

## Supplement Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to: SVIN Global COVID Stroke Registry. Global impact of the COVID-19 pandemic on stroke volumes: one-year follow-up

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**eTable 1.** STROBE Statement—checklist of items in reports of observational studies

	Item No	Recommendation	Page No
Title and abstract	1	(a) Indicate the study’s design with a commonly used term in the title or the abstract	Abstract Page 2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Abstract Page 2,3
Introduction			
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	Page 4
Objectives	3	State specific objectives, including any prespecified hypotheses	Page 5
Methods			
Study design	4	Present key elements of study design early in the paper	Page 5,6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page 6
Participant	6	(a) <i>Cross-sectional study</i> —Give the eligibility criteria, and the sources and methods of selection of participants	Page 6
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Page 7
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	Page 7,8
Bias	9	Describe any efforts to address potential sources of bias	Page 8
Study size	10	Explain how the study size was arrived at The study size was by the number of submitted cases	Page 11

Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Page 9
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Page 9
		(b) Describe any methods used to examine subgroups and interactions	Page 10
		(c) Explain how missing data were addressed	Page 8,9
		(d) <i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	Page 9
		(e) Describe any sensitivity analyses	n/a

## Results

Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	Page 11
		(b) Give reasons for non-participation at each stage	n/a
		(c) Consider use of a flow diagram	n/a
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Page 11
		(b) Indicate number of participants with missing data for each variable of interest	Page 6
Outcome data	15*		
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	Page 11,12
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	Page 11,12

		(b) Report category boundaries when continuous variables were categorized	n/a
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Page 13,14
<b>Discussion</b>			
Key results	18	Summarise key results with reference to study objectives	Page 14
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	Page 17
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Page 17,18
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page 14,15
<b>Other information</b>			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	Page 18

**eTable 2****Timeline of first reported cases, 1st wave peak, and 2nd wave peak by country**

<b>Country</b>	1st reported case <sup>1</sup>	1st wave peak	Second wave date <sup>2</sup>
Argentina	3/3/2020	10/21/2020	12/11/2020
Australia	1/25/2020	3/20/2020	6/9/2020
Austria	2/25/2020	3/28/2020	6/30/2020
Bangladesh	3/8/2020	7/2/2020	2/24/2021
Belgium	2/3/2020	4/14/2020	7/10/2020
Brazil	2/25/2020	7/29/2020	11/5/2020
Bulgaria	3/8/2020	4/27/2020	5/30/2020
Canada	1/25/2020	4/22/2020	8/17/2020
Chile	3/3/2020	6/12/2020	11/24/2020
China	12/1/2019	2/14/2020	5/19/2020
Colombia	3/6/2020	8/16/2020	10/4/2020
Croatia	2/25/2020	4/1/2020	6/7/2020
Czech Republic	3/1/2020	3/31/2020	5/13/2020
Denmark	2/27/2020	4/9/2020	7/8/2020
Egypt	2/14/2020	6/16/2020	10/9/2020
Finland	1/29/2020	4/10/2020	7/30/2020
France	1/24/2020	4/18/2020	6/28/2020
Germany	1/27/2020	4/2/2020	6/15/2020
Greece	2/26/2020	4/3/2020	6/3/2020
Guatemala	3/13/2020	7/18/2020	9/5/2020
India	1/30/2020	9/16/2020	2/14/2021
Indonesia	3/2/2020	2/1/2021	5/18/2021

Iran	2/19/2020	4/2/2020	5/3/2020
Israel	2/21/2020	4/5/2020	5/24/2020
Italy	1/30/2020	3/26/2020	6/3/2020
Japan	1/16/2020	4/5/2020	5/27/2020
Kenya	3/13/2020	8/3/2020	9/20/2020
Korea	1/20/2020	3/4/2020	5/6/2020
Macedonia	2/26/2020	4/18/2020	5/8/2020
Malaysia	1/25/2020	4/8/2020	6/6/2020
Mexico	2/28/2020	8/1/2020	9/22/2020
Netherlands	2/27/2020	4/11/2020	7/10/2020
New Zealand	2/28/2020	4/5/2020	8/10/2020
Nigeria	2/27/2020	7/2/2020	10/25/2020
Norway	2/26/2020	3/28/2020	7/22/2020
Oman	2/24/2020	7/15/2020	8/23/2020
Pakistan	2/26/2020	6/19/2020	9/1/2020
Peru	3/6/2020	6/2/2020	7/5/2020
Phillippines	1/30/2020	8/15/2020	1/7/2021
Poland	3/4/2020	11/11/2020	2/8/2021
Portugal	3/2/2020	4/11/2020	8/9/2020
Republic of Moldova	3/7/2020	12/11/2020	1/22/2021
Romania	2/26/2020	4/17/2020	6/2/2020
Singapore	1/23/2020	4/26/2020	6/10/2020
Slovakia	3/6/2020	4/20/20	6/4/2020
Spain	1/31/2020	3/31/2020	7/5/2020
Sweden	1/31/2020	6/24/2020	9/2/2020
Switzerland	2/25/2020	3/25/2020	6/8/2020

