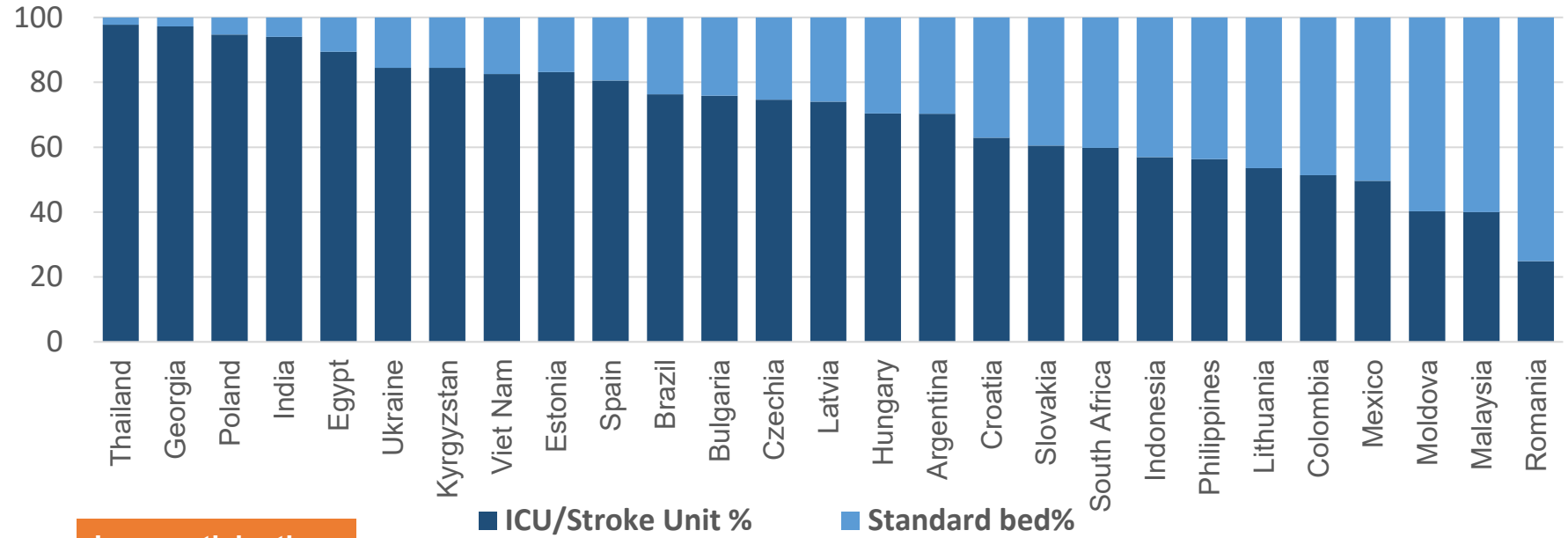
Low participation



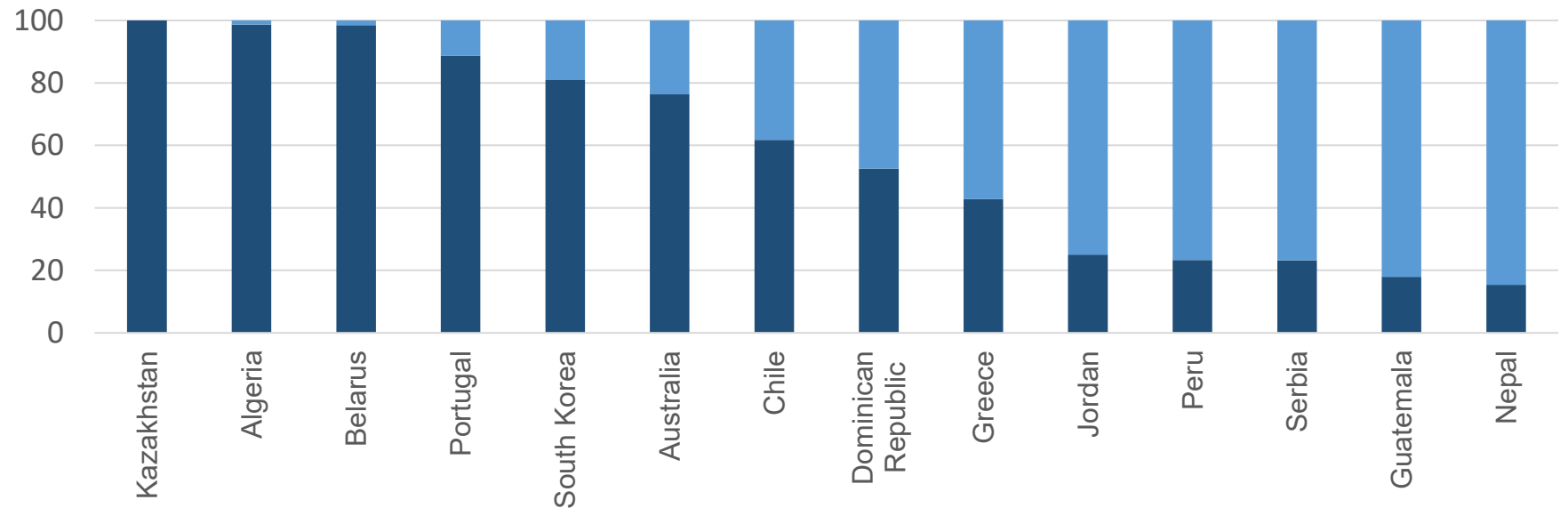
Patient Admission %



High participation

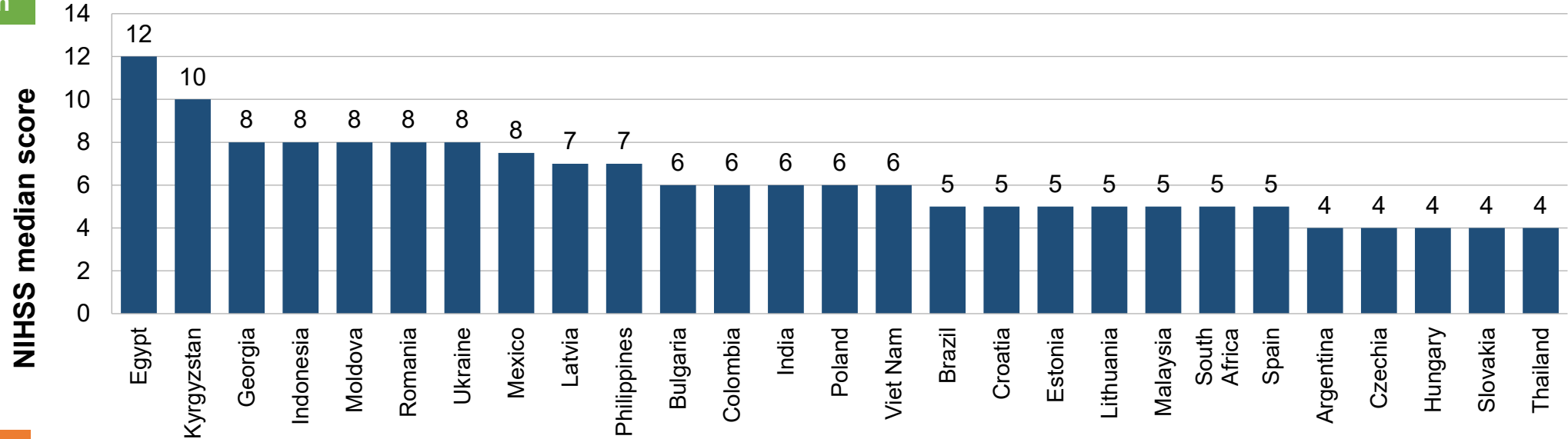


Low participation

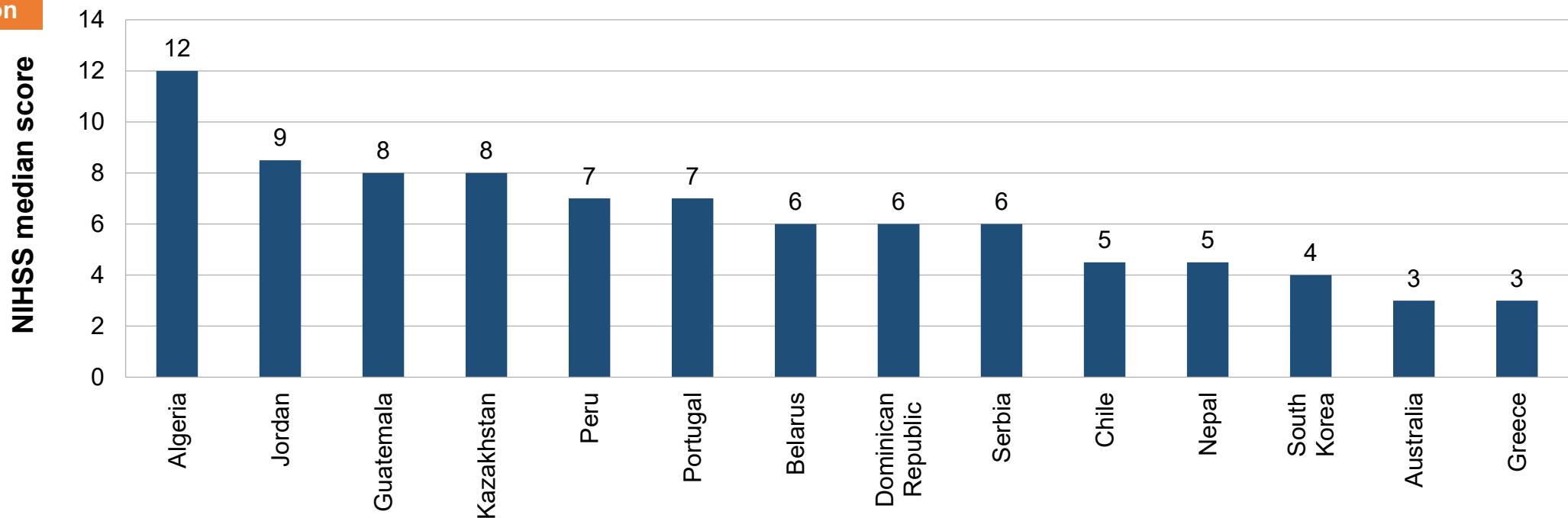


Median NIHSS score at Admission

High participation

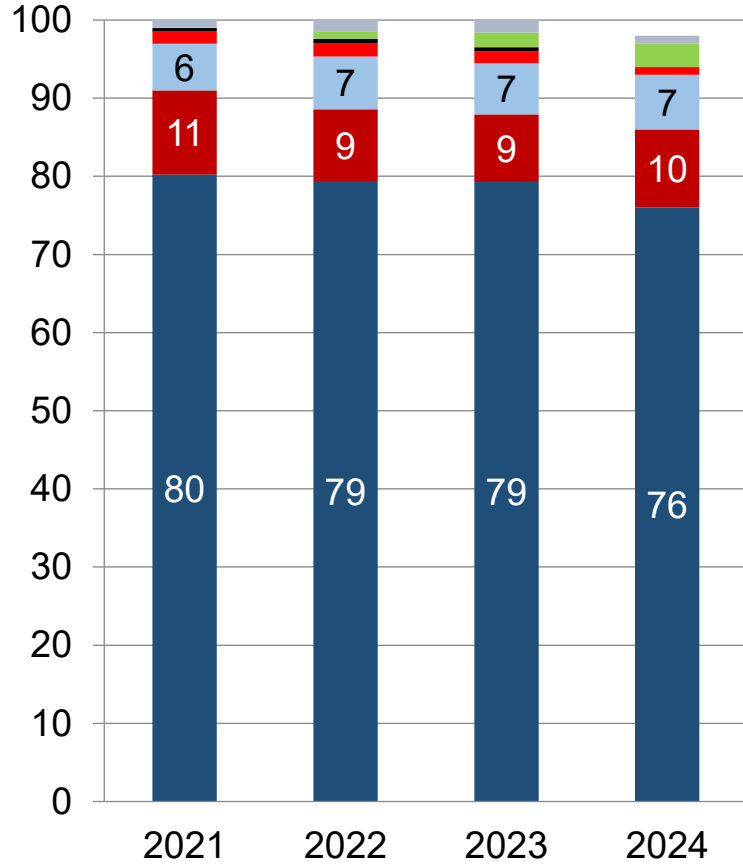


Low participation

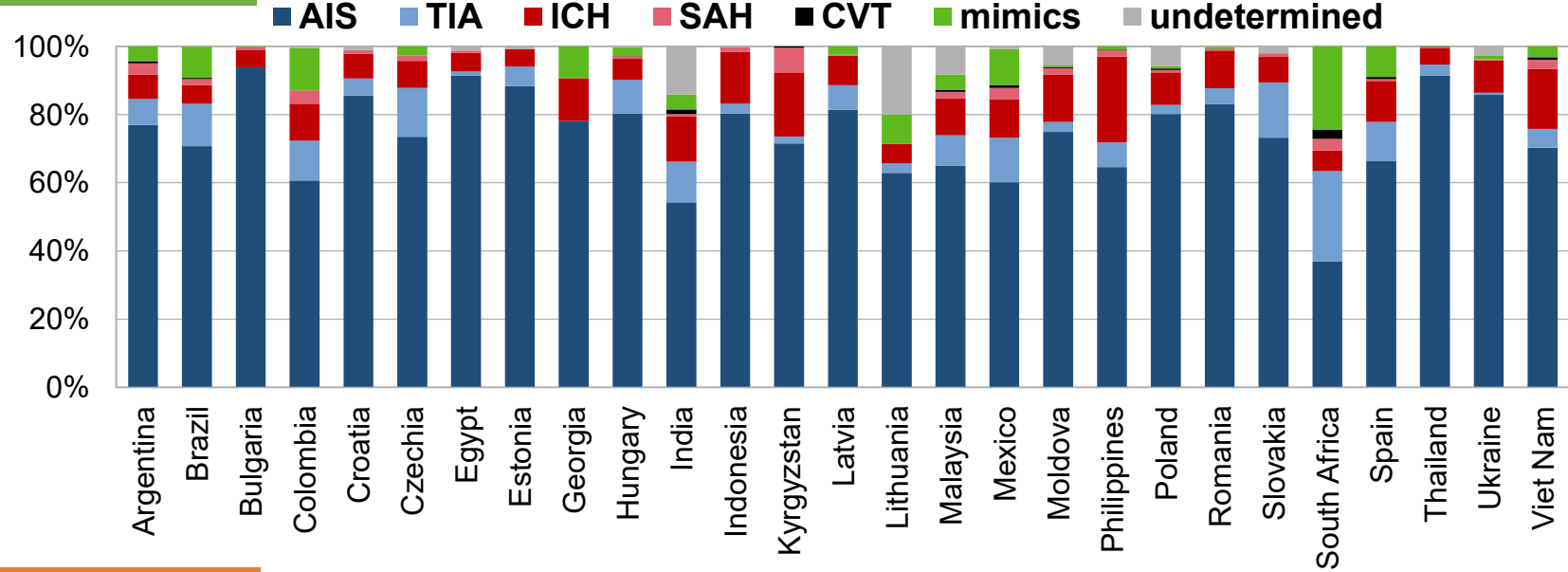


Stroke Type %

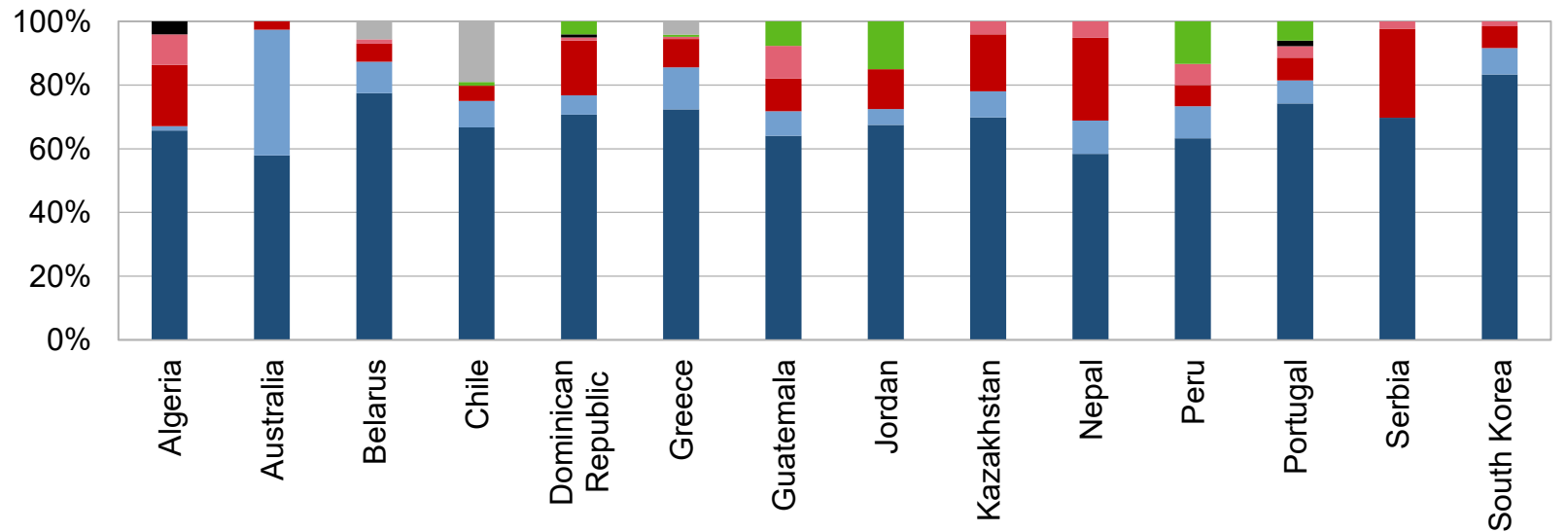
