

You Can't Handle the Truth: The Discordance Between EMR Orders and Reality

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BACKGROUND

- Cardiac telemetry monitoring has often been identified as an area of overutilization and remains a limited resource in many hospitals.
- To help reduce unnecessary monitoring, we added clinical decision support to our health system's telemetry order with guidance on the appropriate indications for and duration of monitoring when initiating telemetry.
- An appropriate clinical indication must be selected to sign the order.
- The objective of this study was to understand the use of the clinical decision support tool in daily practice by assessing the concordance between selected order indications and their documented clinical presence.**

METHODS

- This was a retrospective review of 100 orders for cardiac monitoring randomly selected from all telemetry orders placed from July to October 2022 across four hospitals affiliated with NYU Langone Health (N = 30,839).
- Each selected order matched to a unique patient.
- Each chart was reviewed by two independent reviewers to find documented clinical indications for telemetry.
- Reviewers were blinded to which indication was selected within each order.
- True clinical indications for telemetry monitoring were identified via a systematic protocol using clinical criteria detailed in the new telemetry order.
- The primary outcome of interest was the concordance rate between selected indications on the order and true documented clinical indications.**
- Concordance rates were determined by the percentage of orders for a given indication for which the same indication was found to be clinically present upon chart review.

Figure 1. Cardiac Telemetry Monitoring Order Support added to the Electronic Medical Record

Indication for Telemetry	Length of Monitoring	Transport with Monitoring
<ul style="list-style-type: none"> High risk chest pain/Rule out MI Other arrhythmia Rule out Stroke/TIA Drug overdose 	24 Hours	User decision
<ul style="list-style-type: none"> Atrial fibrillation with RVR Syncope Acute decompensated heart failure 	48 Hours	User decision
<ul style="list-style-type: none"> Acute coronary syndrome Infective endocarditis 	72 Hours	User decision
<ul style="list-style-type: none"> Heart block Sustained VT/VF 	72 Hours	Yes
<ul style="list-style-type: none"> Post-op Cardiothoracic Surgery Confirmed Stroke 	120 Hours	Yes
<ul style="list-style-type: none"> Electrolyte imbalance New pacemaker/ICD Post invasive cardiac procedure Other (comment) 	Until discontinued - consult with the neurology team	Yes
<ul style="list-style-type: none"> Critical illness Trauma 		
<ul style="list-style-type: none"> QT prolongation risk 		
<ul style="list-style-type: none"> Antiarrhythmic loading/High-risk antiarrhythmics 		

