INSTOR

Interventional Stroke Therapy Outcomes Registry

strokeregistry.org

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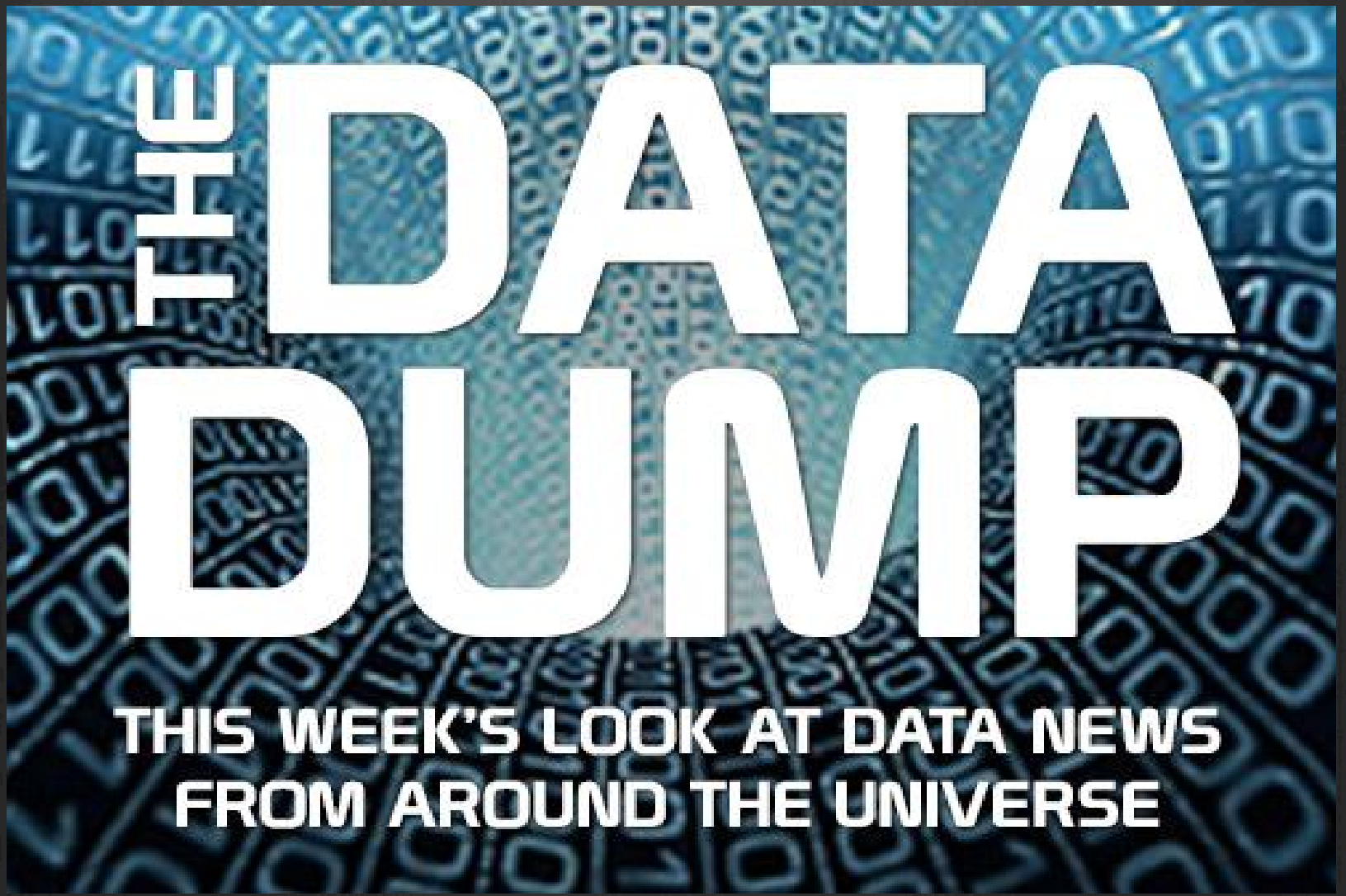
Disclaimers