Stroke Type (%)



High participation



Low participation

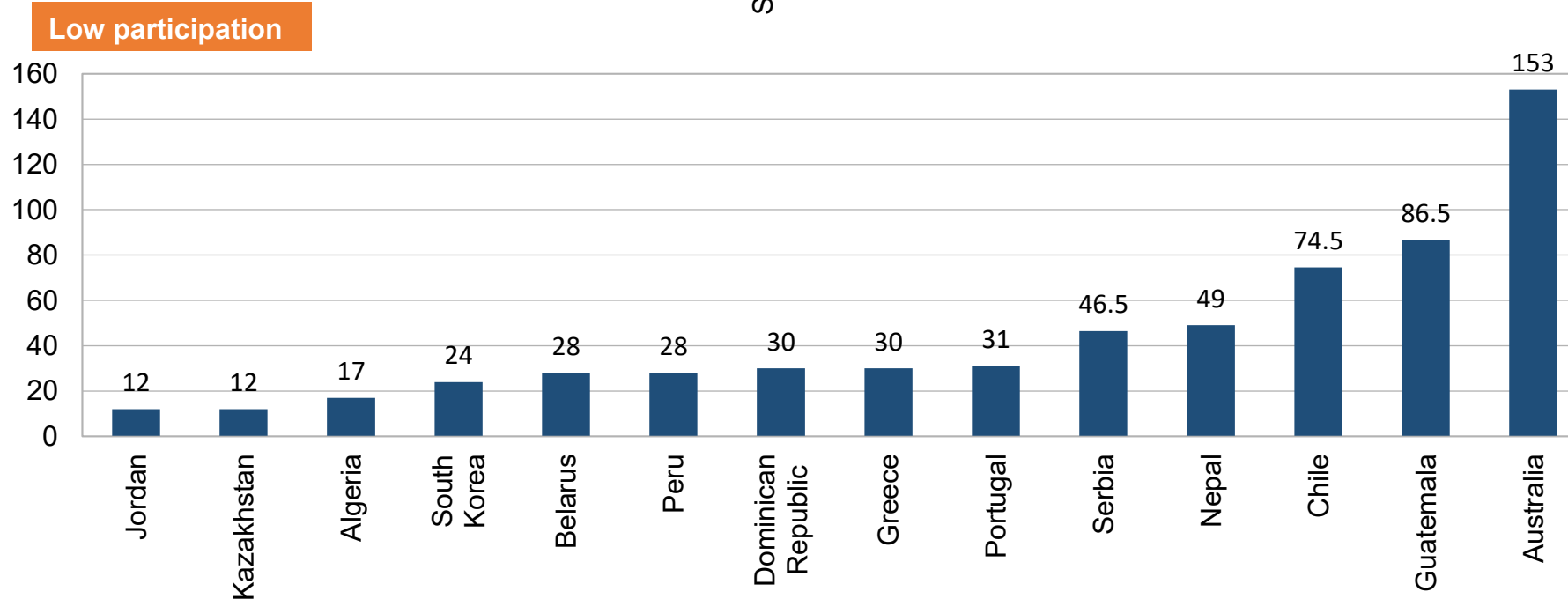
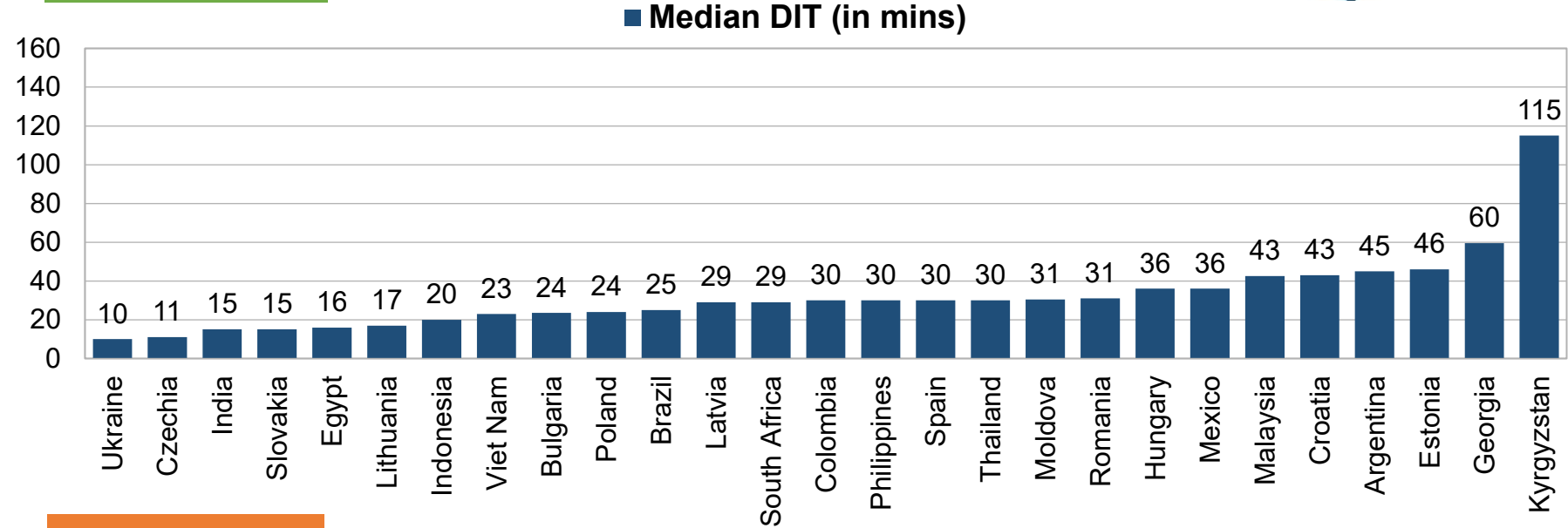
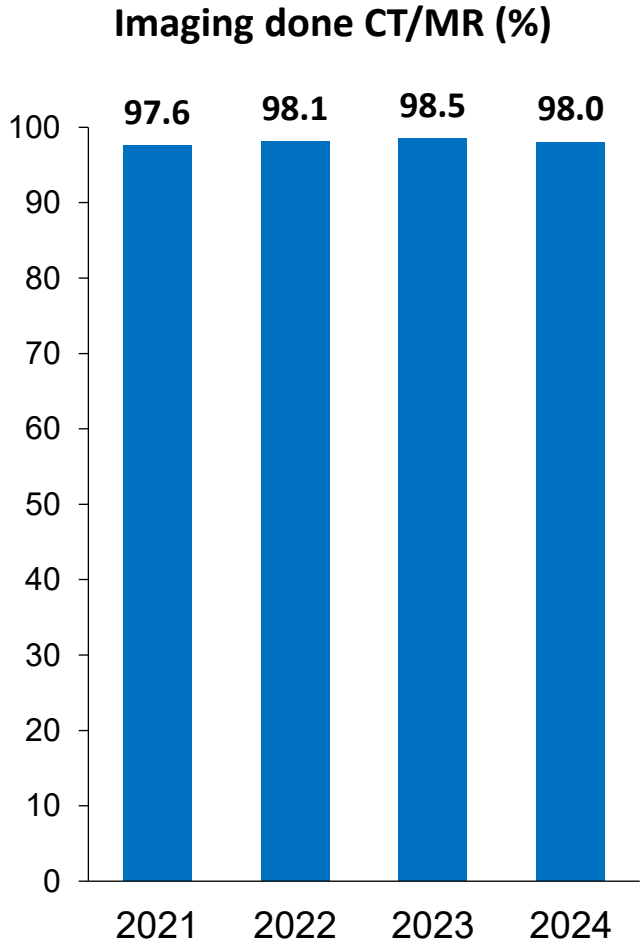


All stroke cases

Imaging done (%) and Median Door to Imaging time (in mins)



World - Median DIT is 36 mins High participation

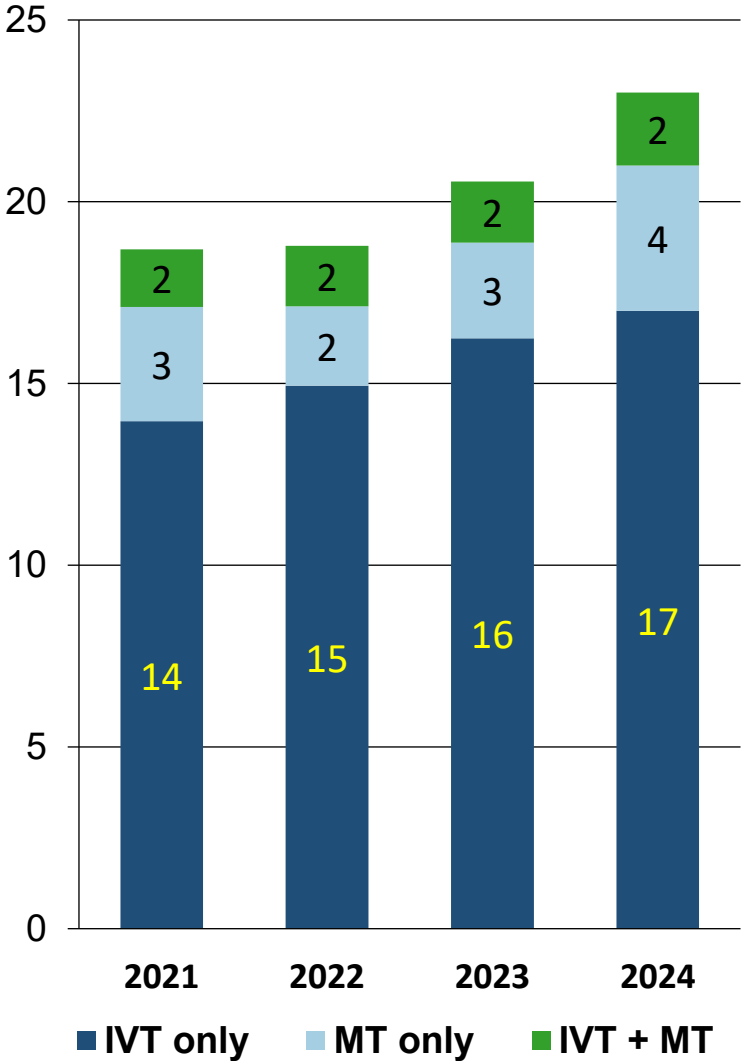


All stroke cases

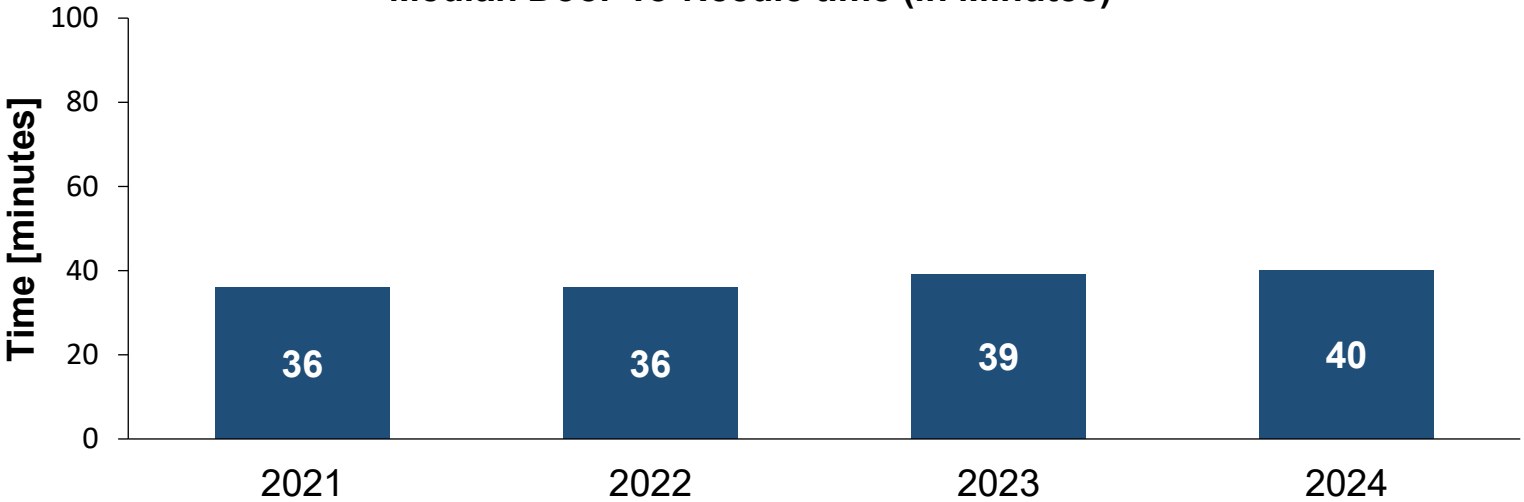
Recanalization rate, IVT and/ or MT rate - all countries



