



MASSACHUSETTS
Health & Hospital
ASSOCIATION

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Nursing-Sensitive Measure Report

Statistical Appendix

October 2022 – September 2023



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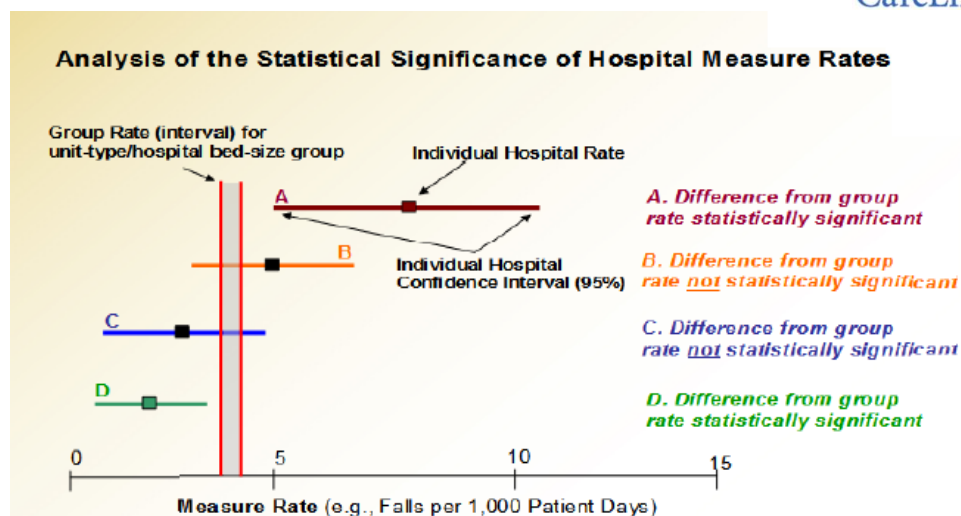
Analysis of the Statistical Significance of Hospital Measure Rates

Because the measure rates for the hospitals are for a specific period of time, and because there is variability in performance over time because of chance and other factors, there is a degree of uncertainty about the extent to which a hospital's measure rate may reflect its true underlying performance. Without taking this uncertainty into account, we cannot conclude that a hospital with a measure rate that is higher or lower than the group rate is truly performing at a worse or better rate than the group.

Statisticians use **confidence intervals** to account for this uncertainty. A confidence interval is a numeric range around the estimate represented by the hospital's measure rate, calculated to provide a specified level of confidence that the interval includes the true underlying performance of the hospital. The confidence level chosen for this analysis, 95% confidence, means that, in repeated collection and analysis of similar data, 95% of the resulting confidence intervals will include the true rate. The use and interpretation of confidence intervals in the nursing-sensitive measures is **illustrated below**. For any hospital (A, B, C, or D), the measure rate represented by the square is accompanied by a confidence interval (horizontal line). When a hospital's confidence interval does not intersect the group interval, represented by the vertical lines (hospitals A and D in the illustration), we can say that the difference between the hospital rate and the group rate is statistically significant and likely represents a true difference in performance. When the hospital's interval completely crosses the group interval (hospitals B and C in the illustration), the difference is not statistically significant. (When a hospital's interval extends only a small distance into the group interval, the difference may be statistically significant and additional calculation is required.)

The confidence level of 95% applies to the confidence interval for each individual hospital. In a group of 20 hospitals, one would expect, on average, that one confidence interval does not actually include the hospital's true rate. Hospitals' confidence intervals will vary in width because, among other factors, the measure rate is based on more or fewer observations (i.e., patient days).

Abt Associates Inc. advised MHA on the analytic approach and performed the statistical analysis.



Acute Care Hospitals

Hospitals will be found within the section of their bed-size group. Hospitals are listed alphabetically within bed-size groups below. Not all hospitals will have data for each unit-type. The data graphs are presented in order of hospital-bed size group, low to high.

