INSTOR
Interventional Stroke Therapy Outcomes Registry
strokeregistry.org

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Vanderbilt University Medical Center
Disclaimers
Co-author with registry mandates

- **American Stroke Association**
  - ASA Metrics for Measuring Quality of Care in Comprehensive Stroke Centers
  - ASA Guidelines for the Early Management of Patients with Acute Ischemic Stroke
  - ASA Recommendations for Imaging of Acute Ischemic Stroke

- **SVIN, SNIS, SIR, ASNR, Europe, Canada, etc**
  - Multisociety Consensus Quality Improvement Guidelines for Intra-arterial Catheter-directed Treatment of Acute Ischemic Stroke

- **Brain Attack Coalition**
  - Recommendations for Comprehensive Stroke Centers

- Founder of NeuroVascular Research Foundation and Medical Director of INSTOR®: Interventional Stroke Therapy Outcomes Registry
Welcome to the world of modern Healthcare

THE DATA DUMP

THIS WEEK’S LOOK AT DATA NEWS FROM AROUND THE UNIVERSE
“You Can’t Improve what you Don’t Measure”

Lord Kelvin – variation of original

Toyota – modern quote
Mandatory Data Fulfillment

- **INSTOR** is the *ONLY* registry that fulfills ALL data requirements/analysis for ALL emergency stroke situations from:

  - **Joint Commission**
    - Acute ischemic stroke
    - Subarachnoid hemorrhage
    - Intracerebral hemorrhage
    - Intraventricular hemorrhage
    - TIA
  
  - **American Stroke Association**
    - Metrics for Comprehensive Stroke Centers
  
  - **Multisociety Consensus Quality Improvement Guidelines**
    - SVIN, SNIS, SIR, ASNR, SCAI, CIRSE, ESMINT
Point of Service data collection

Like STEMI

- By a **limited** team of people (**nurses!!**) who do this 24/7/365
  - Preferably from the stroke floor
  - They are **consistent** experts
  - Can cover all inpatient and outpatient strokes
- They **Can help coordinate and document the entire process**
- **Already in-house and on the payroll!!**
- **And Can enter the data immediately after!!**
  - Or get their assistant/secretary to do so
This one sheet is 90% of all mandatory data needed for a complete endovascular stroke patient for **INSTOR**.

IV tPA patients and stroke alerts are faster and shorter.
How long does using INSTOR take?

- **10** minutes for a complete stroke alert case
- **15** minutes for a complete IV tPA case
- **30** minutes for a complete EVT case
- Follow-up phone calls are short and ?????

3-8 hours/week for a CSC

(ZERO) hours needed for analysis
<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>23</td>
<td>For outpatient or transfer stroke - Time of arrival at treating hospital (within 5 minutes)</td>
<td>10/1/2014</td>
<td>9:00 AM</td>
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<td>24</td>
<td>How did patient arrive?</td>
<td>EMS</td>
<td></td>
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<td></td>
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<td>Personal transport</td>
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<td></td>
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<td><em>Might be same as time of stroke onset if observed.</em></td>
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<td>Time ED MD arrived</td>
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<td></td>
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<td>Time neurology answered call</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>30</td>
<td>Time neurologist arrived</td>
<td>10/1/2014</td>
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What does INSTOR mean for a stroke coordinator?

- Data Analysis is instantaneous (over 300 reports); no time is needed to prepare for monthly QA meetings
  - “40% of my time was spent collecting data and entering into Excel”

- From a sample INSTOR site.....
  - “Four days a week were spent collecting and analyzing data... So I stopped....”
  - “Now I spend 4-hours a month on all this data stuff”
  - “INSTOR does all the rest, automatically”
Data is supposed to be useful

Those are good numbers.  
Don't just throw them away.
Quotes from Stroke coordinators who uses P.O.S and INSTOR

“Here at our stroke center, we have found this method to be less labor intensive, less time consuming and less expensive than any other form of data analysis or stroke registry”
Mandatory Joint Commission Data (plotted as Trend lines):