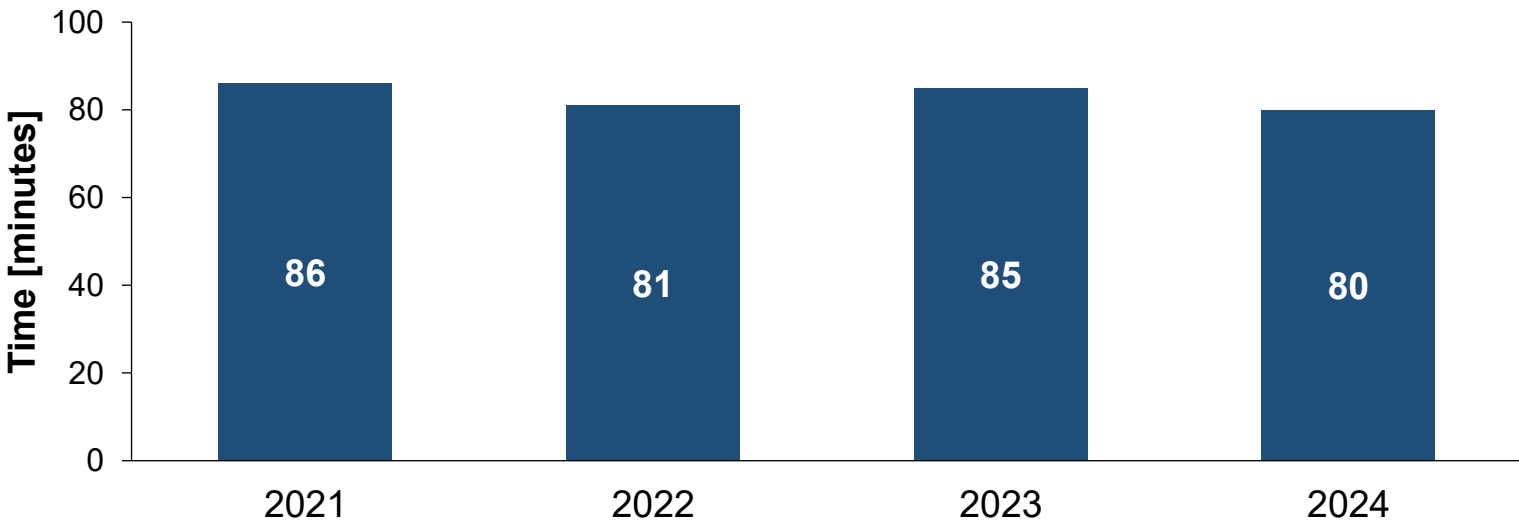
Recanalization rate (%) - IVT and/ or MT



Median Door-To-Needle time (in Minutes)



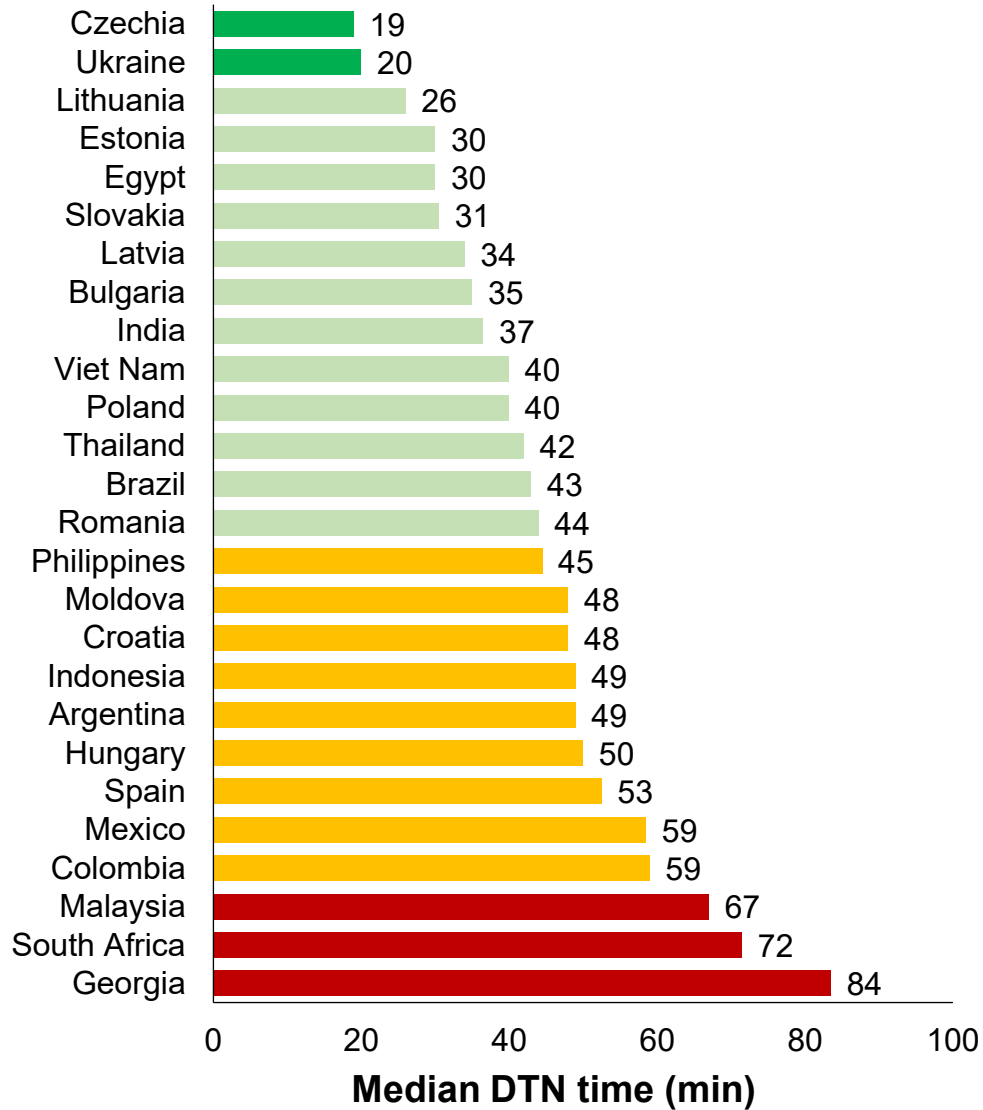
Median Door-To-Groin time (in Minutes)



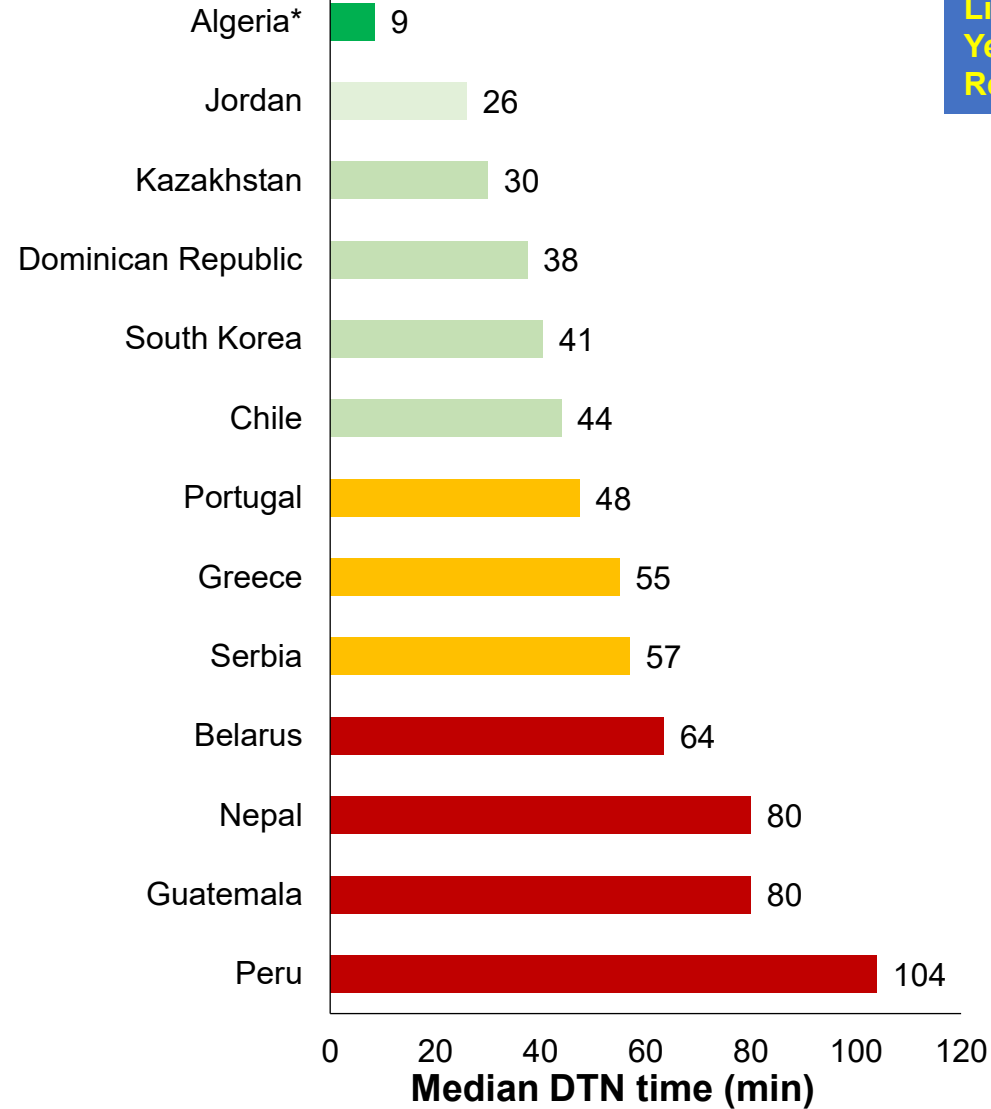
Median Door-To-Needle Time for Thrombolysed AIS Patients (in mins)



High participation



Low participation



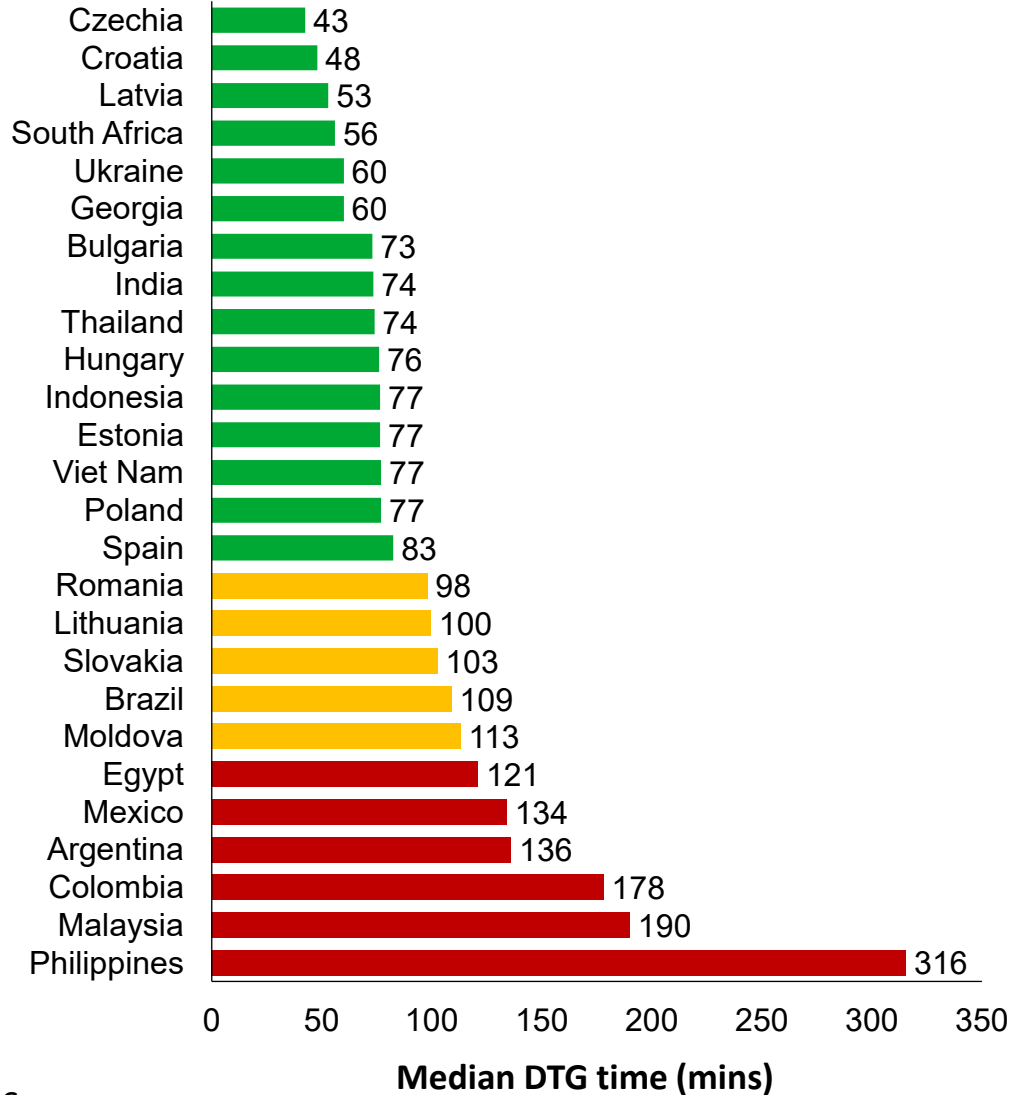
Green: DTN <= 20 mins
 Light Green: DTN <=45 mins
 Yellow: DTN <=60 mins
 Red: DTN > 60 mins

