



Stroke Care Committee Meeting
 Thursday, May 21, 2024, 1:00 PM – 3:00 PM
 9616 Micron Ave. Suite 900, Sacramento, CA. 95827
 Conference Room 1

Facilitators: Gregory Kann, M.D. EMS Agency Medical Director
 Minutes: Yvonne Newson, EMS Specialist

ITEM	Details (Key facts, Questions, Concerns)	Action Items/Decision
Welcome and Introductions	Meeting start time 1:00 pm	None
Approval of Minutes – Feb 20, 2024	Motion to Approve: Tressa Naik Second: Lucian Maidan	None
Old Business	Discussion	Action Items/Decision
Stroke COMPASS Documentation	Greg Kann - Study for Large Vessel Occlusive Stroke (LVOs), Pre-Hospital Stroke Scale, and ask the question of "Patient Destination?" Sydney Freer – We are in a working group with Julie Carrington on best ways to document in the ePCRs and what information we are going to need from the hospitals.	None



New Business	Discussion	Action Items/Decision
Zodiac Trial	<p>Greg Kann - Patient Positioning in LVOs in the pre-hospital setting.</p> <p>Kevin Keenan—I think it would be good for Interfacility Transfers (IFTs) with known LVOs, but I think it is too soon to do it for suspected LVOs because the population of the suspected LVOs is Intracerebral Hemorrhage (ICH), and we have to worry about aspiration.</p> <p>Jonathan Hartman—Several studies show that even patients with larger vessel strokes benefit from endovascular treatments. So, the number of cases being done and being transferred to be done will probably increase.</p>	None
Data Review and Analysis	Discussion	Action Items/Decision
EMS Stroke Data	<p>Slide 2: Stroke Dashboard</p> <ul style="list-style-type: none"> • Possibly a documentation issue with Alerts not being documented. <p>Slide 7: Estimated Times for IFTs with Primary Impression Stroke</p> <ul style="list-style-type: none"> • Yvonne Newson—In review, two patients had delays of more than 4 hours. The narrative did not provide much information on the delay. The next step would be for me to contact the hospitals for clarification on the timing and the reason for the transfer. 	



	<p>Amelia Hart – Yesterday, we ended up getting a 9-year-old that they Stroke Alerted. Then there was a discussion that the kid should have been taken to Davis, but we do not have anywhere in our policy or protocol saying where to go or if UCD would be able to do anything differently. As a county, we need to think about that and tailoring it. I am aware it is a small number, but it just shows the impact if it were to happen.</p> <p>Greg Kann—It’s a tough question, but it is a good one to ask. Because your patient population is going to be very small, and just like you describe, the patient presentation may not be the classic stroke, identifying that patient in the field is going to be tough.</p> <p>Kwan Ng – I think to also keep in mind regardless of where they go. If you identify somebody as a pediatric stroke, it’s an automatic acceptance from our standpoint.</p> <p>Greg Kann—That said, I started to think about some of these cases. Do they need to go to UCD or a comprehensive? If they end up at one of our community hospitals, and when they are identified, they need to go to 911.</p>	
Round Table	Discussion	Action Items/ Decisions
	<p>Dawn Warner – I have heard this recurring theme of pediatric stroke at a Stanford conference, and it is constantly mentioned, and it is something that we need to be aware of.</p> <p>Kwan Ng – I would agree with what Dawn is saying. There just seems to be a higher risk of younger folks with stroke, severe strokes.</p>	



	<p>Lucian Maidan – Question to Dr. Hartman: how many IRs do you do on neuro-pediatric cases?</p> <p>Jonathan Hartman—We do them, but it is a little complicated because all the pediatric services moved out of the Sacramento Hospitals a long time ago. So, we either do them in Roseville or sometimes in Oakland. For systemic stroke, and someone is 15 or over, we can treat them at the Sacramento Hospital.</p> <p>Amelia Hart—I get what you are saying about bypassing them, but it gets complicated for the EMS to differentiate. At least with MSJ, we can work on the side about transferring and using 911 in these kids' cases.</p> <p>Lucian Maidan – I think we can work on a protocol for pediatrics if Stroke is suspected.</p> <p>Greg Kann – We can internalize that at the agency and have some conversations and think about it.</p>	<p>SCEMSA to look into a Pediatric Stroke protocol.</p>
<p>Adjournment</p>	<p>Adjourned at 2:30 pm</p>	<p>Next meeting: August 20, 2024 1 PM – 3 PM</p>