<i>Less than 100 Beds</i>	
Addison Gilbert Hospital	Falmouth Hospital
Athol Hospital	Massachusetts Eye and Ear Infirmary
Baystate Noble Hospital	Nashoba Valley Medical Center
Baystate Wing Hospital	Southcoast Hospitals Group – Tobey Hospital
Beth Israel Deaconess Hospital – Needham	UMass Memorial Marlborough Hospital
Fairview Hospital	
<i>100 – 199 Beds</i>	
Anna Jaques Hospital	Holy Family Hospital at Haverhill
Baystate Franklin Medical Center	Lawrence General Hospital
Beth Israel Deaconess Hospital – Milton	Melrose Wakefield Hospital
Beth Israel Deaconess Hospital – Plymouth	MetroWest Medical Center – Framingham Campus
Brigham and Women’s Faulkner Hospital	Milford Regional Medical Center
Cambridge Health Alliance – Cambridge	Morton Hospital
Cambridge Health Alliance – Everett	New England Baptist Hospital
Carney Hospital	Saint Anne’s Hospital
Cooley Dickinson Health	Sturdy Health
Emerson Health	UMass Memorial Health – Harrington
Heywood Hospital	UMass Memorial HealthAlliance – Clinton Hospital
<i>200 – 299 Beds</i>	
Berkshire Medical Center	Mercy Medical Center
Beverly Hospital	Mount Auburn Hospital
Cape Cod Hospital	Newton-Wellesley Hospital
Good Samaritan Medical Center	Saint Vincent Hospital
Holy Family Hospital at Methuen	*Signature Healthcare Brockton Hospital
Holyoke Medical Center	Winchester Hospital
<i>300 – 399 Beds</i>	
Lahey Hospital & Medical Center	Southcoast Hospitals Group – Charlton Memorial
Lowell General Hospital	Southcoast Hospitals Group – St. Luke’s Hospital
Salem Hospital	St. Elizabeth’s Medical Center
South Shore Hospital	Tufts Medical Center
<i>500 or More Beds</i>	
Baystate Medical Center	Brigham and Women’s Hospital
Beth Israel Deaconess Medical Center	Massachusetts General Hospital
Boston Medical Center	UMass Memorial Medical Center

*Temporarily closed & not reporting data at this time

Post-Acute Care Hospitals

Hospitals will be found within the section for their hospital type. Hospitals are listed alphabetically within hospital type below. Not all hospitals will have data for each unit-type. Post-Acute hospital data graphs follow the acute care hospital data graphs in this document.

Rehabilitation Hospitals

Bronson Rehabilitation Center at Baystate Noble Hospital
Encompass Health Rehabilitation Hospital of Braintree
Encompass Health Rehabilitation Hospital of New England
Encompass Health Rehabilitation Hospital of Western Massachusetts
Fairlawn Rehabilitation Hospital
Southeast Rehabilitation Hospital at Southcoast Hospitals Group - Charlton Hospital
Spaulding Rehabilitation Hospital Boston
Spaulding Rehabilitation Hospital Cape Cod
The Center for Rehabilitation at Berkshire Medical Center
Weldon Rehabilitation Hospital at Mercy Medical Center

Long-Term Post-Acute Care Hospitals

New England Sinai Hospital
Spaulding Hospital for Continuing Medical Care Cambridge
Tewksbury Hospital