AIS and TIA

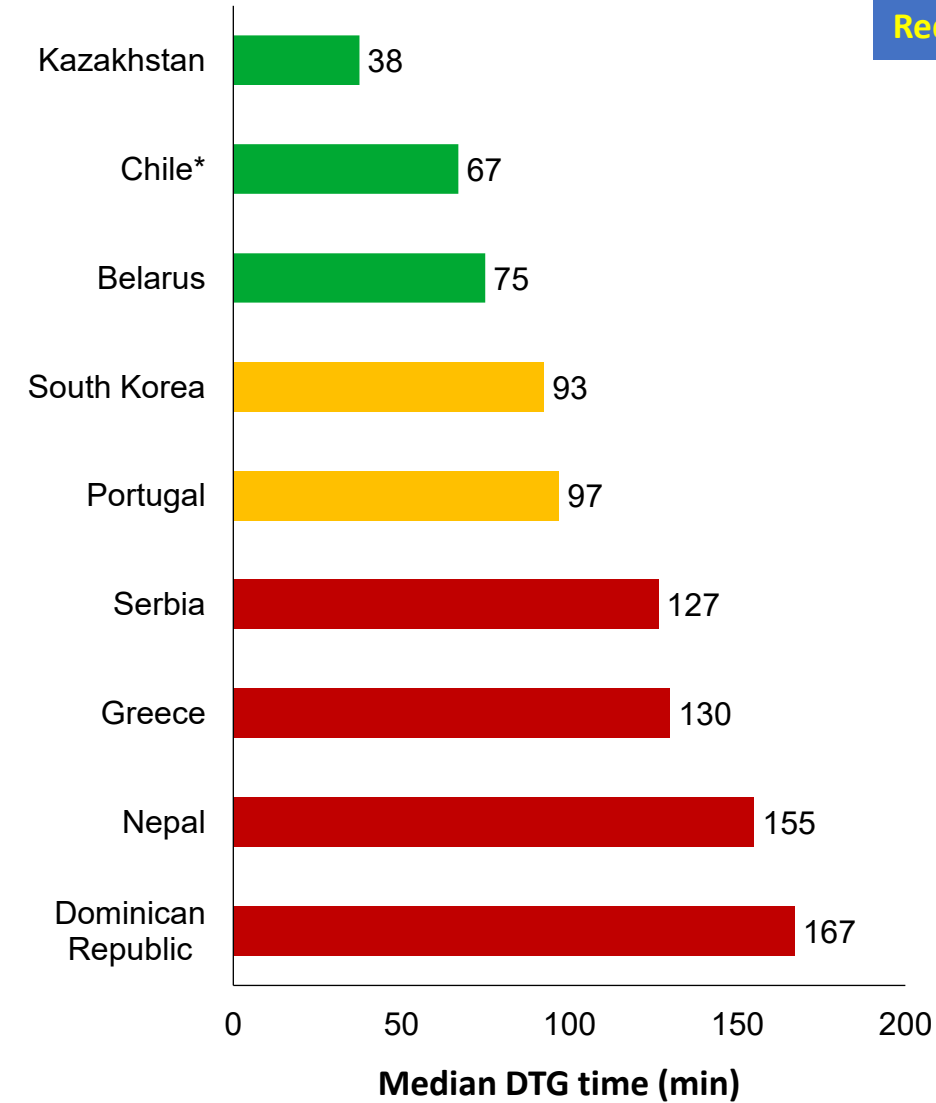
* Algeria DTN seems unrealistic. There is no RES-Q National Coordinator in Algeria to comment

Median Door-To-Groin Time for AIS Patients Treated with Mechanical Thrombectomy (in mins)

High participation



Low participation

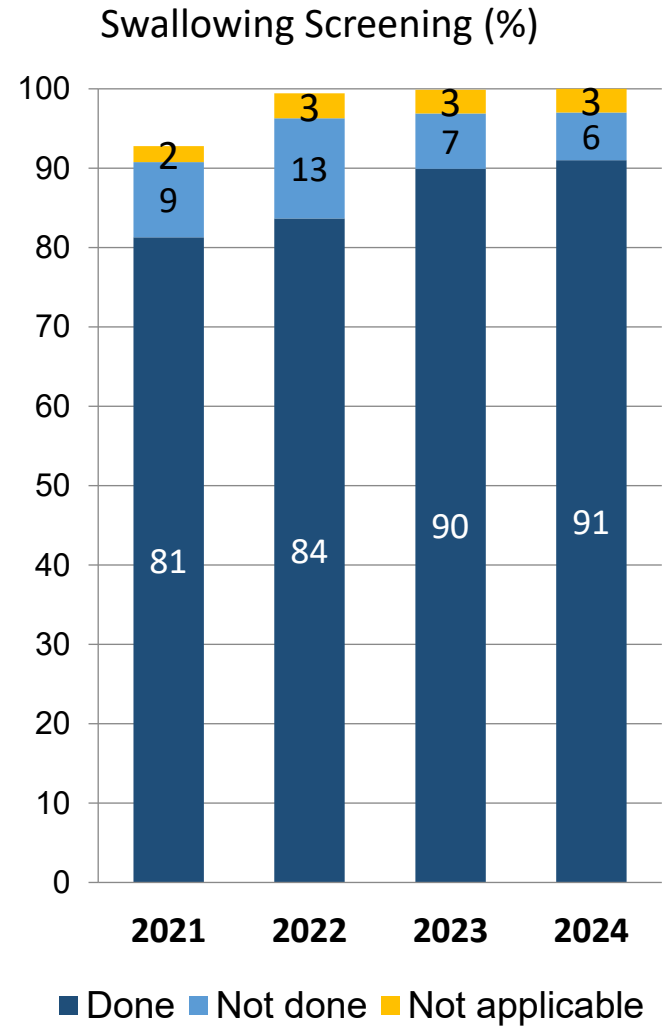


Green: DTG <= 90 mins
 Yellow: DTG <= 120 mins
 Red: DTG > 120 mins

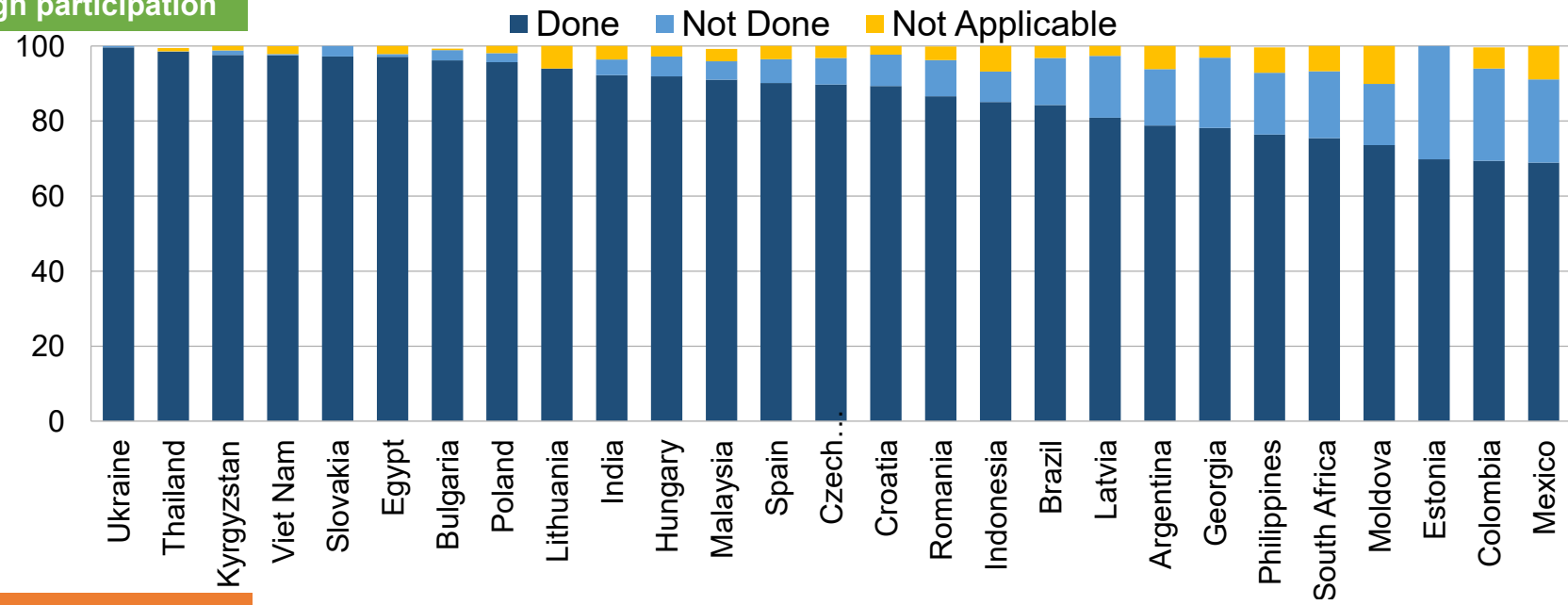
AIS cases

* As per Chile National Coordinator, the DTG time reported is low than the country reality

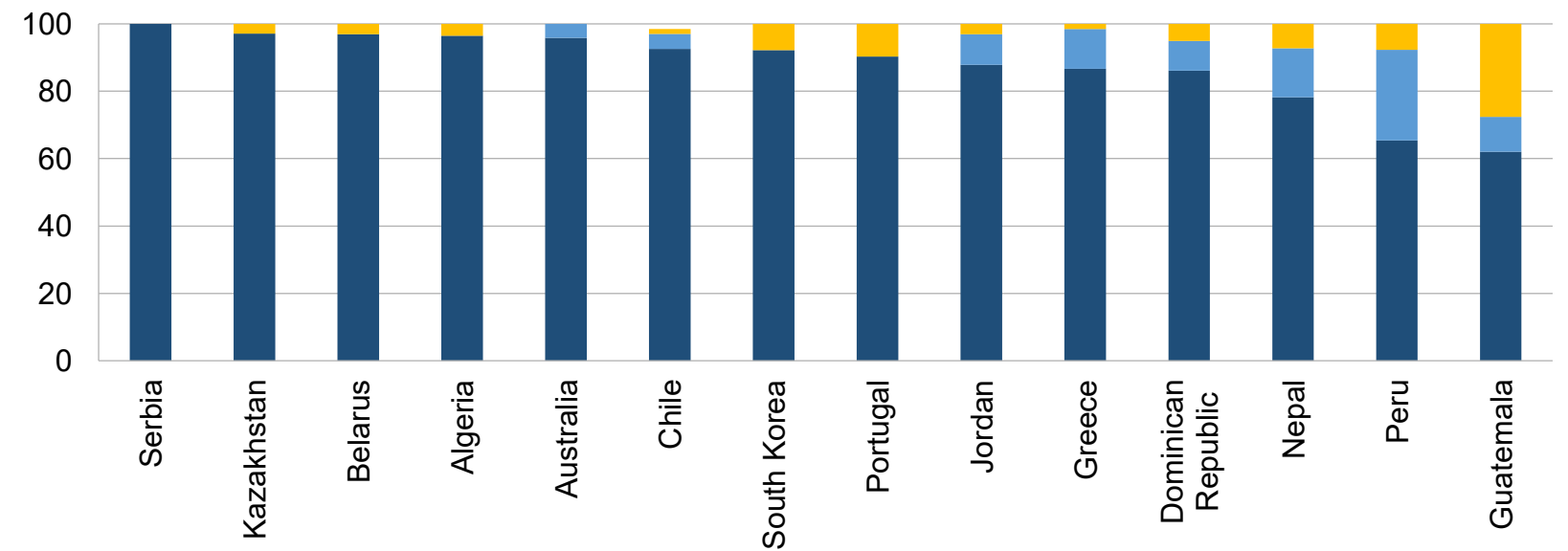
Swallowing Screening Performed (in %)