- Time to CT
- Time to IV tPA
- Time to IA puncture
- Time to IA brain

Automatically and instantly
Only **INSTOR** can do this

Repeat slide
(your) Real-World Clinical Outcomes

IV + IA

- 0: 13%
- 1: 20%
- 2: 24%
- 3: 13%
- 4: 2%
- 5: 17%
- 6: 8%
Only INSTOR can do this

Repeat slide
POS data collection and Instant computerized analysis

Each **DOT** is an **Individual patient**

**Door to tPA**

Current Trend for Arrival to IVtPA Started
Displayed Data is for the past 30 patients

Current Trend for IV tPA Ordered to IVtPA Started
Displayed Data is for the past 30 patients

**CT read to tPA order:**

*How long to make a DECISION!*
Only **INSTOR** can do this

*Repeat slide*
Click on a DOT, get Patient Summary and Patient Timeline.
Only **INSTOR** can do this

Repeat slide
PATIENT VOMITED

Final Diagnosis
Basilar occlusion

Intervals
- Time from onset to presentation/arrival: 26 minutes
- Time from arrival to CT/MRI: 19 minutes
- Time from arrival to IV tPA ordered: 11 minutes
- Time from arrival to IV tPA started: 35 minutes
- Time from arrival to puncture: 1 hour, 6 minutes
- Time from arrival to start of EVT: 1 hour, 28 minutes
- Time from CT/MRI to IV tPA: 25 minutes
- Time from CT/MRI to start of EVT: 1 hour, 18 minutes
### Intervals

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<td>Time from arrival to CT/MRI</td>
<td>10 minutes</td>
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<td>Time from arrival to CT/MRI read</td>
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### Other

- **NIHSS Score**: 19
- **Calculated Thrive Score**: 5
- **mRS Score Prior To Event**: 1 - No significant disability despite symptoms: able to carry out all usual duties and activities
- **mRS Score After 3 Months**: Not answered
- **Post Stroke mRS Decline**: Cannot be calculated
- **Was anesthesia used**: No
- **Beginning TICI**: TICI 0 - Complete obstruction. No flow past the obstruction of a "Major" vessel as defined above
- **Ending TICI**: TICI 3b - Complete and normal filling of all territories; a completely normal cerebral angiogram

### Patient Timeline

![Patient Timeline Diagram](image-url)
Individual patient timeline

- SA = Stroke alert
- II = Initial Imaging
- IV O = IV TPA Ordered
- IV S = TPA Started
- O.T = On Angio Table
- P = Puncture
- EVT = beginning of endovascular therapy (catheter in brain)
Only **INSTOR** can do this

Repeat slide
A real data analysis program

Ever seen this?

All Major Intervals for Last 10 EVT Patients
SA = Stroke Alert, II = Initial Imaging, IR = Imaging Read, IV.O = Order IV, IV.S = Start IV, OT = On Table, P = Puncture, EVT.S = Start EVT,

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<td>45</td>
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T.3A
IV TPA Case
Where is the delays?
IV TPA Case

Where is the delays?

Time to make a decision: 38 minutes
Percentage of acute stroke Outpatients that have IV tPA administered within 60 minutes from time of arrival.

- Actual percentage treated within 60 minutes each month
- Weighted Moving average of performance over time
- Percentage of all patients in the last year treated within 60 minutes

Door To TPA
Only **INSTOR** can do this

Repeat slide
Useful functions

“Sort by” and “Filter By”: date, stroke type...

Filter by:

- Mode of arrival
  - EMS
  - Personal
  - Transfer
- Wake-up
- Drip and ship
- Type of treatment:
  - IV only
  - EVT (IA)
  - IV + EVT
- Type of stroke event:
  - Mimic or TIA
  - Stroke
  - Intracerebral Hemorrhage
  - Sub Arachnoid Hemorrhage
  - Isolated intraventricular hemorrhage
Only **INSTOR** can do this

Repeat slide
INSTOR
Fast, Easy and Powerful
STROKEREGISTRY.ORG
First and Oldest stroke registry in the world
Thank you!
Thank you!

And your team will Thank You!