Acute Care Hospitals



NSC-2 Pressure Ulcer Prevalence

December 2022*

March 2023

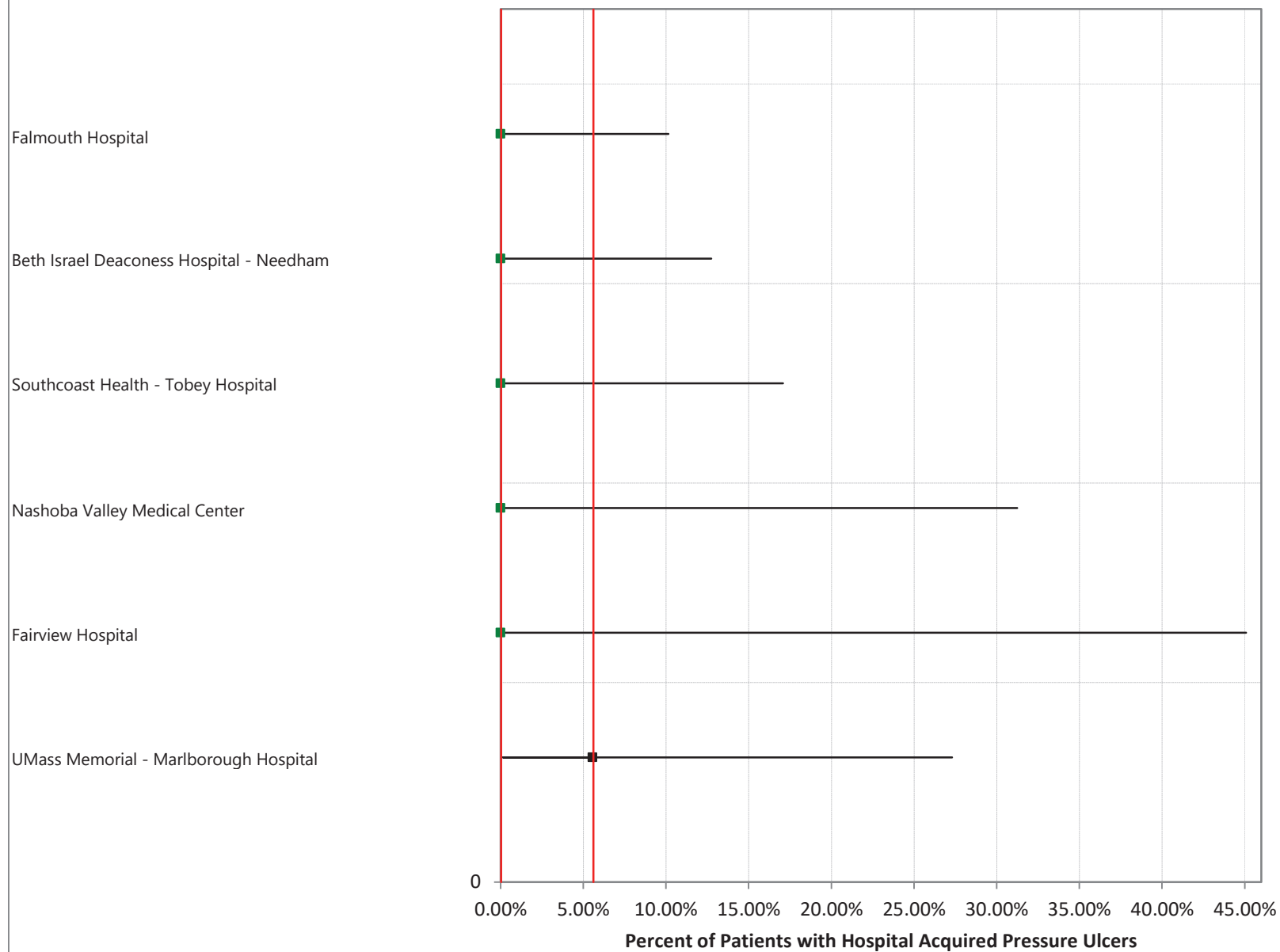