High participation



Low participation

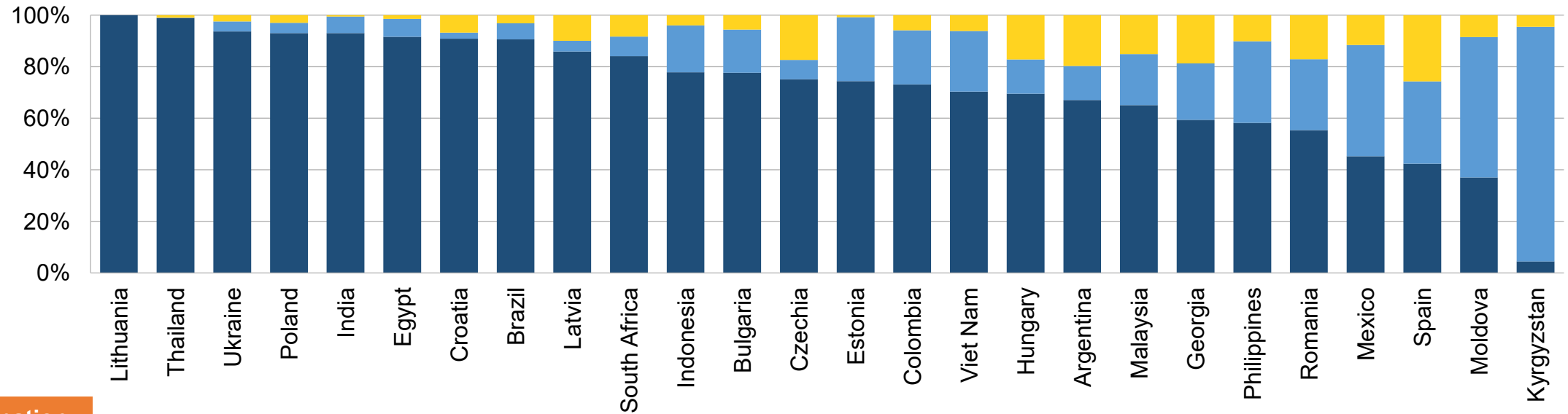


Physiotherapy: 78% cases done, 14% not done and 8% didn't require

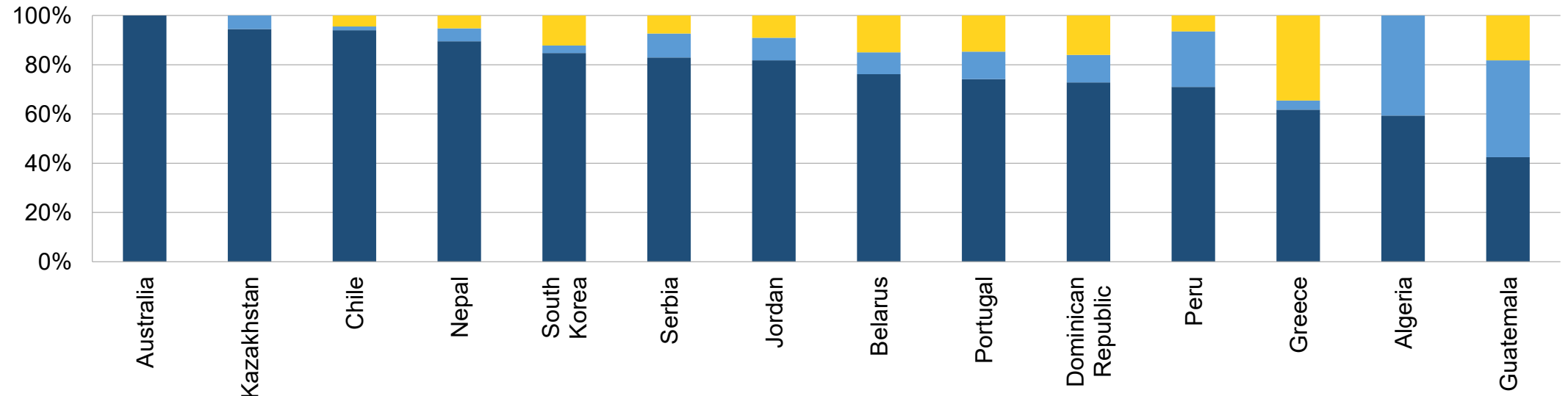


High participation

Done Not done Not required



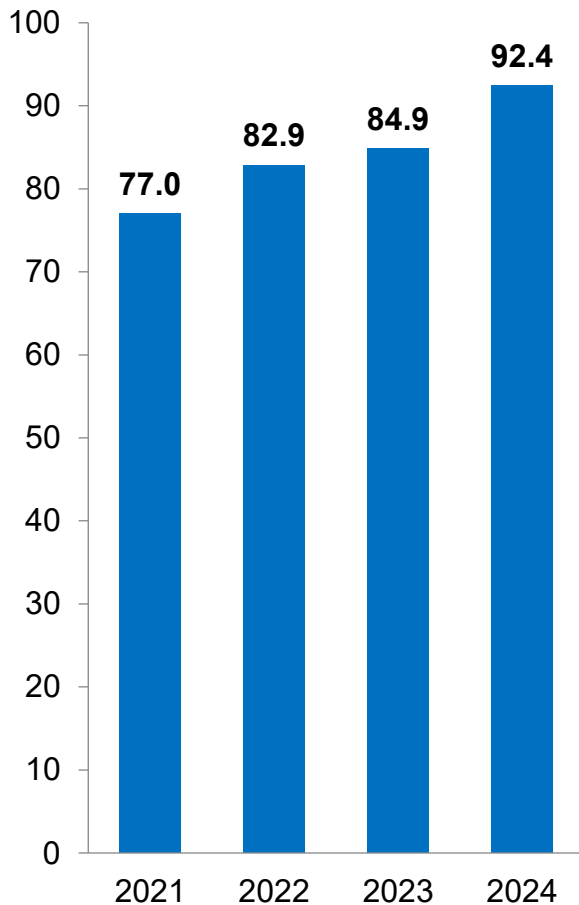
Low participation



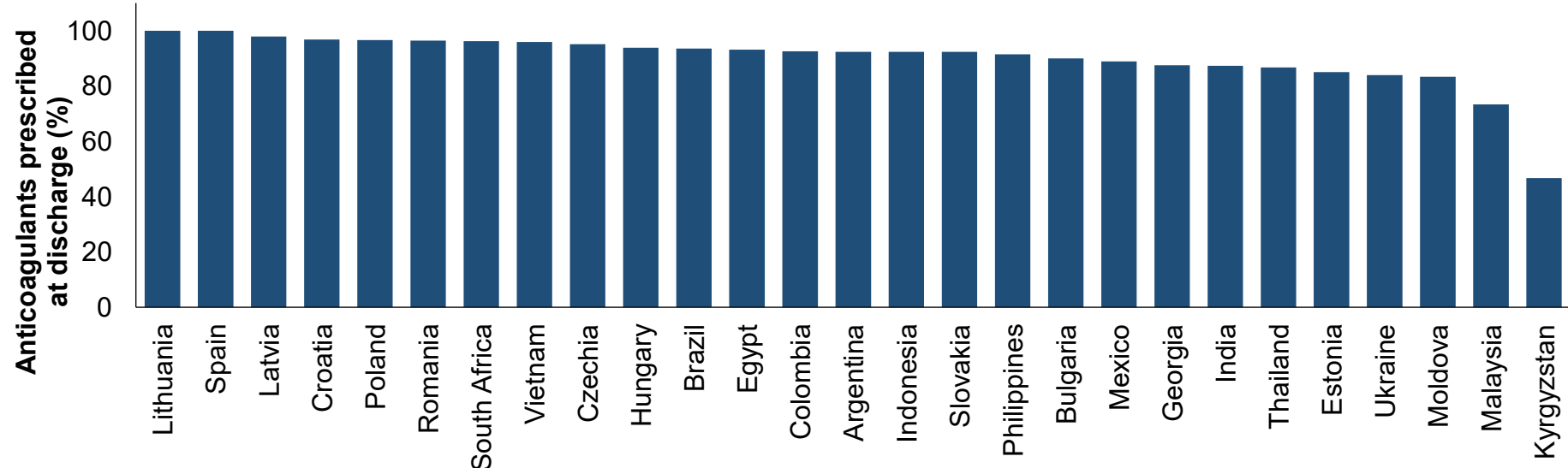
Patients with AFib prescribed Anticoagulant at Discharge (in %)



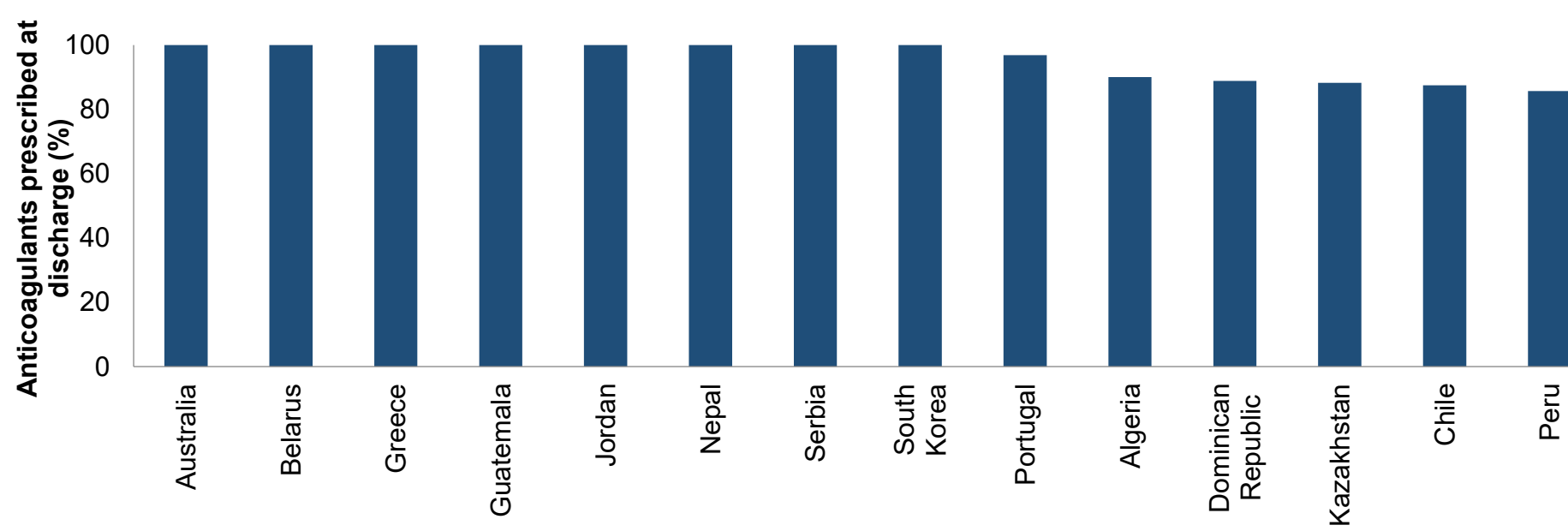
AFib patients Rxd anti coagulant at discharge(%)



High participation



Low participation

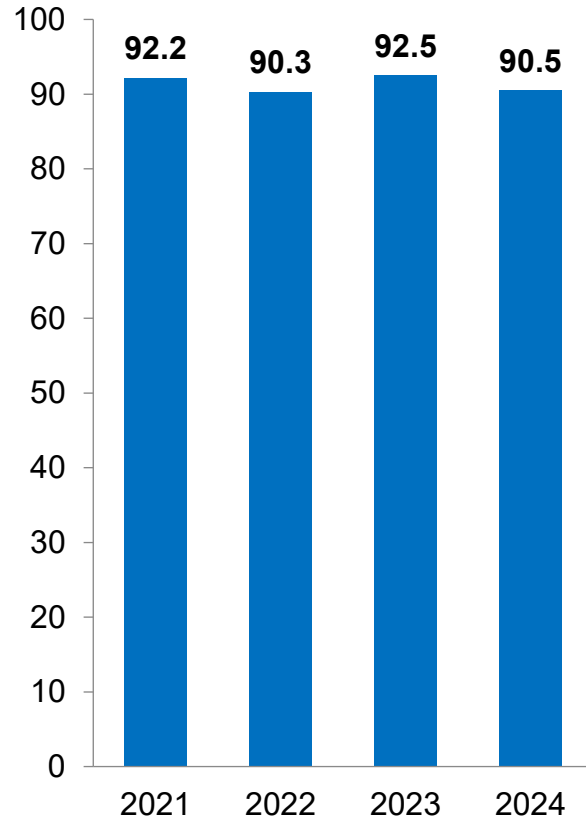


AIS, TIA stroke cases

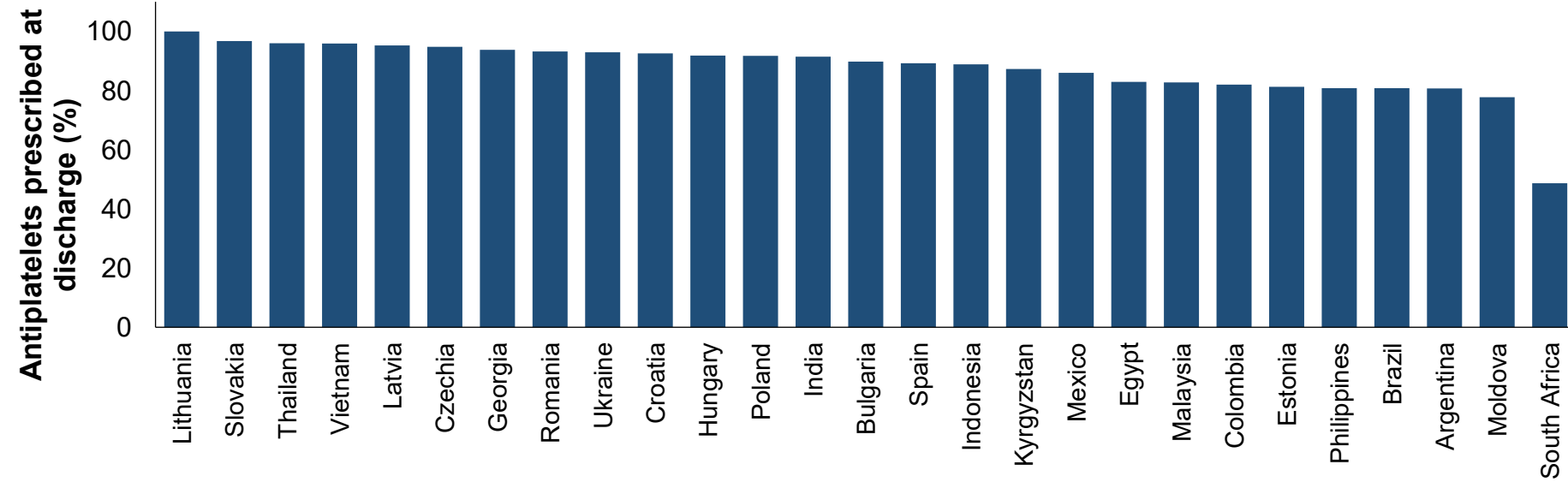
Patients with non AFib prescribed Antiplatelets at Discharge (in %)