**Department of Health Services Emergency Medical Services Agency
Stroke Care Committee
2024 Case Presentation Rotation**

Date:	2/20/2024	5/21/2024	8/20/2024	11/19/2024
KHN		X		
KHR				X
KHS	X			
MGH			X	
MHF			X	
MHS				X
MSJ	X			
SMCS			X	
SRMC				X
UCD		X		

Stroke Liaisons

Contacts	KHN	KHR	KHS	MGH	MHF	MHS	MSJ	SMCS	SRMC	UCD
Primary	Jason Murray	Michelle Arrovo	Sherrv Whitcomb, JD, MSN, RN CPHQ	Emily Browne		Max Naximko, MSN, RN, SCRNI	Irina Rebello	Kandis Dowd	Jennifer Bingham	Kimberly Brink
Secondary	Jonathan Hartman MD					Anu Locricchio	Richard Otley, RN	Chase Childress	Patty McNamara	Dawn Warner
							Heidi Hollingsworth			

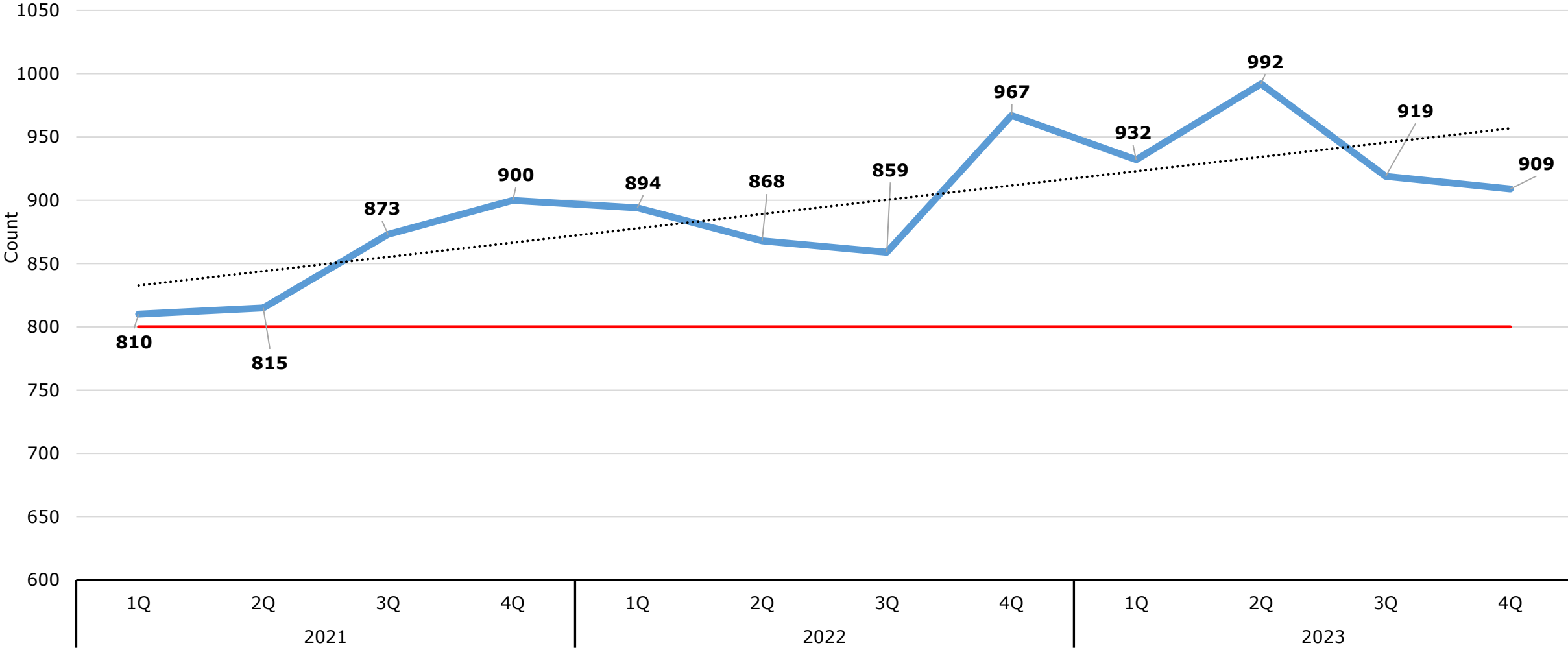
SCENE Calls (911-Response) – 4Quarter 2023	Incident Count	Percentages	Notes
Total ePCRs received	81,181	100%	All records
Responses (911-Response/Primary Response Area "PRA")	57,643	71%	of total responses
Treated and Transported (of 911-Response/PRA)	32,202	55.86%	of 911 responses transported to the ED
Primary Impressions of Treated and Transported -911-Response (Scene)	Incident Count	Percentages	
ALOC - (Not Hypoglycemia or Seizure) (R41.82)	1,144	3.55%	
Stroke / CVA / TIA (I63.9)	909	2.82%	
Sepsis (A41.9)	837	2.60%	
Patient Arrival for Stroke/ CVA/ TIA (I63.9)	Incident Count	Percentages	From ImageTrend Patient Registry (Hospital Data)
Private Vehicle	251	26.76%	
EMS from home/scene	382	40.72%	
Transfer From Another Hospital	298	31.77%	
Other /Unknown /Not Documented	7	0.75%	
Total Patient Count	938	100%	

