RES-Q
Data for Life

RES-Q (Registry of Stroke Care Quality)
Data Collection Methodology

Introduction

The Registry of Stroke Care Quality (RES-Q) is committed to providing comprehensive and accurate reports on the quality of stroke care across various hospitals and countries. Our data collection methodology is designed to ensure the integrity, confidentiality, and relevance of the data we gather and present. This document outlines the systematic process we follow to collect, process, analyze, and present this data in our reports.

Data Collection Methodology

The data collection methodology for the RES-Q reports is a systematic and organized process that ensures the integrity and confidentiality of the data. This process is outlined as follows:

1. Data Collection: The data used for the reports is collected from various hospitals across different countries. This data is primarily focused on the Key Performance Indicators (KPIs) related to the quality of stroke care. The data is collected for different timeframes - quarterly, biannually, and annually.

2. Data Processing: After the data is collected, it is processed and analyzed. The data from the previous quarter is used to create a new batch of quarterly reports at the start of every new quarter. At the same time, the data from the past two quarters is updated to form a set of reports covering the last three quarters.

3. Report Creation: The processed data is then used to create two types of reports - hospital reports and country reports. These reports are manually created and are available as PowerPoint presentations. The hospital reports assist hospital staff in comparing their KPIs with the median or average KPI for their country. The country reports provide a summary of KPIs for all hospitals in a particular country during a specified timeframe, compared to national KPIs.

4. Report Access: The reports are made available on the RES-Q website and are password protected to maintain confidentiality. The hospital reports are only accessible to the staff of the respective hospital. The country reports are only accessible to the national coordinator for the respective country.

5. Report Update: The reports are updated at the start of every quarter with the data from the previous quarter. Additionally, new or updated versions of annual and biannual reports are created.

6. Confidentiality: Throughout the entire process, a high level of confidentiality is maintained. Access to the reports is limited and password protected to ensure the security of the data.

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Appendix A – RES-Q Questionnaire (v3.0 – Updated 26.09.2023)

3.0 Standard Data Collection Form

ALL STROKES: HOSPITALIZATION DATA

Denotes mandatory fields*

Patient ID*	Auto Generated (in the online form)

ALL STROKES: ADMISSION DATA

Age*	Years

Gender*	☐ Male	☐ Female	☐ Other

Stroke while already hospitalized (select one)
- ☐ Yes
- ☐ No
- ☐ Unknown

Wake up stroke*
- ☐ Yes
- ☐ No

If yes, time when patient went to bed*	HH:MM

Date of admission*	DD-MM-YYYY

Arrival time to hospital (if unknown then kindly put the best estimate time)*	HH:MM

Date of onset of stroke symptoms*	DD-MM-YYYY

Time of onset of stroke symptoms*
- HH:MM
- ☐ unknown

Where was the patient first attended to at your hospital?*
- ☐ Direct to CT/MR imaging suite
- ☐ Emergency department/casualty
- ☐ Outpatient clinic/facility
- ☐ Other department

Patient arrived to your hospital from*
- ☐ From home/scene by EMS/ambulance → Was the hospital pre-notified by EMS /ambulance: ☐ Yes ☐ No
- ☐ Home/scene by private transportation
- ☐ From another stroke treating centre → Name of the first hospital of admission: ______
- ☐ From any other hospital

Patient hospitalized in (day 1)*
- ☐ ICU/Stroke unit
- ☐ Other monitored bed with telemetry
- ☐ Standard bed

Patient admitted under which department?
- ☐ Neurology
- ☐ Neurosurgery
- ☐ Critical care
- ☐ Internal medicine
- ☐ Other

ALL STROKES: HOSPITALIZATION DATA

Previous known history (select all that apply)*

- [ ] Hypertension
- [ ] Diabetes
- [ ] Hyperlipidemia
- [ ] Smoker
- [ ] Previous Ischemic/ TIA stroke leading to hospitalization
- [ ] Previous haemorrhagic stroke leading to hospitalization
- [ ] Atrial fibrillation or flutter (paroxysmal/persistent/permanent)
- [ ] Coronary artery disease/ previous myocardial infarction
- [ ] Congestive heart failure
- [ ] Hormonal contraception
- [ ] HIV
- [ ] COVID positive in last 6 months
- [ ] Other
- [ ] Unknown
- [ ] None