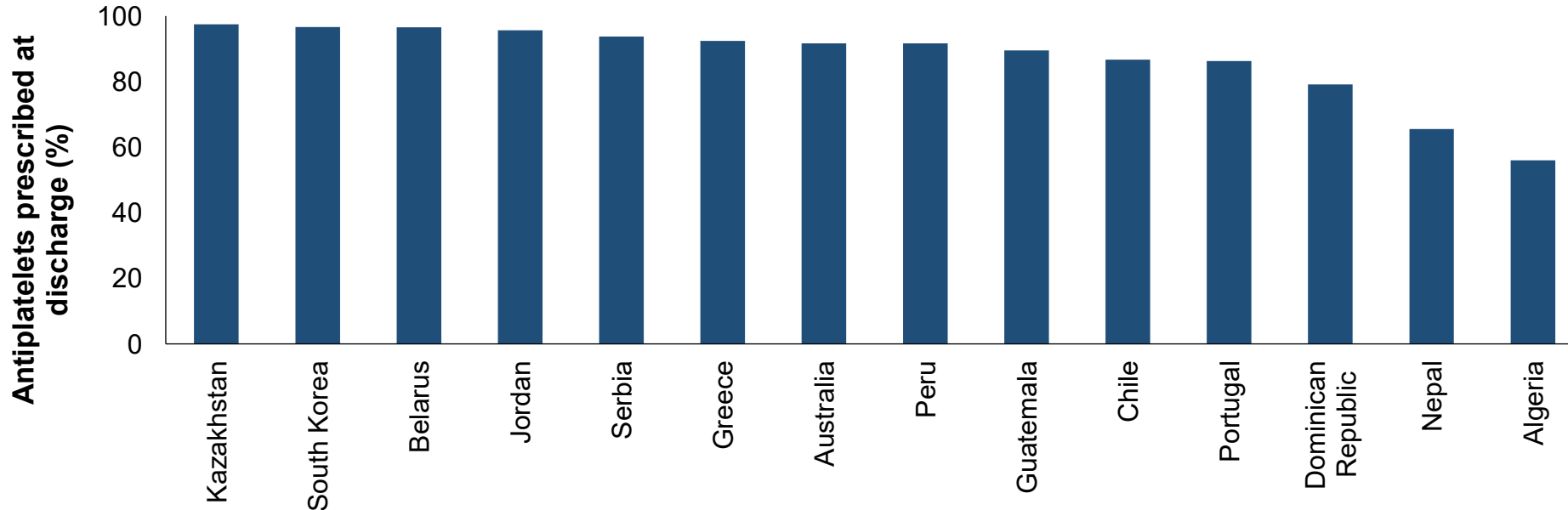
Non Afib Patients prescribed Antiplatelets at discharge (%)



High participation

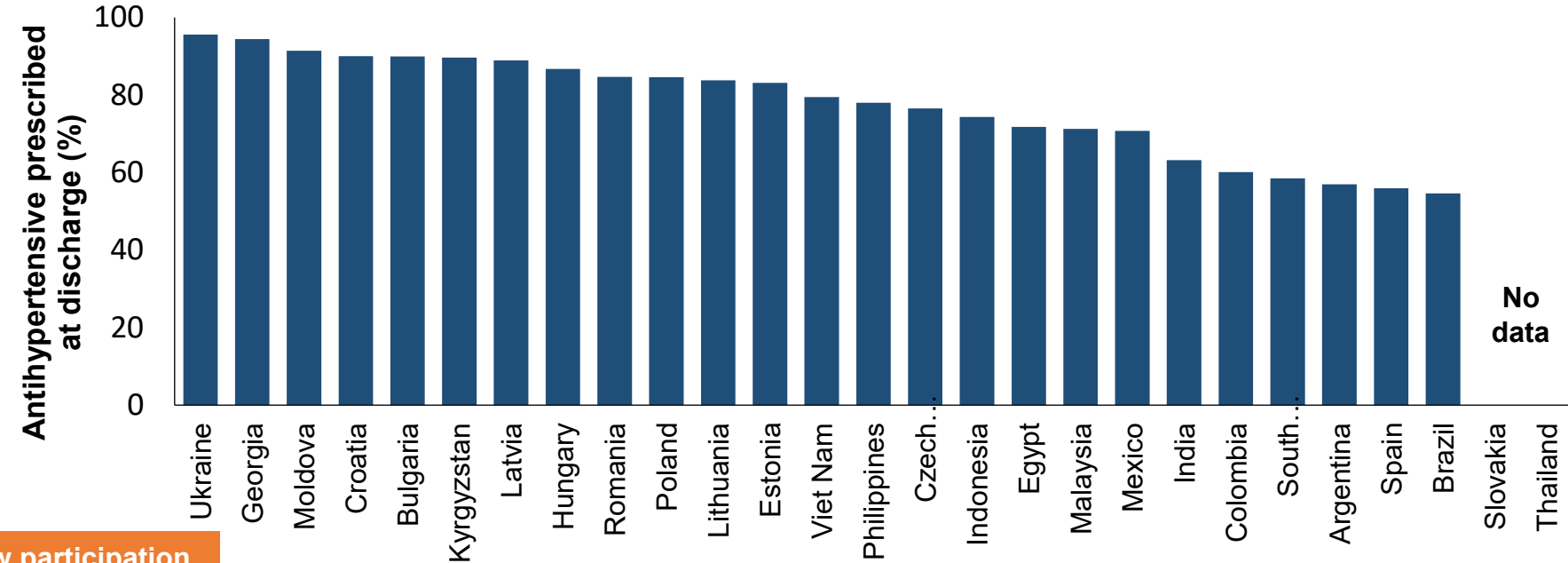
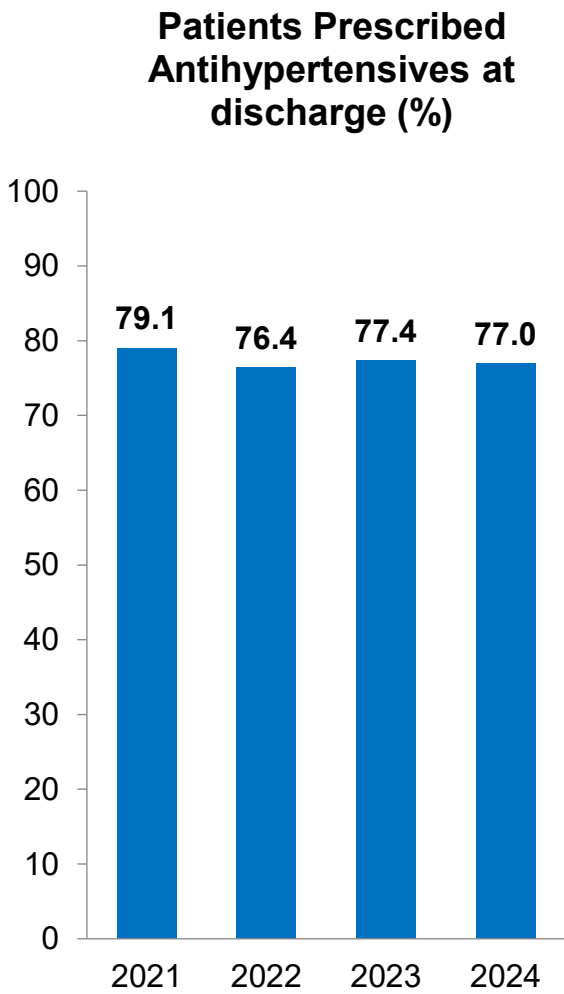


Low participation

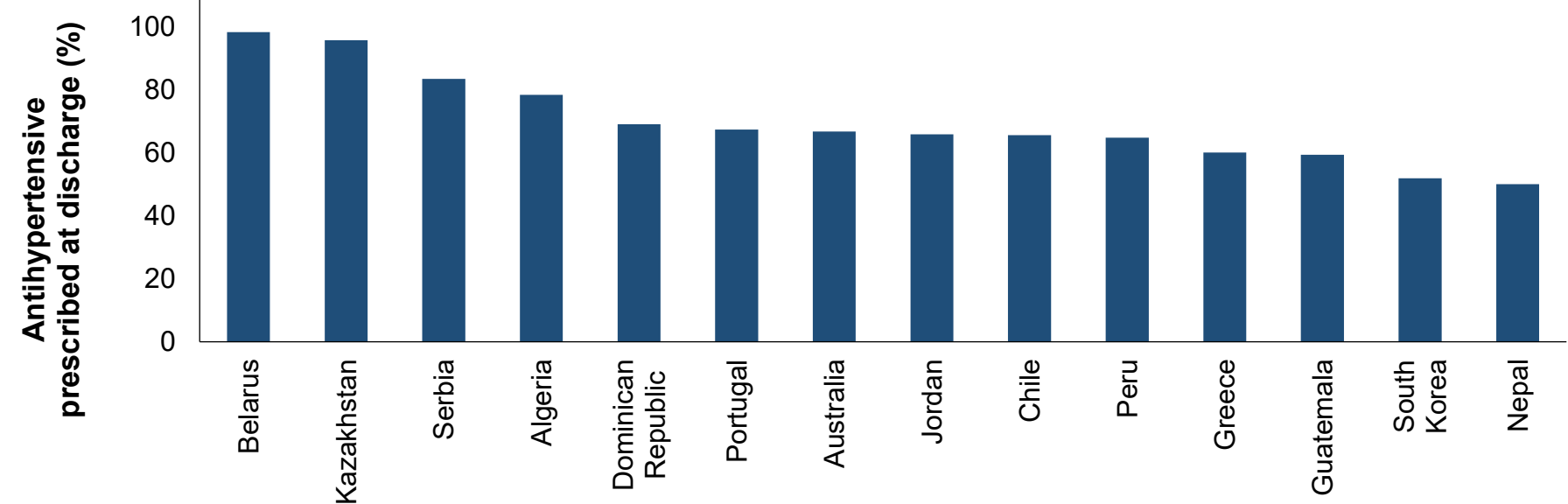


Antihypertensive Medication Prescribed at Discharge (in %)

High participation

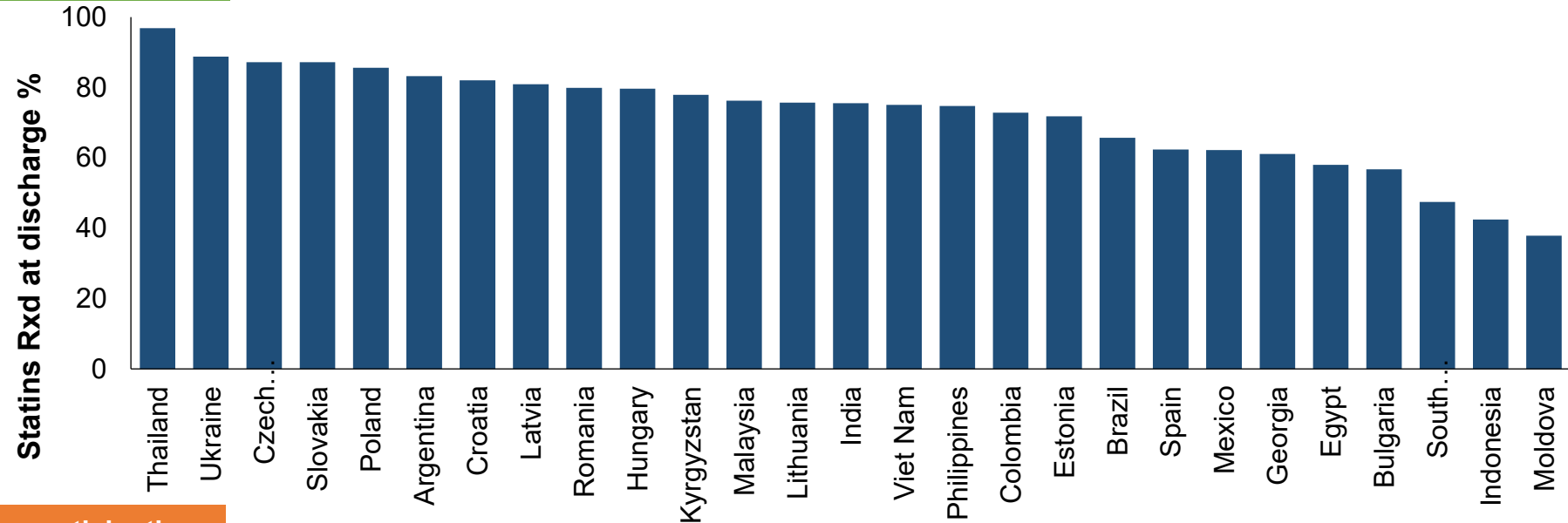


Low participation

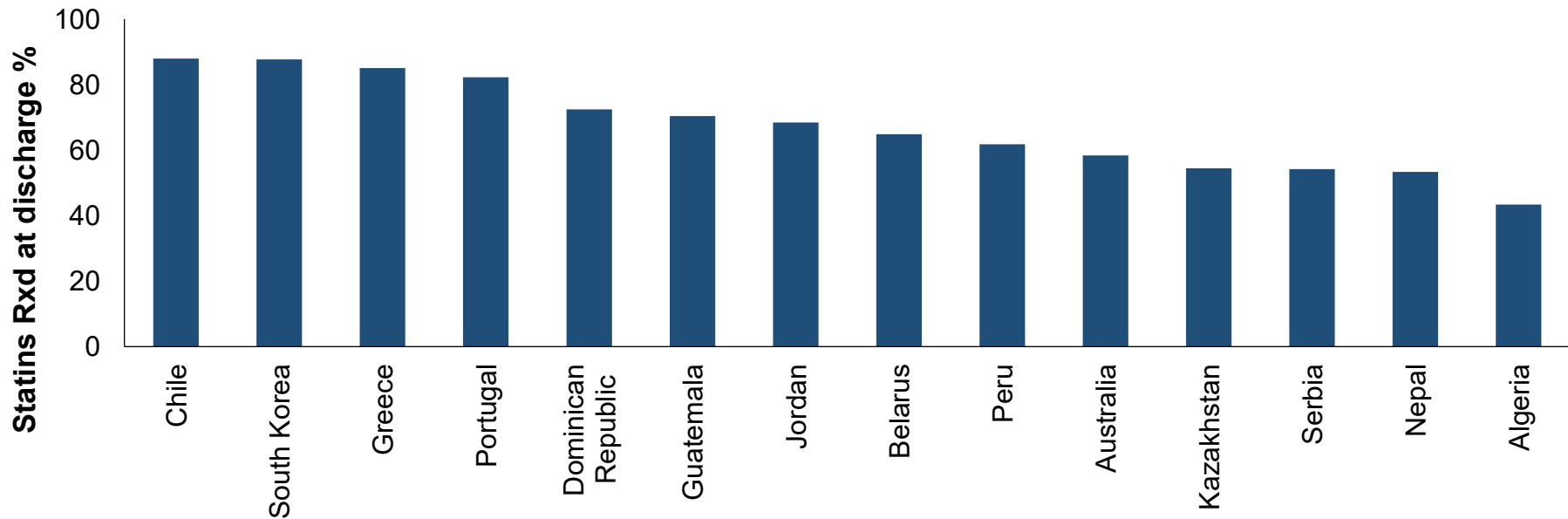


Statins Prescribed at Discharge (in %)