Stroke Dashboard - EMS Data

Stroke	System Total 2023 1Q	System Total 2023 2Q	System Total 2023 3Q	System Total 2023 4Q
Total transported patients with Primary impression of Stroke	932	992	919	909
Number of patients with documented Stroke Screen	930	969	903	878
% of patients with documented Stroke Screen	99.78%	97.68%	98.26%	96.59%
Documented Glucose	898	958	875	863
% of documented Glucose	96.35%	96.57%	95.21%	94.94%
Patients with a Stroke pre-arrival notification	821	871	805	800
% of Stroke pre-arrival notification	88.09%	87.80%	87.60%	88.00%

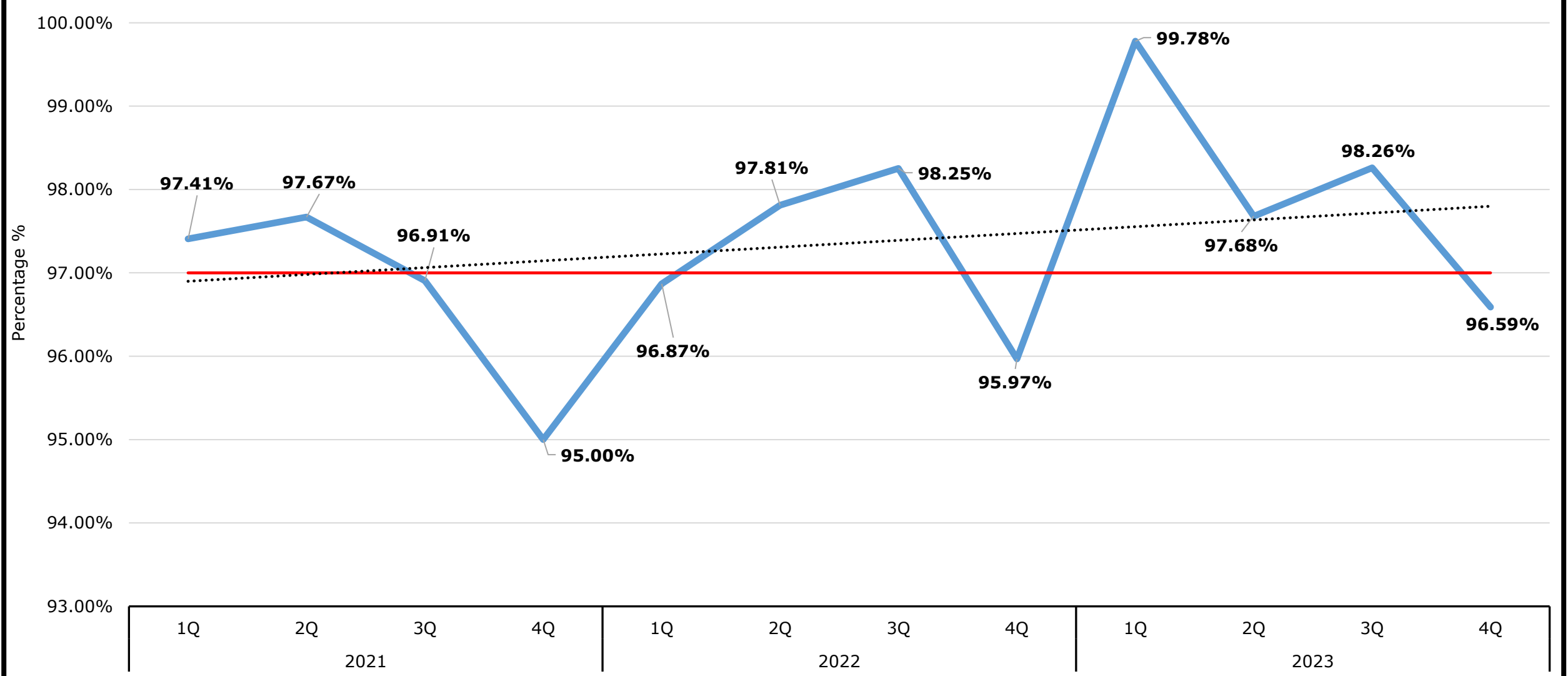
Trend Count of Patients with Primary Impression of Stroke