June 2023*

September 2023

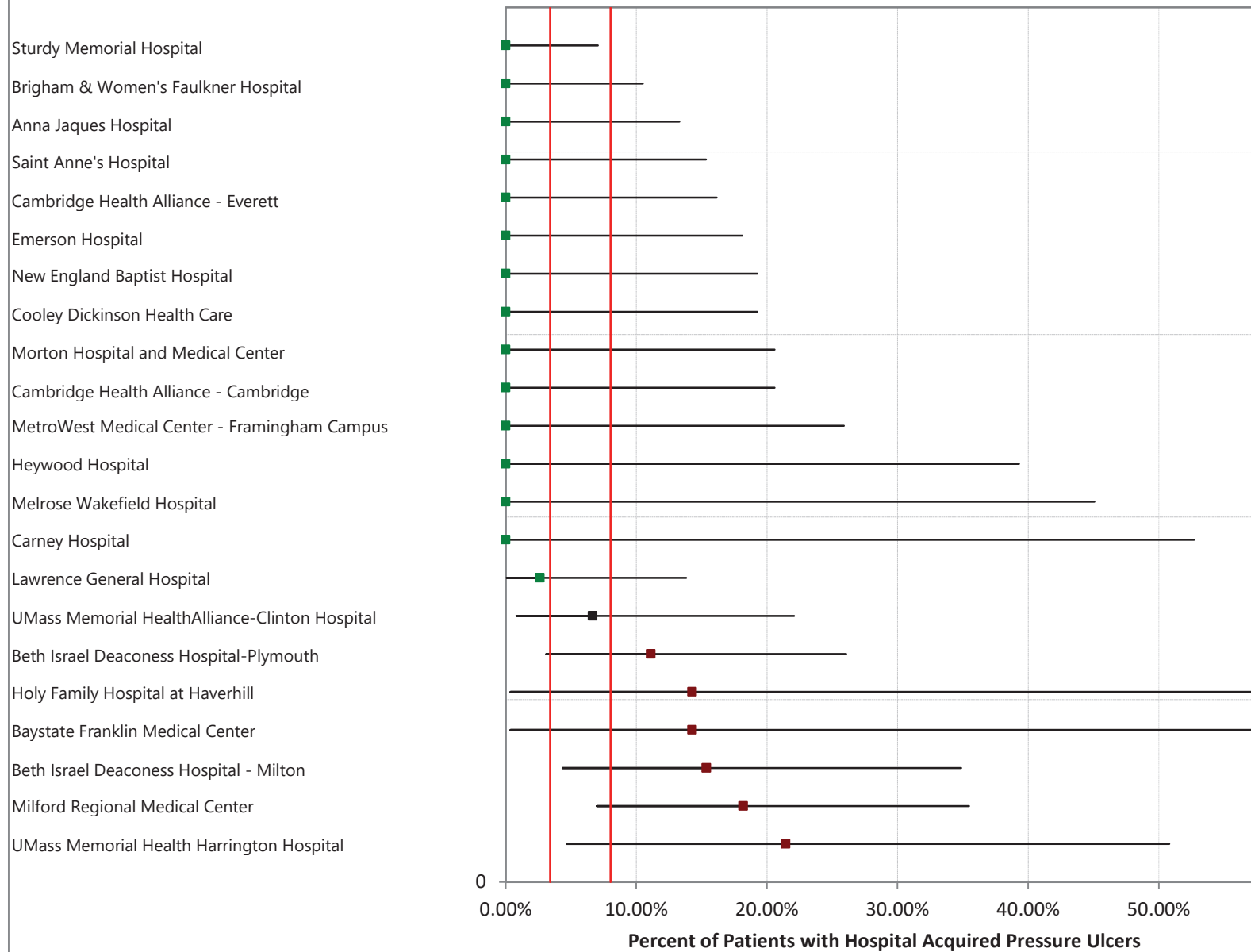
*** Optional studies**