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®**: **IN**terventional **S**troke **T**herapy **O**utcomes **R**egistry

Welcome to the world of modern Healthcare



"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

PT. ID. _____ AGE _____ Wt. _____ **M** **F**

NIHSS_____ Baseline mRS_____ Hand. - **Lt** **Rt**

ICH Score_____ Hunt and Hess Score _____

TIMES (WHEN):

Stroke Onset _____

Pt arrival _____

How **EMS** **Priv.** **Transfer**

Stroke Alert _____

ED MD arrived _____

Who _____

Neuroresponder arrive _____

Who _____

Neurologist Arrive _____

Who _____

CT/MR ordered _____

CT/MR done _____

CT/MR read _____

NIHSS done _____

Labs back _____

IV TPA ordered _____

IV TPA started _____

Interventionist arrive _____

Who _____

Angio team arrive _____

Patient arrive Angio _____

Patient on table _____

IA puncture _____

First Run _____

Catheter in brain _____

TICI 2a _____

TICI 2b _____

Final TICI & Time _____

Clinical Factors

Comorbidities

- A-fib
- PVD
- HTN
- Diabetes
- Cancer
- Coronary artery disease
- Prior M.I.
- Smoker
- Prev. stroke
- Alcohol/drugs
- Migraine
- Carotid Stenosis

TPA EXCLUSIONS

- Bleed on CT
- Rapidly improving
- Active GI bleed
- BP problems (>185/100)
- Hist: ICH, AVM, tumor, aneurysm
- Recent LP
- Large stroke on CT; Too late
- Glucose >400; <50
- Pregnant
- INR
- Other _____

EVT Exclusions

- No large vessel occlusion
- Minor symptoms
- Too late
- Consent issues
- Anatomy
- OTHER_____

LABS

INR _____ Gluc___Hct/Hgb_____

Platelets _____ Cr_____

OTHER per Stroke Center

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

Point and click !

23. For outpatient or transfer stroke - Time of arrival at treating hospital (within 5 minutes)

Date: 10/1/2014 Time: 9:00 AM

24. How did patient arrive?

- (•) EMS
- ( ) Personal transport
- ( ) Transfer from another institution

26. Time stroke alert called (within 5 minutes)

Might be same as time of stroke onset if observed.

Date: 10/1/2014 Time: 9:05 AM

27. Time ED MD arrived

Date: Time:

- [x] Don't know

28. Name of ED MD

Don't know

29. Time neurology answered call

Date: Time:

- [x] N/A

30. Time neurologist arrived

Date: 10/1/2014 Time: 9:15 AM

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

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):*

Automatically and instantly

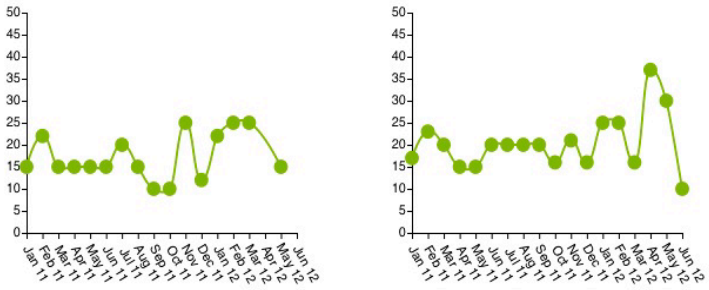
emographics | Process | Outcomes | Metrics | Trends

Outpatient | Inpatient

Site | All

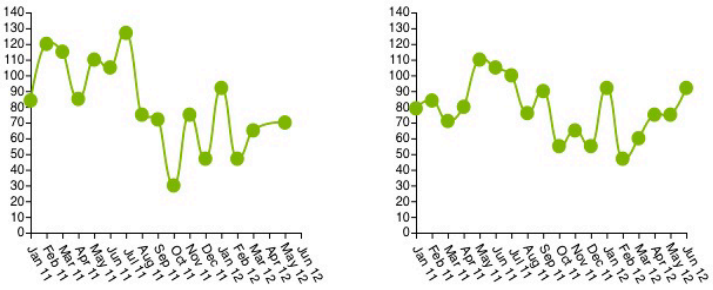
Median Time from Presentation to Initial Non-Invasive Scan (CT or MRI)