Count Average Linear (Count)



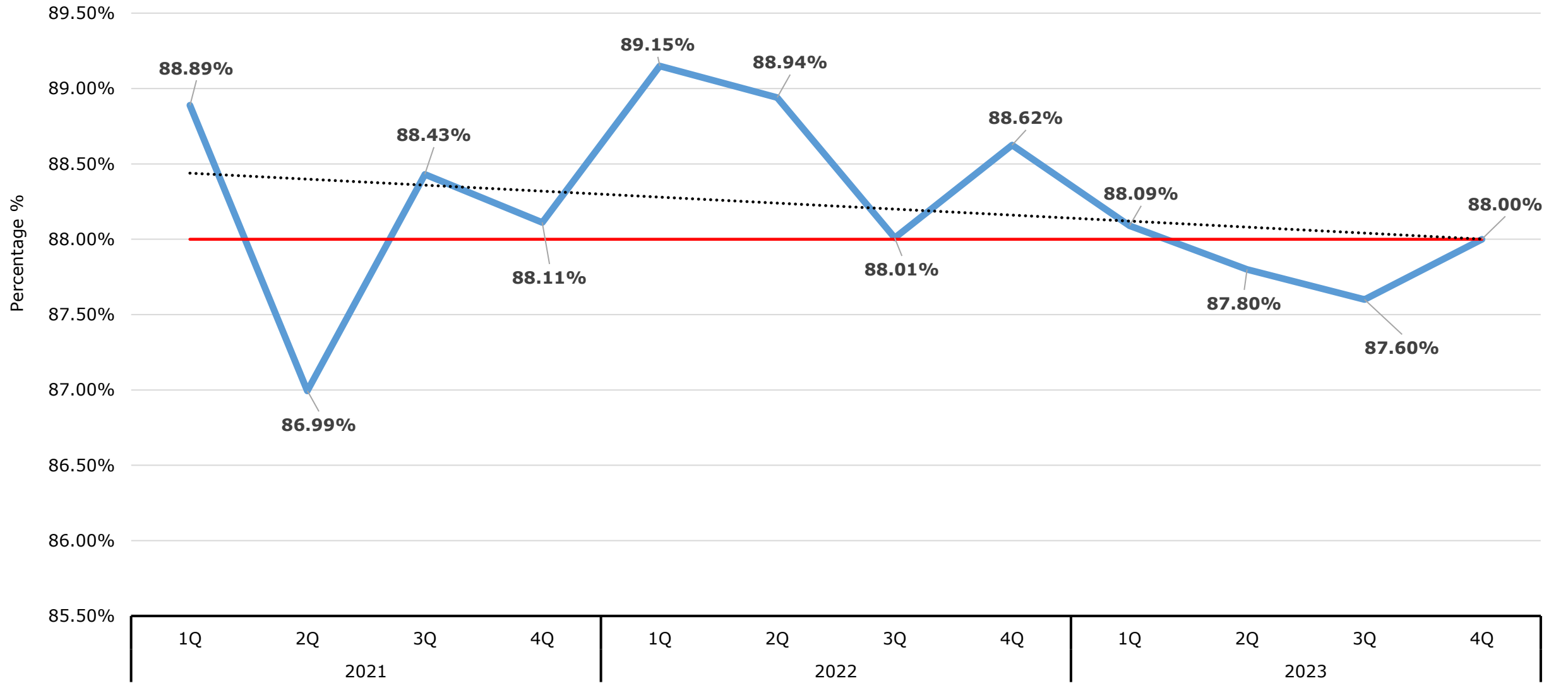
Percentage % Trend of Stroke Scales Performed on Patients with Primary Impression of Stroke