Treatment before admission/event (select all that apply)*

- [ ] Anti-diabetics
- [ ] Anti-hypertensives
- [ ] Aspirin (ASA)
- [ ] Cilostazol
- [ ] Clopidogrel
- [ ] Ticagrelol
- [ ] Ticlopidine
- [ ] Prasugrel
- [ ] Dipyridamol, slow release
- [ ] Statin
- [ ] Warfarin
- [ ] Low molecular weight Heparin/Heparin
- [ ] Dabigatran
- [ ] Rivoroxaban
- [ ] Apixaban
- [ ] Edoxaban
- [ ] Other Anti Coagulant
- [ ] Other Anti Platelet
- [ ] Other
- [ ] None
- [ ] Unknown

Glucose (first measurement in your hosp; enter no with or without decimal point)*
number
- [ ] Not done

LDL cholesterol (first measurement in your hosp; enter no with or without decimal point)*
number
- [ ] Not done

Systolic Blood Pressure (first measurement in your hosp)*
mmHg

Diastolic Blood Pressure (first measurement in your hosp)*
mmHg

NIHSS score*
number
- [ ] Not done

Modified Ranking Scale (mRS) score
0 1 2 3 4 5 6
- [ ] Unknown

First INR testing done?
- [ ] Yes, with point of care device
- [ ] Yes, sample sent to lab
- [ ] Not done
- [ ] Unknown

Glasgow coma scale
Value 3-15
- [ ] Not done

IMAGING, DIAGNOSIS AND TREATMENT

Brain imaging type*

- ☐ Non-Contrast CT
- ☐ Non-Contrast CT + CT Angiography
- ☐ Non-Contrast CT + CT Angiography + CT Perfusion
- ☐ MR DWI / Flair
- ☐ MR DWI / Flair + MR Angiography
- ☐ MR DWI / Flair + MR Angiography + MR Perfusion
- ☐ Imaging done in another hospital
- ☐ Not done

CT/ MR Perfusion deficit

- ☐ Medial
- ☐ Anterior
- ☐ Posterior
- ☐ Carotid
- ☐ No, analysis not possible due to bilateral stenosis
- ☐ Not done
- ☐ No deficit

CT/MR perfusion deficit core volume specification	ml
CT/MR perfusion deficit hyperfusion volume specification	ml

Date of imaging*	DD-MM-YYYY

Imaging done at what time?*	HH:MM

Old infarcts seen on the imaging (select all that apply)*

- ☐ Cortical
- ☐ Subcortical (basal ganglia, internal capsule)
- ☐ Brainstem
- ☐ None

Stroke type*

	Stroke type	Instruction
☐	Ischemic Stroke	Complete section on page 4 & 5(Ischemic section only)
☐	Intracerebral Hemorrhage	Complete section on page 5 (ICH section only)
☐	Transient Ischemic Attack (TIA)	Go directly to Post Acute section on Page 7
☐	Subarachnoid Hemorrhage	Complete section on page 6
☐	Cerebral Venous Thrombosis	Complete section on page 6
☐	Stroke Mimics	Complete section on page 6
☐	Undetermined (Unknown stroke type)	Go directly to Post Acute section on Page 7

DIAGNOSIS AND TREATMENT

ASPECT score (number)	

CTA/MRA occlusion*	
	☐ Yes
	☐ No
	☐ Not done

If arterial occlusion is present then select location (select all that apply)

Occlusion Location (Left)	Occlusion Location (Right)
☐ MCA M1 - Middle cerebral artery M1	☐ MCA M1 - Middle cerebral artery M1
☐ MCA M2 - Middle cerebral artery M2	☐ MCA M2 - Middle cerebral artery M2
☐ MCA M3 - Middle cerebral artery M3	☐ MCA M3 - Middle cerebral artery M3
☐ Anterior cerebral artery	☐ Anterior cerebral artery
☐ PCA P1 - Arteria cerebri posterior P1	☐ PCA P1 - Arteria cerebri posterior P1
☐ PCA P2 - Arteria cerebri posterior P2	☐ PCA P2 - Arteria cerebri posterior P2
☐ Carotid artery extracranial	☐ Carotid artery extracranial
☐ Carotid artery intracranial	☐ Carotid artery intracranial
☐ Basilar artery	☐ Basilar artery
☐ Vertebral artery	☐ Vertebral artery