Time to CT



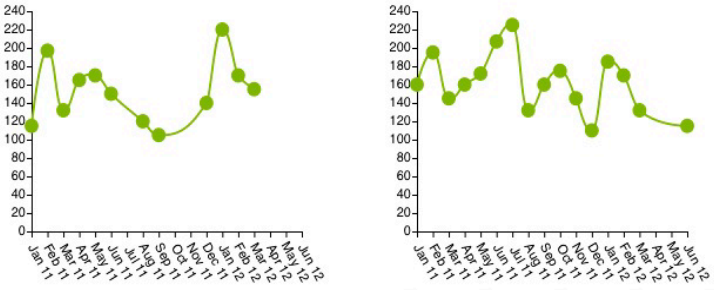
Median Time from Presentation to Start of IV tPA

Time to IV tPA



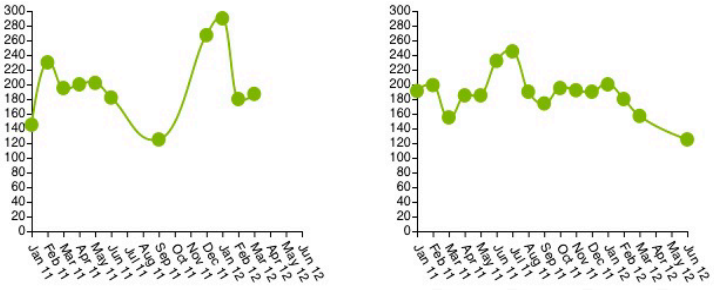
Median Time from Presentation to Puncture