Chart 1. All Telemetry Orders placed from July-October 2022 by Indication

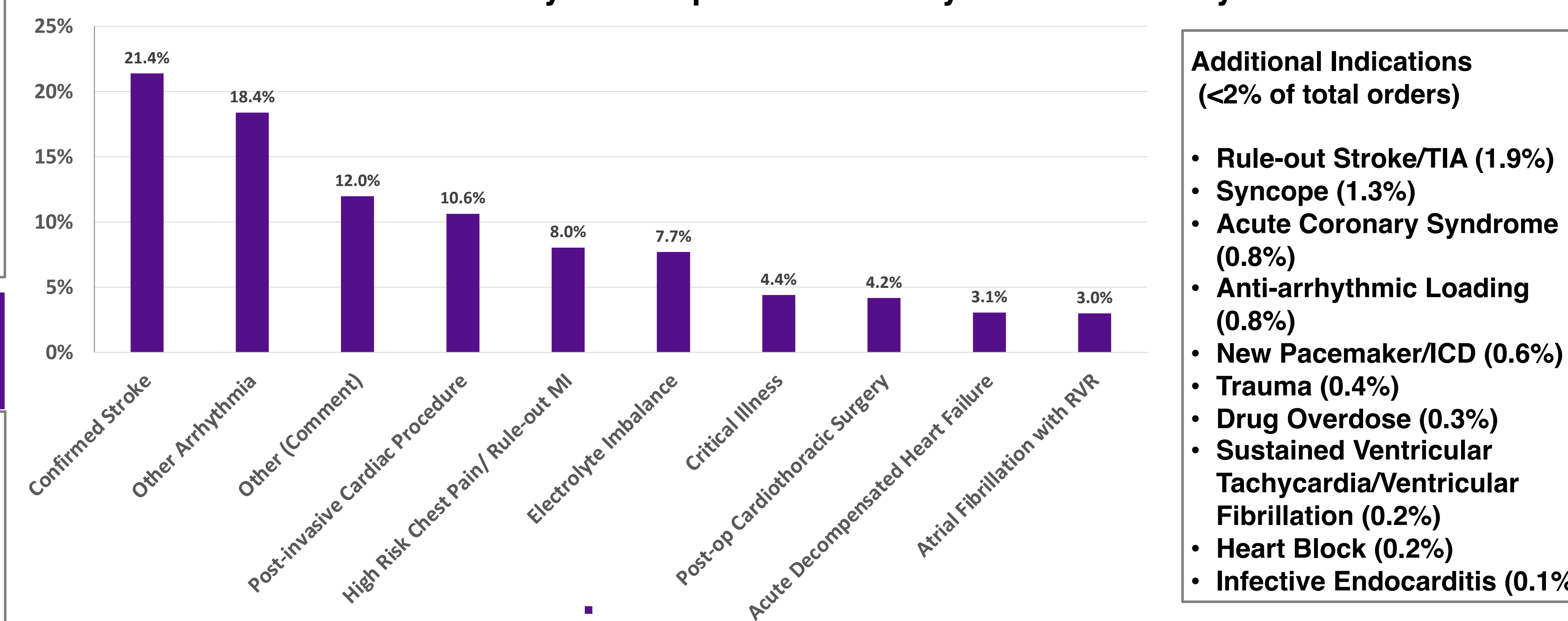


Table 1. Concordance Rates for Provider Selected Indications

Selected Order Indication	Volume	Concordance n	(%)
Other arrhythmia	24	10	41.7%
Confirmed stroke	17	2	11.8%
Post invasive cardiac procedure	15	15	100.0%
Electrolyte imbalance	9	5	55.6%
High risk chest pain/Rule out MI	7	4	57.1%
Critical illness	6	2	33.3%
Other (Comment)	5	0	0.0%
Post-operative cardiothoracic surgery	5	3	60.0%
Atrial fibrillation with RVR	4	3	75.0%
Trauma	3	2	66.7%
Acute coronary syndrome	1	1	100.0%
Acute decompensated heart failure	1	1	100.0%
Antiarrhythmic loading/High-risk antiarrhythmics	1	0	0.0%
Rule-out stroke/TIA	1	0	0.0%
Syncope	1	0	0.0%
Total Concordance	100	48	48%

RESULTS

- There were 30,839 total telemetry orders initiated from July 2022 to October 2022.
- Of all telemetry orders, the most commonly selected indications were "Confirmed Stroke" (21.38% of orders), "Other Arrhythmia" (18.39% of orders), "Other", allowing providers to comment an un-listed indication (11.97% of orders), and "Post-invasive cardiac procedure" (10.62% of orders).
- Of the highest volume selections, "Other" and "Confirmed Stroke" had the lowest concordance rates, at 0% and 11.8%, while "Post-Invasive Cardiac Procedure" had 100% concordance.
- The overall concordance rate for all reviewed orders was 48%.

CONCLUSIONS AND DISCUSSION

- "Confirmed Stroke" was the only indication that allowed for continuous telemetry monitoring without a defined duration. The low concordance rate of this selection, 11.8%, suggests that providers are more likely to select an indication that reduces downstream work regardless of a patient's true clinical indication.
- Providers may also be more likely to select broad indications such as "Other" and "Other Arrhythmia," especially with an order with many options for selection.
- Concordance was higher in some clinical situations where the indication was straightforward and apparent, such as a 100% concordance rate when providers selected "Post-operative cardiac procedure" as the indication.
- The overall concordance was low suggesting a disconnect between the support tool and actual clinical events.
- These results also have implications for how providers interact with other decision support tools across other institutions and medical record systems.