Was the patient treated with IV Thrombolysis in your hospital* ☐ Yes ☐ No

If Yes:

Treatment (select one)*	
	☐ Alteplase
	☐ Tenecteplase
	☐ Streptokinase
	☐ Staphylokinase

Treatment dose (in mg)*	number
Bolus time (time at which first IV shot given)*	HH:MM

IV thrombolysis given in*	
	☐ CT/MRI room
	☐ Stroke/ICU
	☐ Emergency room
	☐ Other

Antidote anticoagulant given	
	☐ Yes
	☐ No

If No:

Please select main reason for not doing thrombolysis*	
	☐ Already received IV Thrombolysis in other hospital
	☐ Out of time window
	☐ Mild deficit
	☐ Consent not given
	☐ Cost of treatment
	☐ Transferred to other hospital for IV Thrombolysis
	☐ Only Mechanical thrombectomy required
	☐ Thrombolytic drug not available
	☐ Other

Transfer start time (door out)*	HH:MM

DIAGNOSIS AND TREATMENT CONTINUED

ISCHEMIC STROKE CONTINUED

Was the patient treated with Mechanical Thrombectomy in your hospital* ☐ Yes ☐ No

If Yes:

Groin puncture time*	HH:MM
Reperfusion time*	HH:MM

mTICI score*
☐ 0
☐ 1
☐ 2A
☐ 2B
☐ 2C
☐ 3
☐ Occlusion was not confirmed

Procedure complications in thrombectomy (select all that apply)
☐ None
☐ Vessel perforation
☐ Dissection
☐ Embolization to different vascular territory
☐ Haematoma at arterial access requiring transfusion
☐ Other

If No:

Please select main reason for not doing thrombectomy*
☐ Already received Mechanical thrombectomy in other hospital
☐ Out of time window
☐ Mild deficit
☐ No large vessel occlusion
☐ Premorbid disability
☐ Consent not given
☐ Cost of treatment
☐ Transferred to another hosp for Mechanical thrombectomy
☐ MT facility not available in the hosp
☐ Other

If transferred to another hosp for Mechanical thrombectomy:

Transfer start time (door out)*	HH:MM

NOW COMPLETE POST ACUTE SECTION ON PAGE 7

INTRACEREBRAL HAEMORRHAGE

Bleeding volume (ml)*	number / not done
Infratentorial source of bleeding	☐ Yes ☐ No
Source of bleeding found*	☐ Yes ☐ No
ICH score (value 0-6)	
Presence of blood in the chambers	☐ Yes ☐ No

Reason for bleeding (select all that apply)*
☐ Arterial hypertension
☐ Aneurysm
☐ Arteriovenous malformation
☐ Anticoagulation therapy
☐ Amyloid angiopathy
☐ Other/not known

If Anticoagulation therapy:

What antidote to anticoagulant was used
☐ Andexanate
☐ Idarucizumab
☐ Fresh frozen plasma
☐ Prothrombin complex concentrate
☐ Other
☐ None

If neurosurgery was performed, select the type (select all that apply)
☐ Intracranial hematoma evacuation
☐ External ventricular drainage
☐ Decompressive craniectomy
☐ Not required

NOW COMPLETE POST ACUTE SECTION ON PAGE 7

DIAGNOSIS AND TREATMENT CONTINUED

SUBARACHNOID HAEMORRHAGE

Hunt Hess score		
	☐	1 (lucid, mild headache, slight neck stiffness
	☐	2 (moderate to severe headache; neck stiffness; no neurologic deficit except cranial nerve palsy)
	☐	3 (drowsy; minimal neurologic deficit)
	☐	4 (stuporous; moderate to severe hemiparesis; possibly early decerebrate rigidity and vegetative disturbances)
	☐	5 (deep coma, severe neurological deficit)