Time to IA puncture



Median Time from Presentation to Start of Revascularization

Time to IA brain

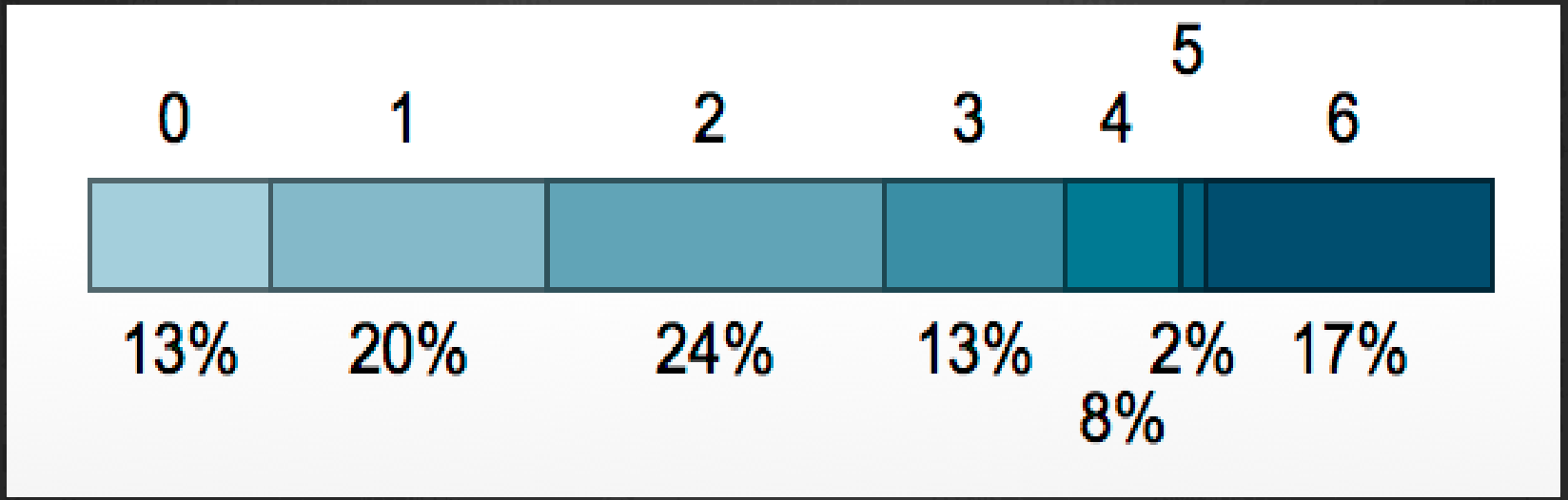


Only **INSTOR** can do this

Repeat slide

(your) Real-World Clinical Outcomes

IV + IA



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Repeat slide

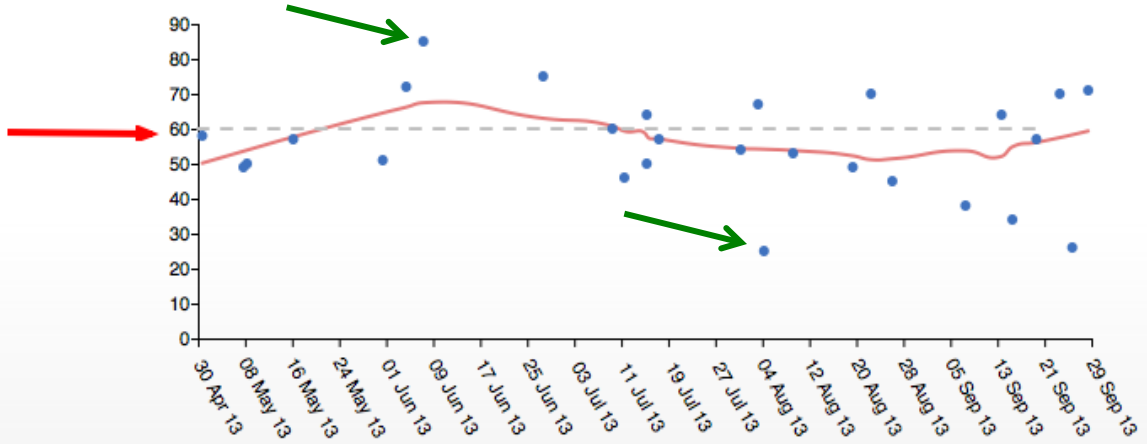
POS data collection and Instant computerized analysis

Each DOT is an Individual patient

Current Trend for Arrival to IVtPA Started

Displayed Data is for the past 30 patients

Door to tPA



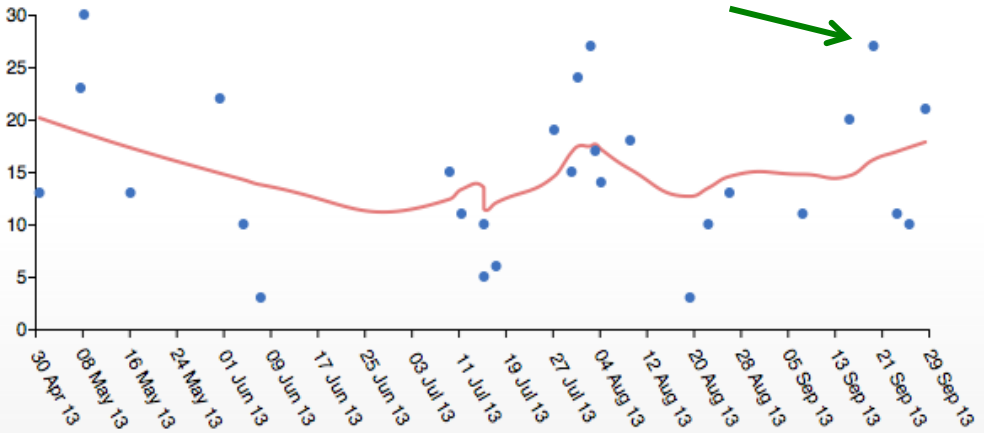
Current Trend for IV tPA Ordered to IVtPA Started

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

Patient Summary - 13-186-R

This patient had both treatments and there are no validation errors.