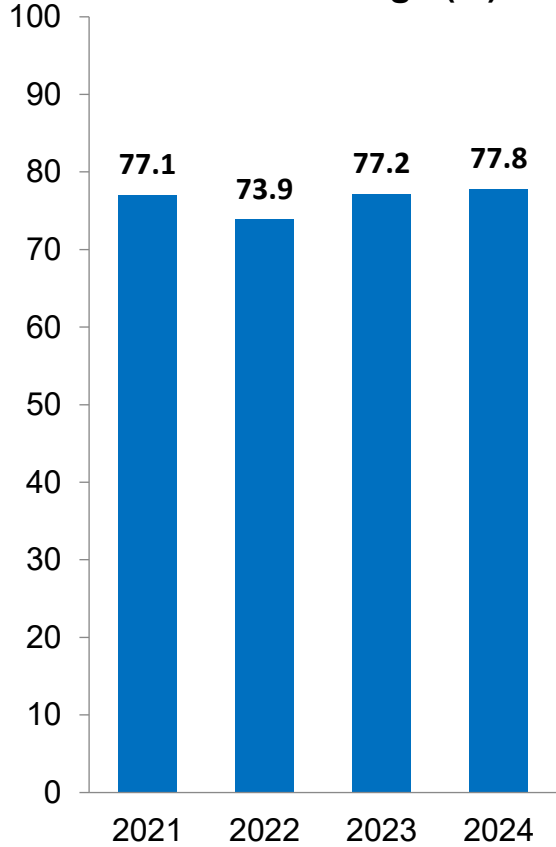
High participation



Low participation

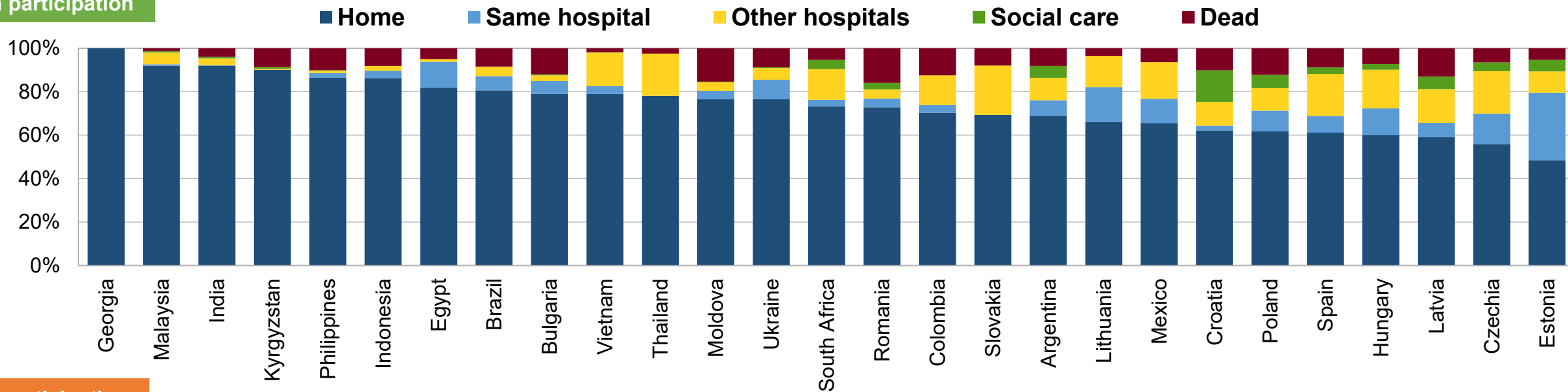


Patients prescribed Statins at discharge (%)

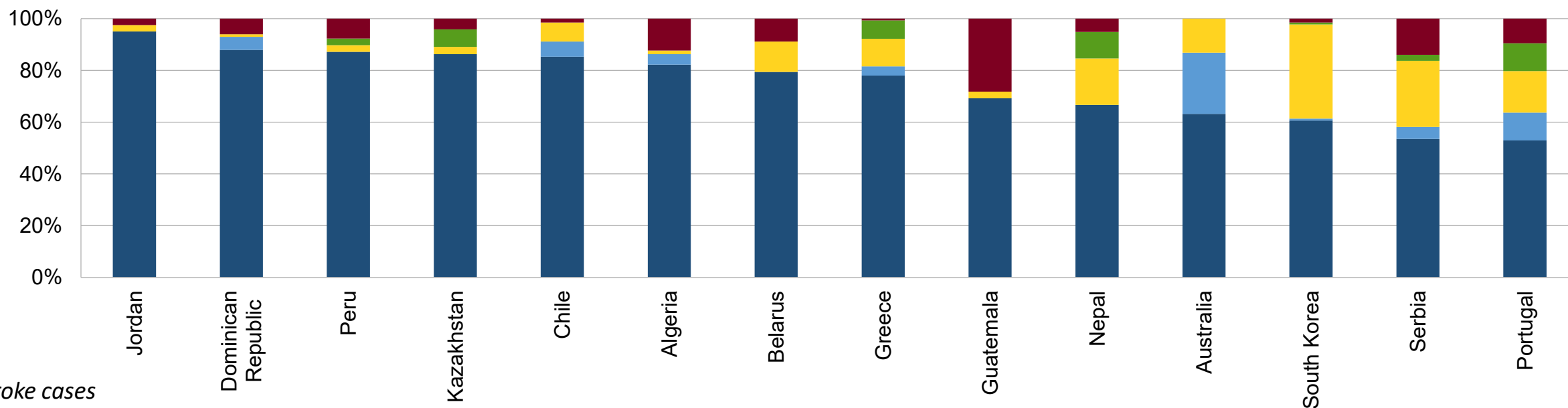


Discharge Destination (in %)

High participation



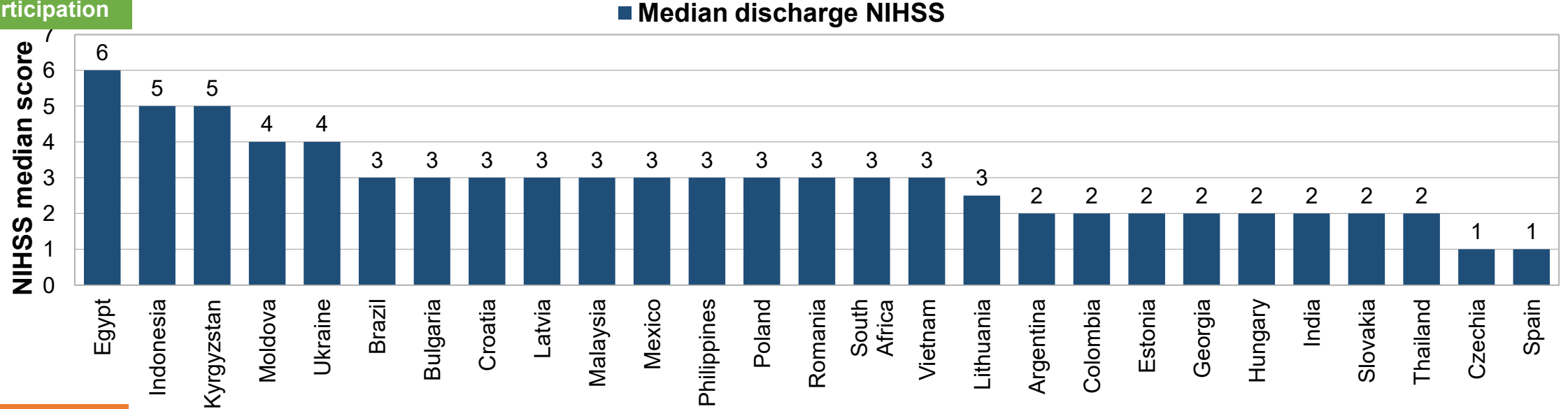
Low participation



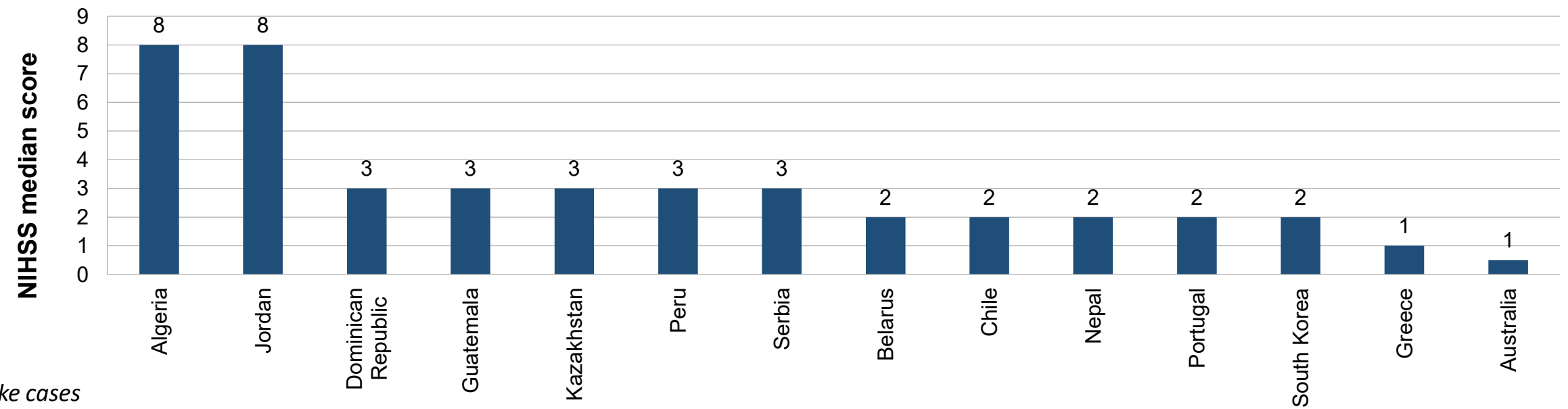
All stroke cases

Median NIHSS at discharge

High participation



Low participation



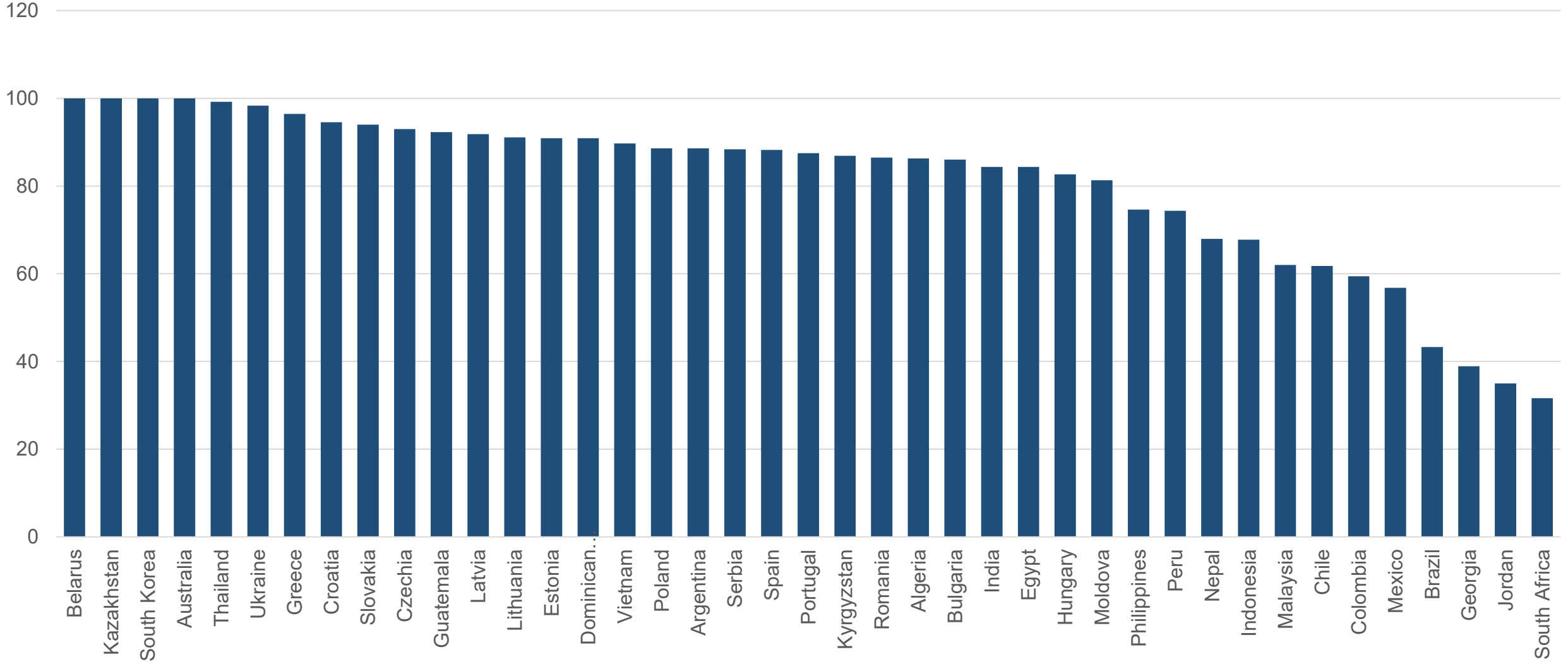
All stroke cases

* As per Chile NC, the NIHSS at discharge reported is low than the country reality

Patients assessed on Modified Rankin Scale (mRS) on Discharge (%)