Percentage% Average Linear (Percentage%)



Percentage % Trend of Stroke Alerts for Patients with a Primary Impression of Stroke

Percentage % Average Linear (Percentage %)



Stroke Primary Impression for Treated and Transported Patients

EMS Data

Hospital Name	1Q-2023	2Q-2023	3Q-2023	4Q-2023
KHR	40	56	69	51
KHN	179	153	157	153
KHS	145	208	167	178
MGH	48	49	47	45
MHF	72	76	51	52
MSJ	173	183	173	191
MHS	85	89	69	78
VAMC	4	0	0	0
SMCS	84	87	97	75
SRMC	38	30	25	22
UCD	64	60	63	61
OOA	0	1	1	3
Total	932	992	919	909

Estimated Times for Primary Impression of Stroke for IFTs- 2023 4Q

Equation used

IFT EMS Unit eTimes.12 (Transfer of Care Time) minus 911 Response Unit eTimes.09 (Left Scene Date Time)

Hospitals

- KHS to KHN
- KHR to KHN
- MHS to MSJ
- MHF to MSJ

Time Category	Estimated Time
90th Percentile	06:28:36
Average	00:57:55
Median	03:37:14

Hospital / EMS Stroke Data

3Q 2023

Total Hospital Stroke Patients: 911

Total Brought in by EMS: 353

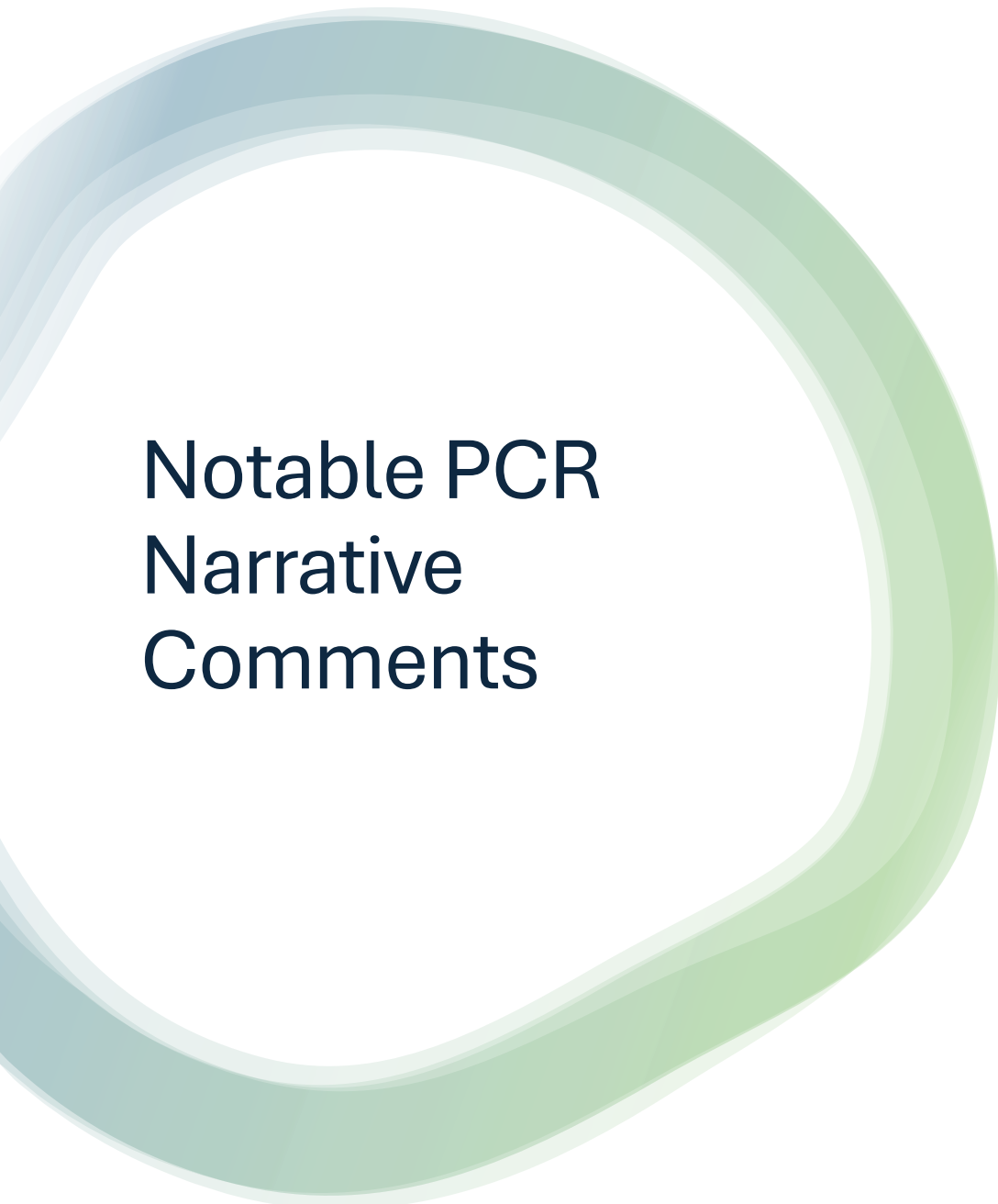
Total EMS Stroke Alerts / Stroke Primary Impressions: 991

*Arriving at out of county hospitals: 98

In-County EMS Stroke Alerts / Stroke Primary Impressions: 893

EMS patients with a Final Clinical Diagnosis of Stroke: 161 (= 18.03% of in-county EMS Stroke Alerts)