Patient type	Ischemic Stroke - Outpatient
Patient given IV tPA treatment	Yes
Patient given endovascular treatment	Yes
ED MD	Don't know
Neurologist	RG2011
Code Stroke Responder	elli1
Interventionist	MA2011
Comments	
	No name, race, address or other identifiable information allowed. Clinical information only.
Final Diagnosis	

Save

Dates

Time of stroke onset	2013-10-21 - 11:00 AM
Time of presentation/arrival	2013-10-21 - 11:26 AM
Time of CT/MRI	2013-10-21 - 11:36 AM
Time of IV tPA	2013-10-21 - 12:01 PM
Time of puncture	2013-10-21 - 12:32 PM
Time of start of EVT	2013-10-21 - 12:54 PM

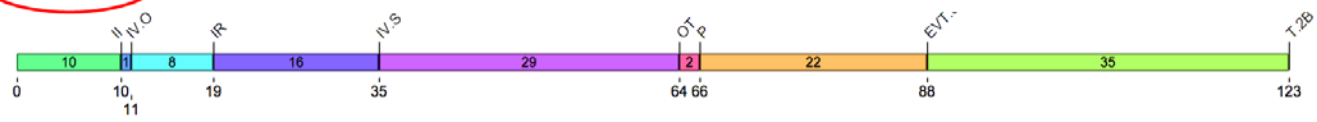
Intervals

Time from onset to presentation/arrival	26 minutes
Time from arrival to CT/MRI	10 minutes
Time from arrival to CT/MRI read	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

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



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Repeat slide

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ED MD	Don't know
Neurologist	RG2011
Code Stroke Responder	elli1
Interventionist	MA2011
Comments	PATIENT VOMITED
	No name, race, address or other identifiable information allowed. Clinical information only.
Final Diagnosis	Basilar occlusion

Save

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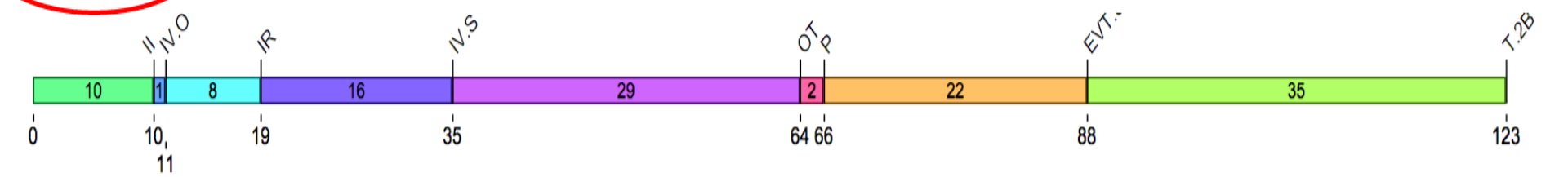
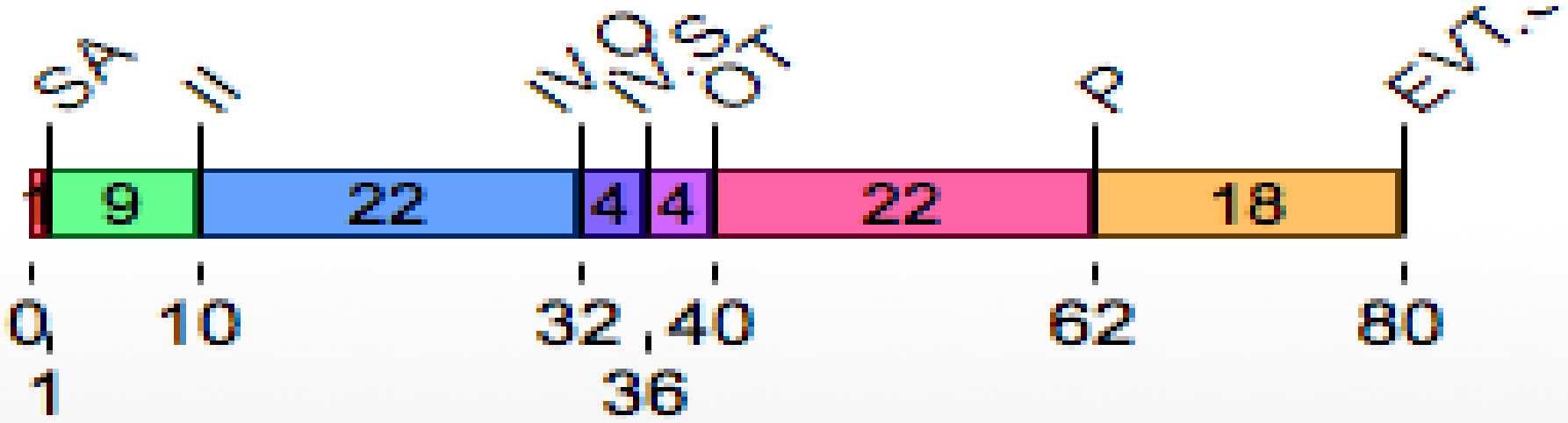