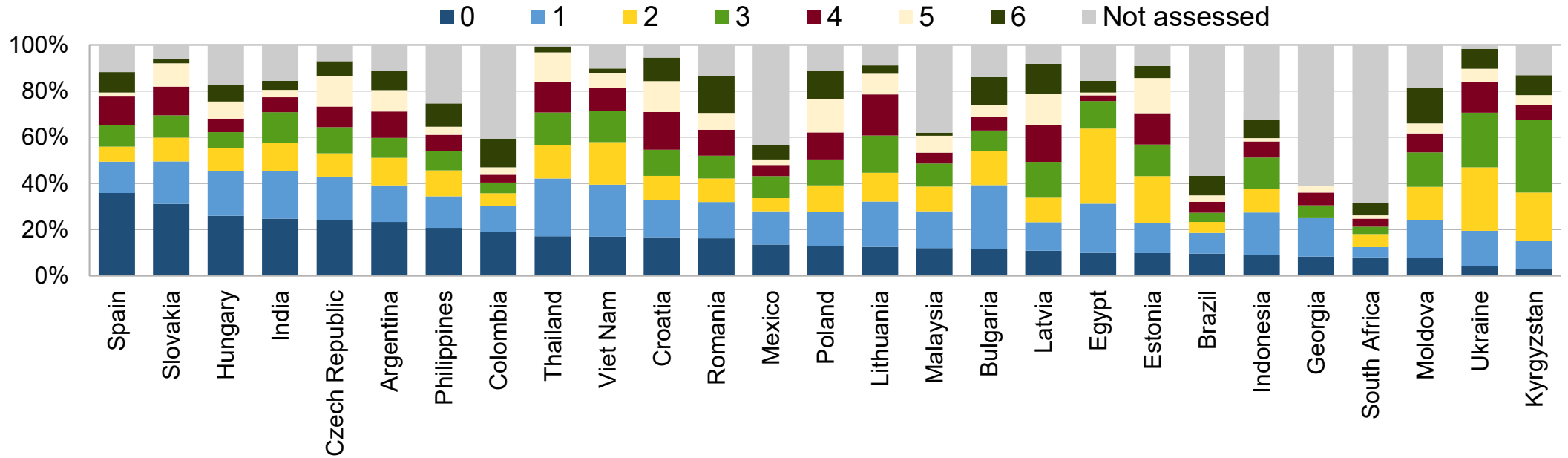
% patients assessed for mRS at discharge



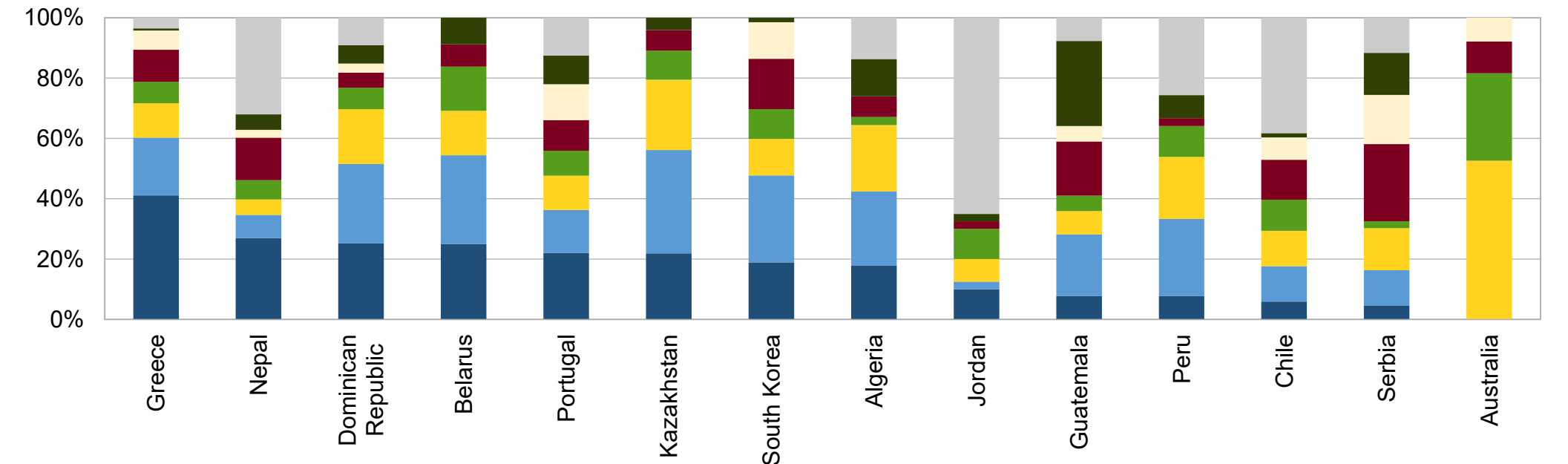
All stroke cases

mRS on Discharge - Distribution (in %)

High participation



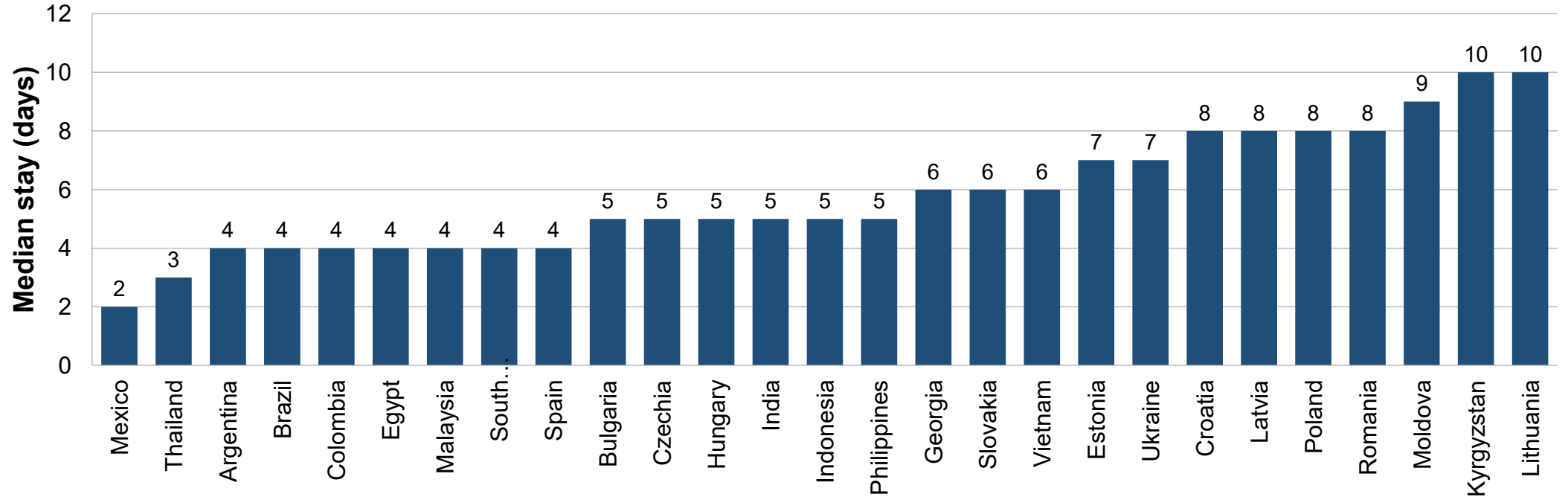
Low participation



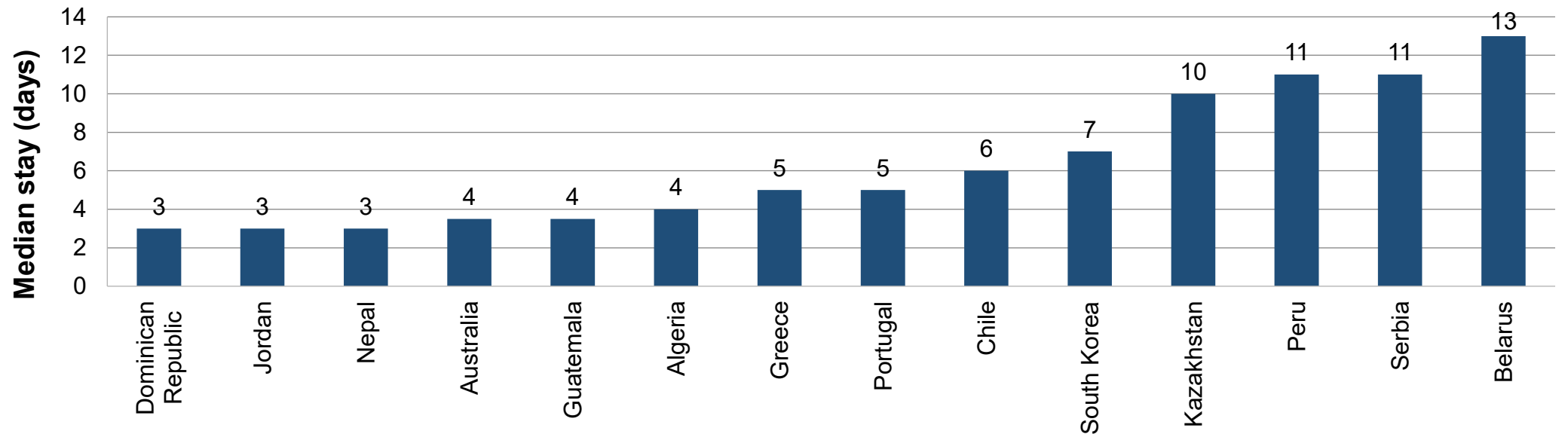
All stroke cases

Median Hospital Stay (Days)

High participation

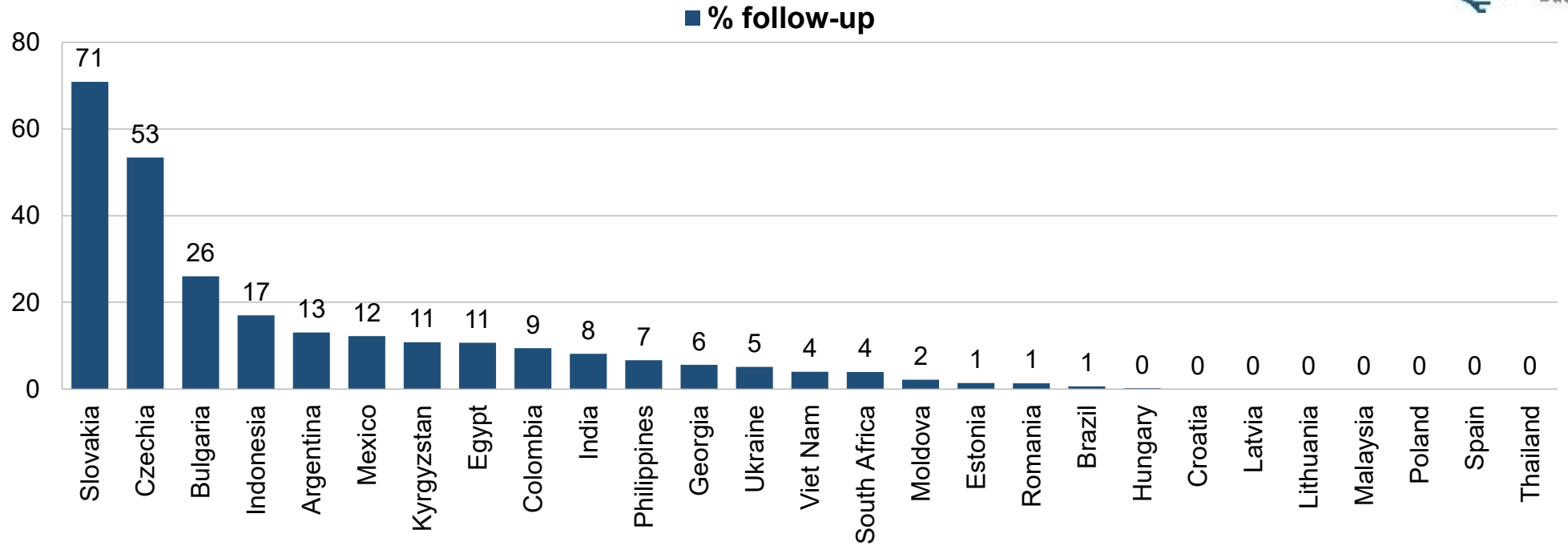


Low participation

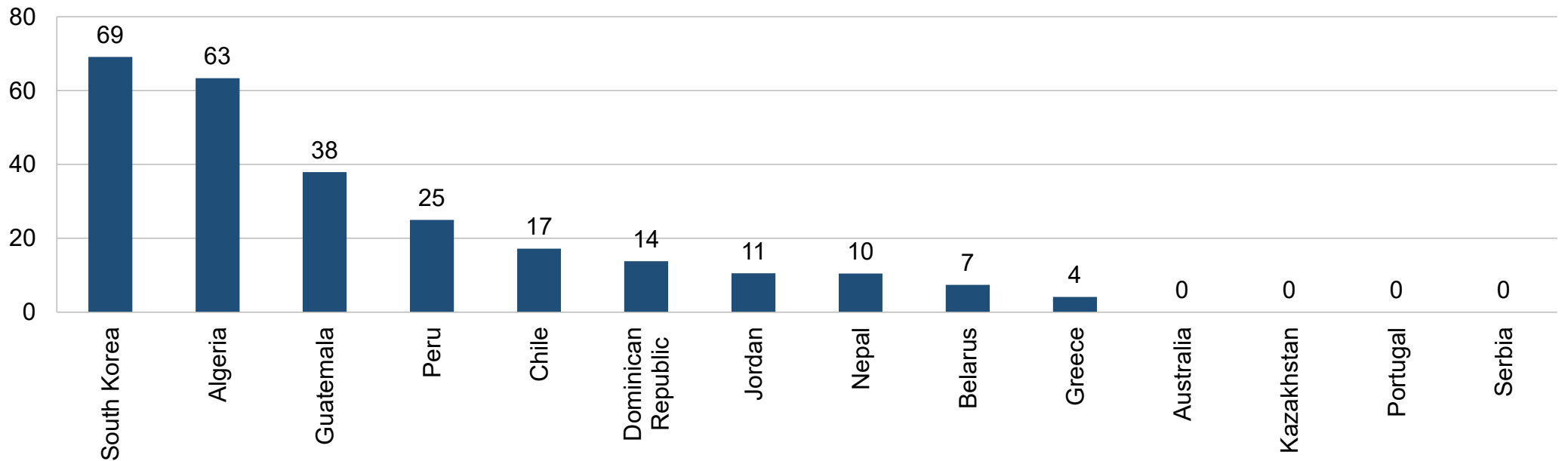


3 months follow up (overall 8.5%)

High participation



Low participation





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