Taiwan	1/13/2020	3/25/2020	2/17/2021
Thailand	1/13/2020	4/3/2020	11/20/2020
Tunisia	3/2/2020	4/6/2020	6/9/2020
Turkey	3/10/2020	4/16/2020	6/23/2020
United Arab Emirates	1/29/2020	5/22/2020	8/8/2020
United Kingdom	1/31/2020	4/8/2020	7/7/2020
United States	1/20/2020	4/9/2020	7/11/2020
Vietnam	1/23/2020	4/1/2020	7/14/2021

<sup>1</sup>All data of the first reported case by country, defining the onset of the pandemic of the country obtained from Wikipedia ([Timeline of first confirmed cases by ...](#))

<sup>2</sup>First definition of the second wave: the number of COVID-19 cases must decline >50% from the previous wave's peak, and more than double at the next peak. The start date for this occurrence was chosen as the minimum closest to the second wave.

<sup>3</sup>Second definition of the second wave: as the first definition, with the addition of 2 or more months apart between the peak of the first wave and the start of the second wave.

All data of the wave peaks obtained from <https://ourworldindata.org/coronavirus> a joint project of the University of Oxford and Global Change Data Lab

**Table 3. Ischemic stroke admissions overall and monthly volumes per continent before and during the COVID-19 pandemic.**

	Overall volume						Monthly volume*		
	N	n1	n2	Change	P		Immediately before	During COVID-19	P
				% (95% CI)			Adjusted Mean (SE)		
<b>Overall</b>	245	148,895	138,453	-7.0 (-7.1 - -6.9)	<0.0001	251	43.8 (4.0)	40.3 (3.9)	<0.0001
<b>Europe</b>	97	61,915	58,407	-5.7 (-5.9 - -5.5)	<0.0001	100	53.2 (3.1)	50.4 (3.1)	0.001
<b>North America</b>	69	43,435	40,728	-6.2 (-6.5 - -6.0)	<0.0001	69	52.5 (5.1)	49.2 (4.5)	0.002
<b>Asia</b>	57	35,635	31,848	-10.6 (-11.0 - -10.3)	<0.0001	59	52.2 (4.5)	46.8 (4.4)	0.002
<b>South America</b>	11	3,903	3,385	-13.3 (-14.4 - -12.2)	<0.0001	12	32.9 (7.7)	29.2 (6.9)	0.038
<b>Oceania</b>	6	3,458	3,620	4.7 (4.0 - 5.4)	0.054	6	48.0 (7.7)	50.3 (8.7)	0.182
<b>Africa</b>	5	549	465	-15.3 (-18.6 - -12.5)	0.008	5	9.2 (3.4)	7.8 (2.5)	0.295

**Abbreviations:** N=number of hospitals; n1=number of admissions during twelve months before COVID-19 pandemic; n2= number of admissions during twelve months of COVID-19 pandemic; CI=confidence interval; SE=standard error

\*The monthly volume analysis for each continent is adjusted for the date of peak COVID-19 volume for each country and the start date of the second wave. The overall monthly volume analysis is also adjusted for the continent.

**Table 4. Intracerebral hemorrhage admissions overall and monthly volumes per continent before and during the COVID-19 pandemic.**

	Overall volume						Monthly volume*		
	N	n1	n2	Change	P		Immediately before	During COVID-19	P
				% (95% CI)			Adjusted Mean (SE)		
<b>Overall</b>	239	29,585	28,156	-4.8 (-5.1 - -4.6)	<0.0001	246	9.7 (1.1)	9.2 (1.1)	0.015
<b>Europe</b>	96	10,208	9,881	-3.2 (-3.6 - -2.9)	0.021	99	8.8 (0.78)	8.6 (0.96)	0.238
<b>North America</b>	68	8,035	7,845	-2.4 (-2.7 - -2.1)	0.132	68	9.8 (1.2)	9.6 (1.1)	0.349
<b>Asia</b>	53	9,845	8,874	-9.9 (-10.5 - -9.3)	<0.0001	56	15.2 (2.4)	13.6 (1.8)	0.050
<b>South America</b>	11	468	464	-0.9 (-2.2 - -0.3)	0.896	12	5.4 (2.0)	5.0 (1.6)	0.403
<b>Oceania</b>	6	873	952	9.0 (7.3 - 11.1)	0.065	6	12.1 (3.5)	13.2 (3.0)	0.204
<b>Africa</b>	5	156	140	-10.3 (-16.0 - -6.4)	0.353	5	2.6 (1.1)	2.3 (0.97)	0.722