Individual patient timeline



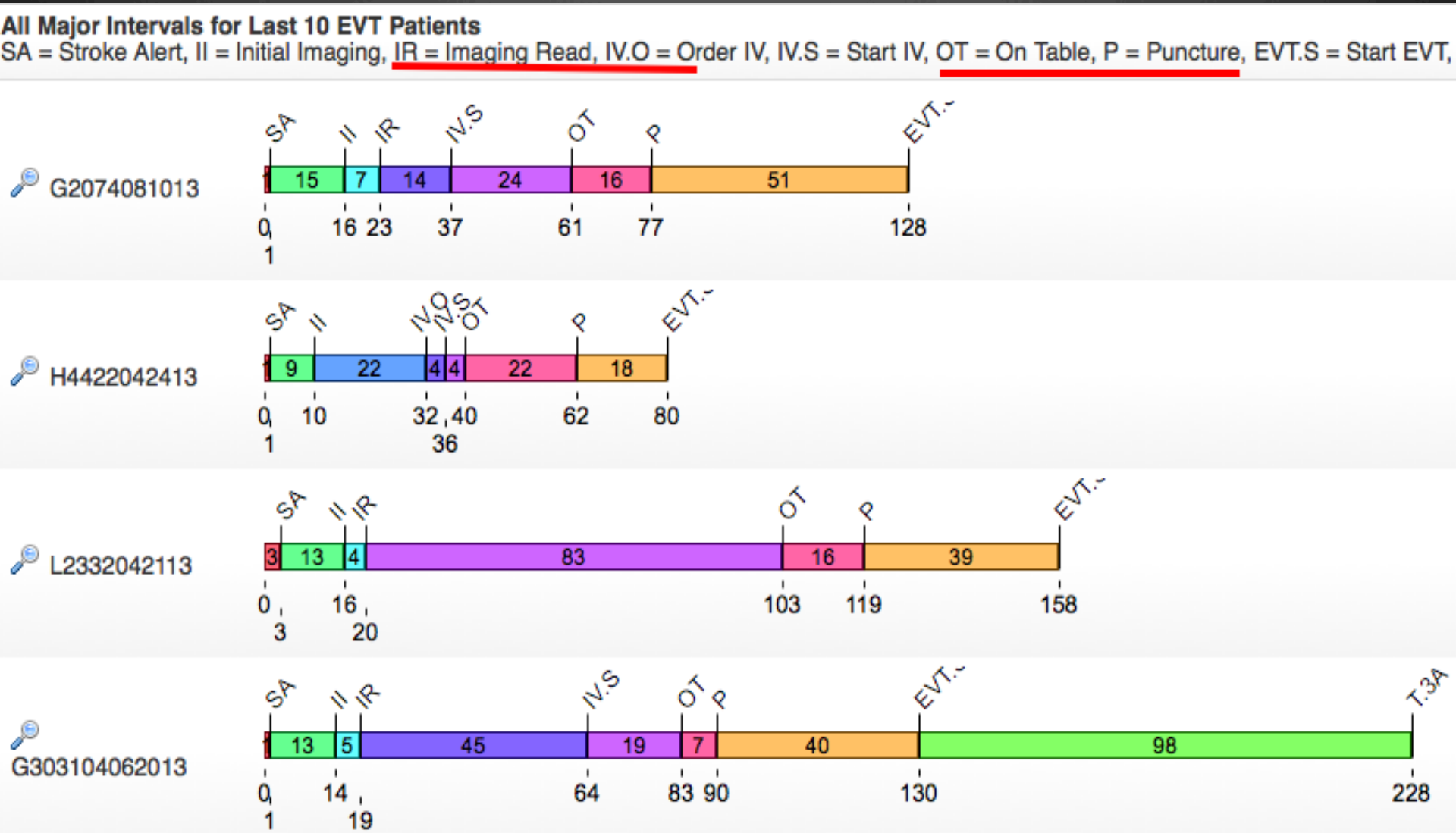
- SA = Stroke alert
- II = Initial Imaging
- IV O = IV TPA Ordered
- IV S = TPA Started
- O.T = On Angio Table
- P = Puncture
- EVT = beginning of endovascular therapy (catheter in brain)