December 2023

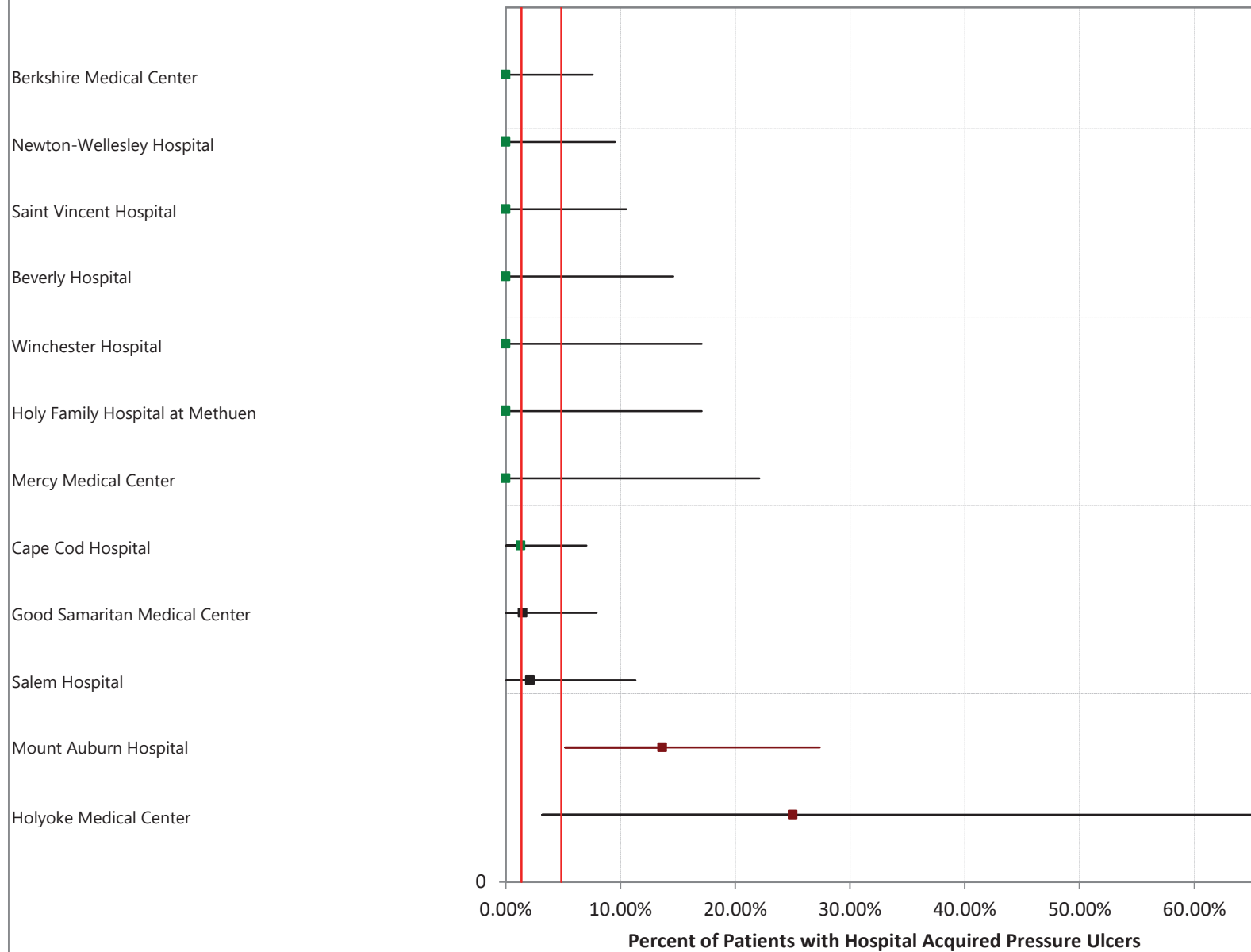
Adult Critical Care Units, Less than 100 beds