Intervention (select all that apply)*		
	☐	Endovascular (coiling)
	☐	Neurosurgical (clipping)
	☐	Ventricular drainage
	☐	Decompressive craniectomy
	☐	Other
	☐	None

Source of bleeding found*		
	☐	Yes
	☐	No

Nimodipine treatment administered?		
	☐	Yes, within 24 hrs of admission
	☐	Yes, later than 24 hrs of admission
	☐	Not administered

NOW COMPLETE POST ACUTE SECTION ON PAGE 7

CEREBRAL VENOUS THROMBOSIS

Treatment*		
	☐	Anticoagulation
	☐	Endovascular intervention (thrombectomy)
	☐	Endovascular intervention (local thrombolysis)
	☐	Neurosurgical treatment (decompressive craniectomy)
	☐	None

TRANSIENT ISCHEMIC ATTACK (TIA)

COMPLETE POST ACUTE SECTION ON PAGE 7*

STROKE MIMIC

Final diagnosis (select one)*		
	☐	Migraine
	☐	Seizure
	☐	Delirium
	☐	Electrolyte or metabolic imbalance
	☐	Functional disorder
	☐	Other

Was patient treated with IV thrombolysis		
	☐	Yes
	☐	No

Treatment*		
	☐	Alteplase
	☐	Tenecteplase
	☐	Streptokinase
	☐	Staphylokinase

Bolus time	HH:MM
Dose (in mg)	

Antidote anticoagulant given?		
	☐	Yes
	☐	No

NOW COMPLETE POST ACUTE SECTION ON PAGE 7

POST ACUTE CARE

PATIENT HOSPITALIZED FOR MORE THAN 24 HOURS

Yes	No, Patient transferred	No, Patient expired	No, Patient was discharged home or social care facility
Complete the form on this page	Complete the form on page 9	Enter discharge date on page 9	Enter discharge date on page 9

Patient ventilated
- Yes
- No
- Unknown

Venous thromboembolism (VTE) interventions (select all that apply):
- Low Dose Unfractionated Heparin (LDUH)
- Low Molecular Weight Heparin (LMWH)
- Intermittent Pneumatic Compression Devices (IPC)
- Graduated Compression Stockings (GCS)
- Warfarin for VTE only
- Venous Foot Pumps (VFP)
- Oral Factor Xa Inhibitor for VTE only
- Others
- None

Carotid arteries imaging done:
- Yes → **Symptomatic carotid stenosis**
  - >70%
  - 50-70%
  - No
  - Unknown
- No

Carotid endarterectomy performed or stenting within 2 weeks after stroke
- Yes, after 24 hours to 2 weeks
- Yes, in 24 hours
- No
- Yes after 2 weeks

Was decompressive craniectomy performed
- Yes
- No

Atrial fibrillation/ flutter (AF)*
- Known AF
- Detected during hospitalization
- No AF detected
- Not screened
- Unknown

Stroke etiology (select all that apply)
- Large Artery Atherosclerosis (e.g., Carotid, or basilar stenosis)
- Cardioembolism (e.g., AF/flutter/ prosthetic heart valve)
- Stroke of other determined etiology (dissection, vasculopathy or hematologic disorder)
- Cryptogenic Stroke (Stroke of undetermined etiology including ESUS)
- Small Vessel Disease /Lacuna

Was CT/MR performed after IVT/MT?
- Yes, CT
- Yes, MR
- No

(Yes, CT / Yes, MR →) **Findings on CT/MRI after IVT/MT (select all that apply)**
- Brain infarct
- No bleeding
- Remote bleeding in the brain
- Bleeding at the site of infarction haemorrhagic infarction H I type 1
- Bleeding at the site of infarction haemorrhagic infarction H I type 2
- Bleeding at the site of infarction parenchymal haemorrhage PH type 1
- Bleeding at the site of infarction parenchymal haemorrhage PH type 2

POST ACUTE CARE (For patients in the hospital)

Temp checks (No. of times)	0	1	2	3	4+
Day 1	☐	☐	☐	☐	☐
Day 2	☐	☐	☐	☐	☐
Day 3	☐	☐	☐	☐	☐