Only **INSTOR** can do this

Repeat slide

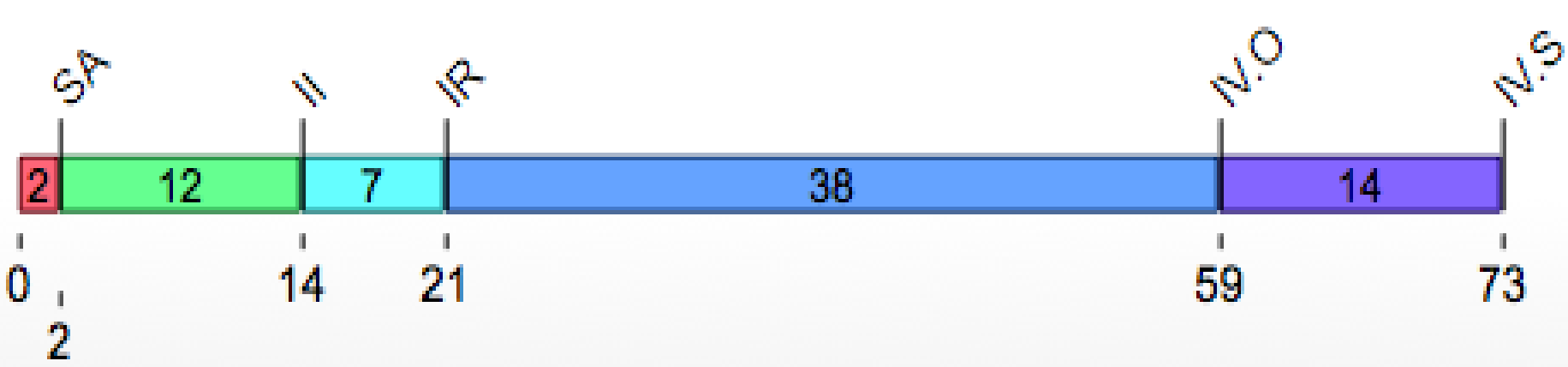
A real data analysis program

Ever seen this?



IV TPA Case

Where is the delays?



IV TPA Case

Where is the delays?

