MISSION: LIFELINE®

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Regional Hospital Report Interpretation Manual

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INTRODUCTION AND DEFINITIONS

The Mission: Lifeline® Regional Hospital Report describes your system's quarterly performance on various process measures for the acute care of patients with ST-elevation myocardial infarction (STEMI). The Mission: Lifeline Regional Hospital Report Glossary provides specific definitions and inclusion/exclusion criteria for each of these measures. Where applicable, these measures match the ACTION Registry®-GWTG™ definitions.

This manual is intended to be used as a reference tool to assist in the interpretation of the Mission: Lifeline Regional Hospital Report. There are several important definitions that apply throughout the Mission: Lifeline Regional Hospital Report and Glossary.

EMS: Emergency Medical Service. Refers only to patients transported to the hospital via ambulance. Other 3rd-party modes of transport (Mobile ICU, Air) are included in specific report line items only where noted.

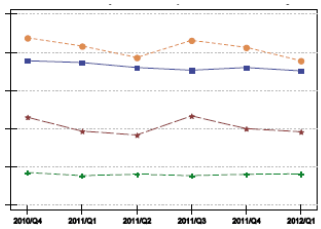
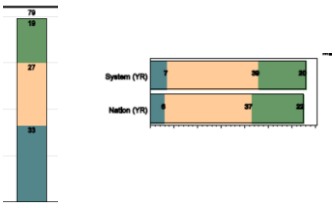
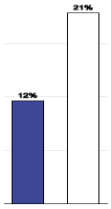
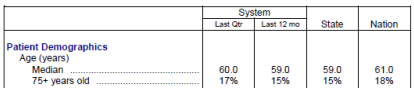
POV: Personally Operated Vehicle. Refers to patients who transport themselves to the hospital, or who are transported to the hospital by a family member or friend.

FMC: First Medical Contact. In the context of the report, this term is applicable ONLY when a patient is seen by medical personnel prior to hospital arrival and arrives via ambulance (EMS).

System: All Mission: Lifeline hospitals participating in the specified regional hospital group. System data are an aggregate of data from all hospitals within the group.

METHODS OF DISPLAYING DATA

The Mission: Lifeline Regional Hospital Report describes your system's quarterly performance on multiple process measures. These data are displayed in the following ways.

	***Line graphs –*** Plot system and national medians for the given measures over the previous six quarters. System data are displayed using a dotted line. National data are displayed using a solid line.
	***Stacked bar graphs –*** Display incremented median times for multiple components within a specific process measure. • Vertical graphs depict individual hospitals benchmarked against the system aggregate for the current quarter. • Horizontal graphs depict the system aggregate benchmarked against the nation for the previous 12 months.
	***Solid bar graphs –*** Display individual hospital frequencies (%) for a specific process measure, benchmarked against the system aggregate for the current quarter.
	***Box and whiskers plots –*** Display distribution of times for a specific process measure, including mean, median, and inter-quartile range, benchmarked against the system aggregate for the current quarter. • Box – 25th to 75th Percentiles (inter-quartile range) • Whiskers (vertical lines) – Range of actual values. Whiskers may be "clipped" for extreme outliers to avoid skewing the graph format. The number of clipped plots is noted at the top of the graph. • Black bar (inside the Box) – Median (middle) value • Crosshatch (+) – Mean (average) value • Red bar (across all plots) – National Median value.
	***Tables –*** Display system-level line items for various data points, benchmarked against the state and the nation for the current quarter and the last 12 months.

	System		State	Nation
	Last Qtr	Last 12 mo		
Patient Demographics				
Age (years)				
Median	60.0	59.0	59.0	61.0
75+ years old	17%	15%	15%	18%

You may observe sections in the report where results are not displayed for a particular item. A "missing" hospital bar, or a hyphen (-) in a data table, indicates that there were no patients eligible for that particular item, i.e., the denominator is zero. A hospital bar or a line item in a data table that displays 0% means that patients were eligible, i.e., in the denominator, but that no patients met the criteria for that item, i.e., the numerator is zero.

BENCHMARKS

In order to help you to evaluate your system's treatment of STEMI patients, the Mission: Lifeline reports provide several benchmarks. The first and most important benchmark is performance over time. Assuming your system of data collection remains constant, this benchmark enables you to best judge the success of your system's quality improvement initiatives.

Additionally, we encourage you to compare your hospital results against two external benchmarks provided within the Mission: Lifeline reports, as detailed in the table below. When making comparisons to these external points of reference, it is important to recognize certain caveats.

- First, external benchmarks tend to exhibit less variability over time than system results due to their larger sample size.

- Second, we believe that ACTION Registry-GWTG participants generally report accurate information. However, sites may vary in the degree to which they are able to identify certain events – a function of both data collection mechanisms at hospitals and patient record-keeping. To help ensure the validity of the data, we reiterate the importance of careful and consistent application of the variable definitions provided to you.

External Benchmarks	
State:	All data reported by Mission: Lifeline hospitals in your state within the previous 12 months. This benchmark is provided for states with at least six ACTION Registry-GWTG hospitals submitting data during the reporting period.
Nation:	All data reported by all Mission: Lifeline hospitals during the previous 12 months.

RISK-ADJUSTMENT

When risk-adjustment is used, outcomes are analyzed by accounting for the patient risk factors that could significantly increase the risk of mortality or other adverse events. Unadjusted rates do not reflect differences in patient age or overall comorbid conditions that vary among hospital and system types. Some systems may have an older, sicker patient population than others, and thus, have seemingly higher mortality rates. Risk adjustment accounts for such factors and shows you how your system's mortality compares to its expected mortality given its case mix. Benchmarks are also provided, so that sites may compare their performance with that of all Mission Lifeline sites in their state and the nation.

Similarly, systems with higher risk patients will typically note that their risk-adjusted mortality is lower than their unadjusted mortality. Systems with lower risk patients will typically observe that their risk-adjusted mortality is higher than their unadjusted mortality.

The Mission: Lifeline regional hospital reports include both the unadjusted (i.e., observed) and expected (i.e., predicted) mortality rates for the system, state, and nation, as well as the ratio of these rates.

- *Observed mortality* is simply the raw rate of death among all patients at all hospitals in the system.
- *Expected mortality* is the average of the predicted probabilities of death among all patients at all hospitals in the system. Patient predicted probabilities are calculated using the ACTION Registry-GWTG mortality model.
- The *observed to expected ratio*, or ***O/E ratio,*** is presented to assist with understanding how the observed mortality rate compares to the expected mortality rate. A ratio of < 1 indicates an observed mortality rate that is better than expected (i.e., observed rate is lower than the expected rate), given patient case mix. A ratio of > 1 indicates observed mortality is worse than expected.

To further assist with interpretation of mortality rates, *confidence intervals* are presented for observed mortality and for the O/E ratio. Confidence intervals denote the range in which future values are likely to fall, and are an expression of the potential variability of the results over time. The smaller the confidence interval, the less variability is likely for future results. Both patient volume and case mix can affect the confidence interval. Systems with lower volume or a less homogeneous patient population will see a wider range of potential values than those with higher volume or more patient homogeneity. The confidence interval for national mortality results is very small, indicating a large, stable population with very limited potential for variability.