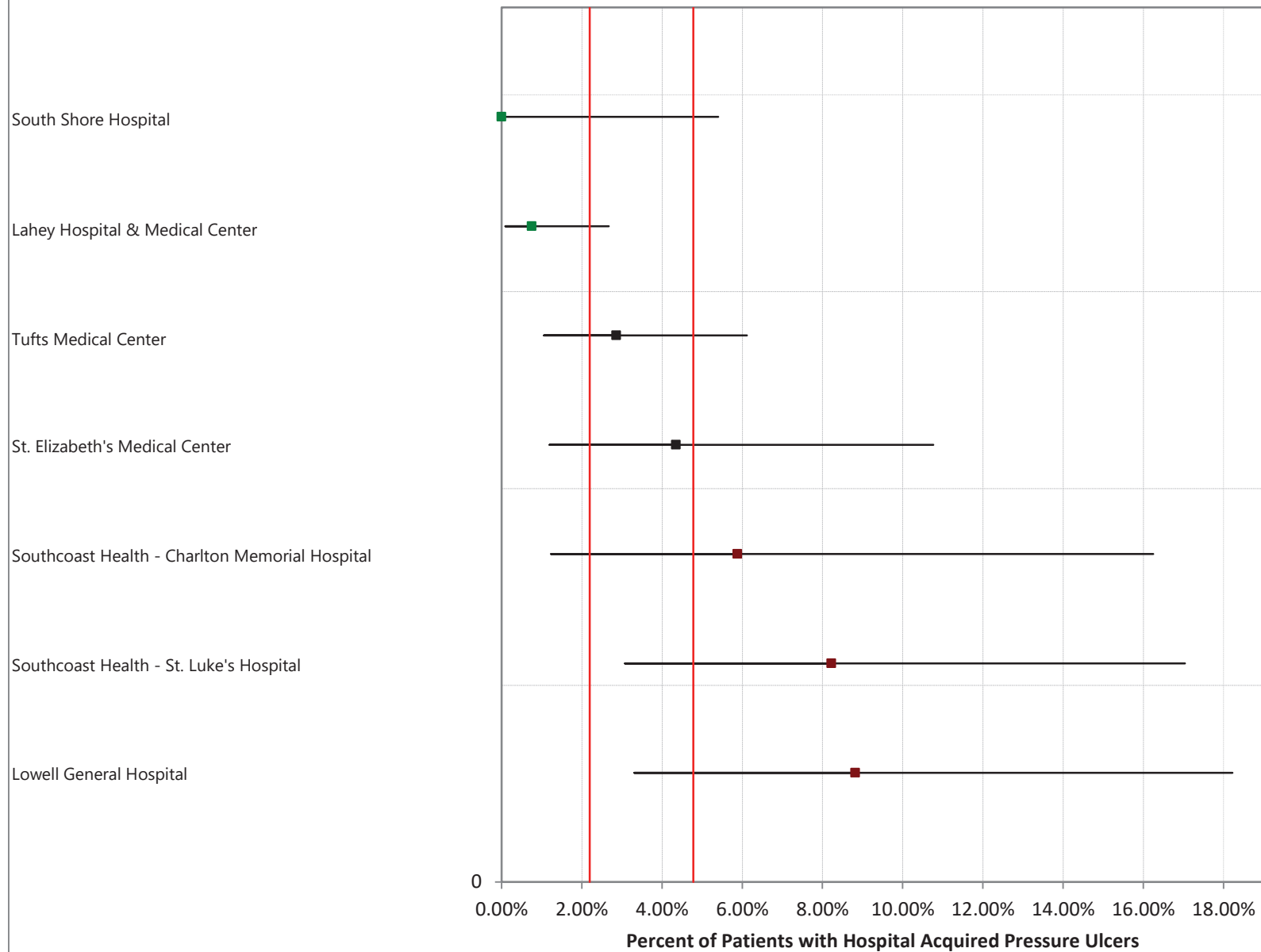
Adult Critical Care Units, 100-199 beds