Hospital Stroke Calls	Count	Percentages
Total Hospital Stroke Patients	910	100%
Brought in by EMS	352	38.68%
Of Patients Brought in by EMS	Count	Percentages
Stroke Alerted (or identified but care transferred)	178	50.57%
Blank / PCR Not Found	55	15.62%
Symptoms Greater than 24 Hours	6	1.70%
Missed in the Field	113	32.10%
Of Missed in the Field	Incident Count	Percentages
Chest Pain / Cardiac	3	2.65%
Overdose / Alcohol	3	2.65%
Seizure	2	1.77%
Traumatic Injury	9	7.96%
Unable to Perform Stroke Scale	6	5.31%
Stroke Scale Negative	40	35.40%
Sepsis / Infection	6	5.31%
Symptoms but not Alerted	6	5.31%
No Stroke Scale	39	34.51%



Notable PCR Narrative Comments

- Speech abnormal according to family but no stroke assessment mentioned
- Family advises periods of stroke symptoms prior to arrival
- Left sided weakness but no stroke assessment mentioned
- “Slurred Speech” followed by negative stroke assessment (x3)
- Dizziness and wife advising previous stroke with the same symptoms, but stroke scale negative
- Facial droop assumed to be caused by denture so not stroke assessed
- Family advises speech is slurred but language barrier prevents EMS from stroke assessing
- New onset ALOC decreased to BLS Care with no stroke assessment mentioned (x2)