Time to make a decision: 38 minutes

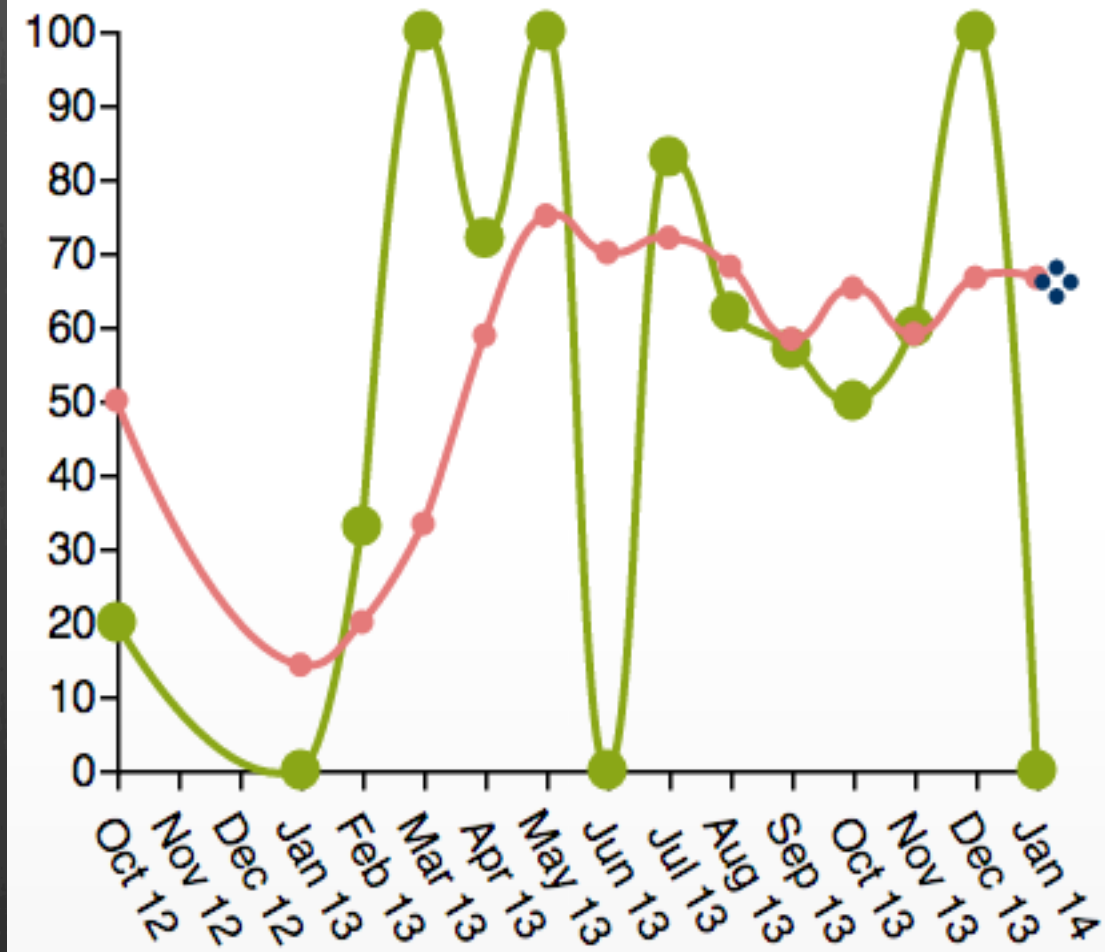
Percentage of acute stroke Outpatients that have IV tPA administered within 60 minutes from time of arrival.

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

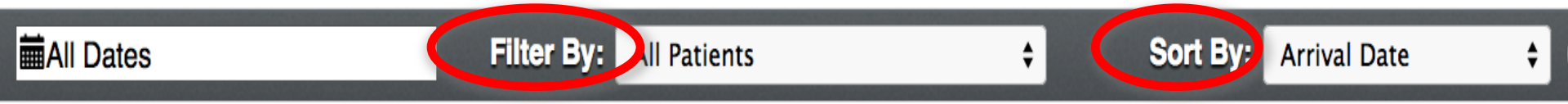


Only **INSTOR** can do this

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

ALL SICH

All early deaths

Type of stroke event:

- Mimic or TIA
- Stroke
- Intracerebral Hemorrhage
- Sub Arachnoid Hemorrhage
- Isolated intraventricular hemorrhage

Endovascular complications

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!