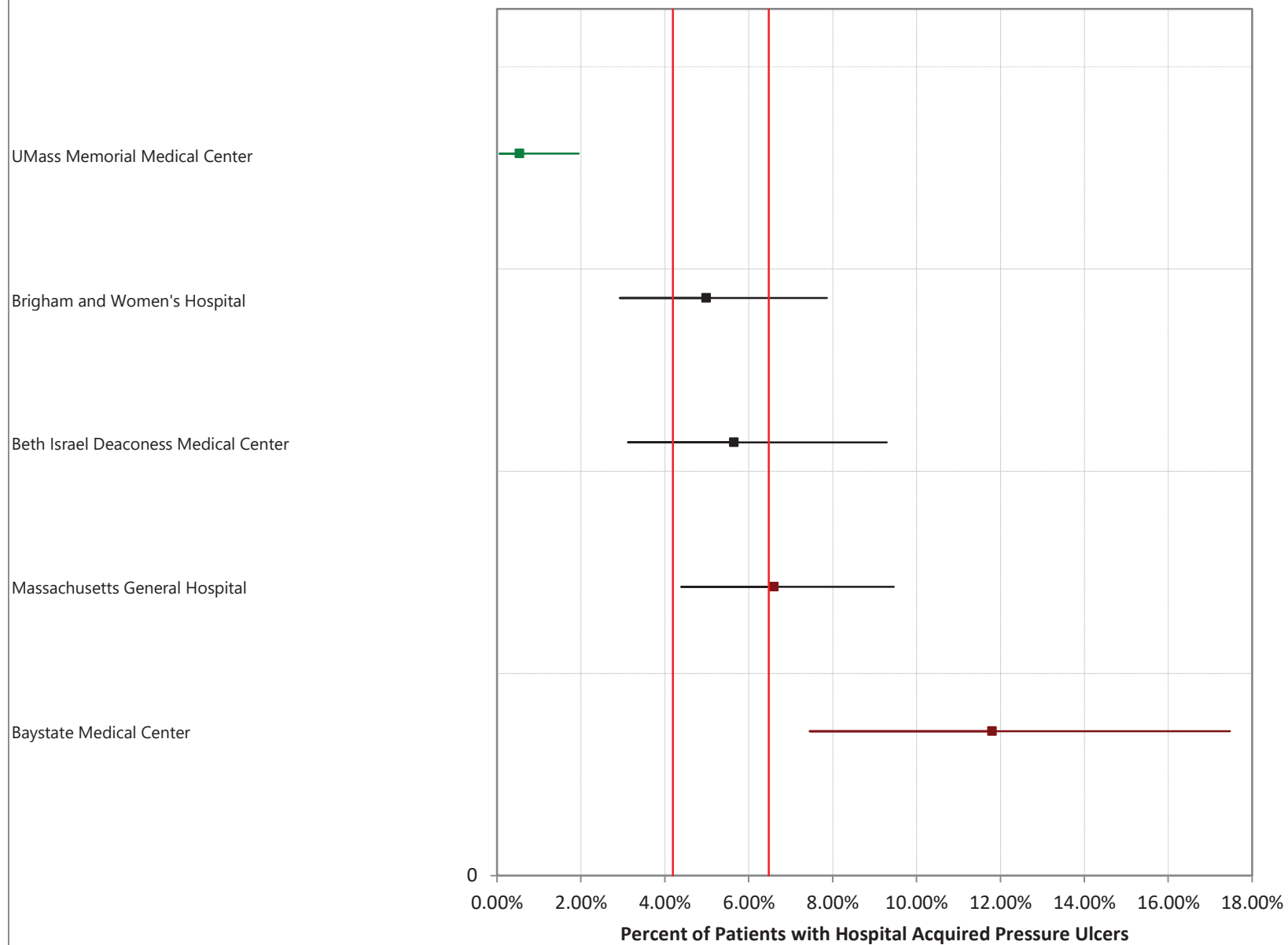
Adult Critical Care Units, 200-299 beds