**Abbreviations:** N=number of hospitals; n1=number of admissions during twelve months before COVID-19 pandemic; n2= number of admissions during twelve months of COVID-19 pandemic; CI=confidence interval; SE=standard error

\*The monthly volume analysis for each continent is adjusted for the date of peak COVID-19 volume for each country and the start date of the second wave. The overall monthly volume analysis is also adjusted for the continent.



**Table 5. Intravenous thrombolysis overall and monthly volumes per continent before and during the COVID-19 pandemic.**

	Overall volume					Monthly volume*			
	N	n1	n2	Change	P	N	Immediately before	During COVID-19	P
				% (95% CI)			Adjusted Mean (SE)		
<b>Overall</b>	239	24,584	23,077	-6.1 (-6.4 - -5.8)	<0.0001	244	7.5 (1.1)	7.0 (1.1)	0.006
<b>Europe</b>	96	12,460	11,737	-5.8 (-6.2 - -5.4)	<0.0001	99	10.8 (0.68)	10.3 (0.69)	0.063
<b>North America</b>	69	6,943	6,374	-8.2 (-8.9 - -7.6)	<0.0001	69	8.4 (0.77)	7.7 (0.64)	0.016
<b>Asia</b>	55	3,823	3,467	-9.3 (-10.3 - -8.4)	<0.0001	56	5.8 (0.85)	5.3 (0.67)	0.193
<b>South America</b>	11	609	619	1.6 (0.9 - 3.0)	0.775	12	4.8 (1.2)	5.1 (1.4)	0.711
<b>Oceania</b>	7	726	848	16.8 (14.3 - 19.7)	0.002	7	8.6 (2.5)	10.1 (2.5)	0.011
<b>Africa</b>	1	23	32	39.1 (22.2 - 59.2)	0.227	1 <sup>†</sup>	N/A	N/A	N/A

**Abbreviations:** N=number of hospitals; n1=number of admissions during twelve months before COVID-19 pandemic; n2= number of admissions during twelve months of COVID-19 pandemic; CI=confidence interval; SE=standard error; N/A= not available

\*The monthly volume analysis for each continent is adjusted for the date of peak COVID-19 volume for each country and the start date of the second wave. The overall monthly volume analysis is also adjusted for the continent.

<sup>†</sup>The adjusted mean cannot be calculated because there is only one observation.

**Table 6. Mechanical thrombectomy overall and monthly volumes per continent before and during the COVID-19 pandemic.**

	Overall volume					Monthly volume*			
	N	n1	n2	Change	P	N	Immediately before	During COVID-19	P
				% (95% CI)			Adjusted Mean (SE)		
<b>Overall</b>	199	18,375	18,507	0.7 (0.6 - 0.9)	0.492	205	6.2 (1.1)	6.3 (1.1)	0.715
<b>Europe</b>	77	9,489	9,470	-0.2 (-0.3 - -0.1)	0.890	79	10.5 (0.89)	10.5 (0.86)	0.870
<b>North America</b>	56	5,112	5,178	1.3 (1.0 - 1.6)	0.515	57	7.5 (0.51)	7.6 (0.54)	0.648
<b>Asia</b>	52	2,917	2,879	-1.3 (-1.8 - -1.0)	0.618	54	4.6 (0.53)	4.6 (0.57)	0.802
<b>South America</b>	6	60	61	1.7 (0.3 - 8.9)	0.928	7	0.83 (0.33)	0.89 (0.20)	0.844
<b>Oceania</b>	7	775	902	16.4 (14.0 - 19.2)	0.002	7	9.2 (2.8)	10.7 (2.9)	0.006
<b>Africa</b>	1	22	17	-22.7 (-43.4 - -10.1)	0.425	1 <sup>†</sup>	N/A	N/A	N/A

**Abbreviations:** N=number of hospitals; n1=number of admissions during twelve months before COVID-19 pandemic; n2= number of admissions during twelve months of COVID-19 pandemic; CI=confidence interval; SE=standard error; N/A= not available

\*The monthly volume analysis for each continent is adjusted for the date of peak COVID-19 volume for each country and the start date of the second wave. The overall monthly volume analysis is also adjusted for the continent.

†The adjusted mean cannot be calculated because there is only one observation.