In the first 72 hours of admission did patient develop fever of ≥ 37.5º C?*

☐ Yes ☐ No ☐ Unknown

Was paracetamol or (other Antipyretic) administered for the first elevated temperature?*

- ☐ Yes, within 1 hour of first elevated temperature
- ☐ Yes, after 1 hour of first elevated temperature
- ☐ No
- ☐ Contraindicated

Blood glucose level checks (no. of times)	0	1	2	3	4+
Day 1	☐	☐	☐	☐	☐
Day 2	☐	☐	☐	☐	☐
Day 3	☐	☐	☐	☐	☐

In the first 48 hours following admission did the patient develop a glucose level of greater or equal 10 mmols/L? *

☐ Yes ☐ No ☐ Unknown

Was insulin administered for the first elevated glucose (>=10 mmol/L)?*

- ☐ Yes, within 1 hour of the first elevated glucose level
- ☐ Yes, after 1 hour of the first elevated glucose level
- ☐ No
- ☐ Unknown

Swallow screening performed*

- ☐ Yes, within 4 hrs of admission
- ☐ Yes, within 24 hrs of admission
- ☐ Yes, after 24 hrs of admission
- ☐ Not done
- ☐ Not applicable (Patient intubated, NGS, etc.)

Which swallowing screening test performed

- ☐ Guss test
- ☐ Assist test
- ☐ Drinking water test
- ☐ Other (gag reflex not to be considered)

Who performed swallowing screening?

- ☐ Nurse
- ☐ Physician
- ☐ Other

Patient received physiotherapy?*

- ☐ Yes
- ☐ No
- ☐ Not required

Patient received ergotherapy/ occupational therapy?

- ☐ Yes
- ☐ No
- ☐ Not required

Patient received by speech therapy

- ☐ Yes
- ☐ No
- ☐ Not required

Post stroke complications (select all that apply)

- ☐ Pneumonia
- ☐ Deep vein thrombosis (DVT)
- ☐ Pulmonary embolism
- ☐ Urinary tract infection
- ☐ Pressure sores
- ☐ Drip site sepsis
- ☐ Recurrence/extension of stroke
- ☐ Other
- ☐ None

DISCHARGE INFORMATION & TREATMENT (For patients hospitalized for > 48 hrs & patient transferred)

Discharge date*	DD-MM-YYYY

Modified Ranking Scale (MRS) score on discharge	0	1	2	3	4	5	6	Unknown

NIHSS Score on discharge	number	not done

Discharge destination*	
	Home
	Transferred within the same centre
	Transferred to another centre
	Social care facility
	Patient expired

Treatment presecribed on discharge (select all that apply)*	
	Anti-diabetics
	Anti-hypertensives
	ASA (aspirin)
	Cilostazol
	Clopidogrel
	Ticagrelol
	Ticlopidine
	Prasugrel
	Dipyridamol, slow release
	Other antiplatelet
	Vitamin K antagonist, e.g. Warfarin
	Low molecular weight Heparin/Heparin
	Dabigatran
	Rivoroxaban
	Apixaban
	Edoxaban
	Other anticoagulant
	Anticoagulant was not prescribed but is planned
	Statin
	None
	Other

Main reason for not giving anticoagulant at discharge	
	Allergy to or complication r/t warfarin or heparins
	Mental status
	Patient/family refused
	Risk for bleeding or discontinued due to bleeding
	Risk of falls
	Serious side effect to medication
	Terminal illness/Comfort Measures Only
	Planned to prescribe with a delay

Follow up appointment scheduled in your hospital for stroke management	
	Yes
	No, but recommended to schedule
	No

If the patient was a smoker was he/ she recommended a smoking cessation program	
	Yes
	No
	Not a smoker

FOLLOW UP AFTER 3 MONTHS
(Only for patients getting discharged from hospital and not transferred patients)

Contact date	DD-MM-YYYY

Mode of Contact	
	Telephonic/video (Patient or caregiver)
	Visiting the outpatient clinic
	Mobile application
	Web application
	Patient/care giver didn't respond
	Not contacted

3 Months Modified Ranking Scale (mRS) score	0	1	2	3	4	5	6	Unknown

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