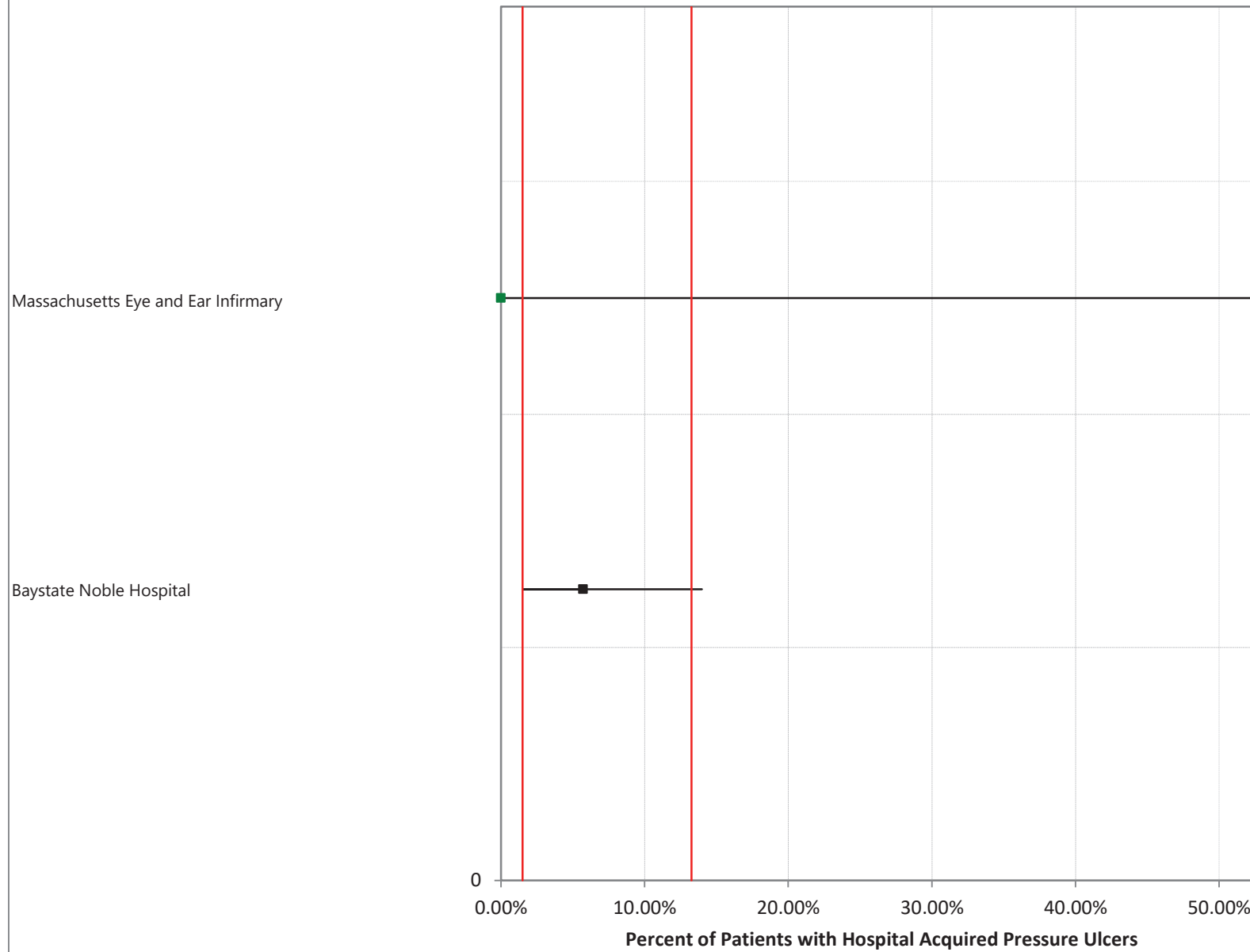
Adult Critical Care Units, 300-399 beds



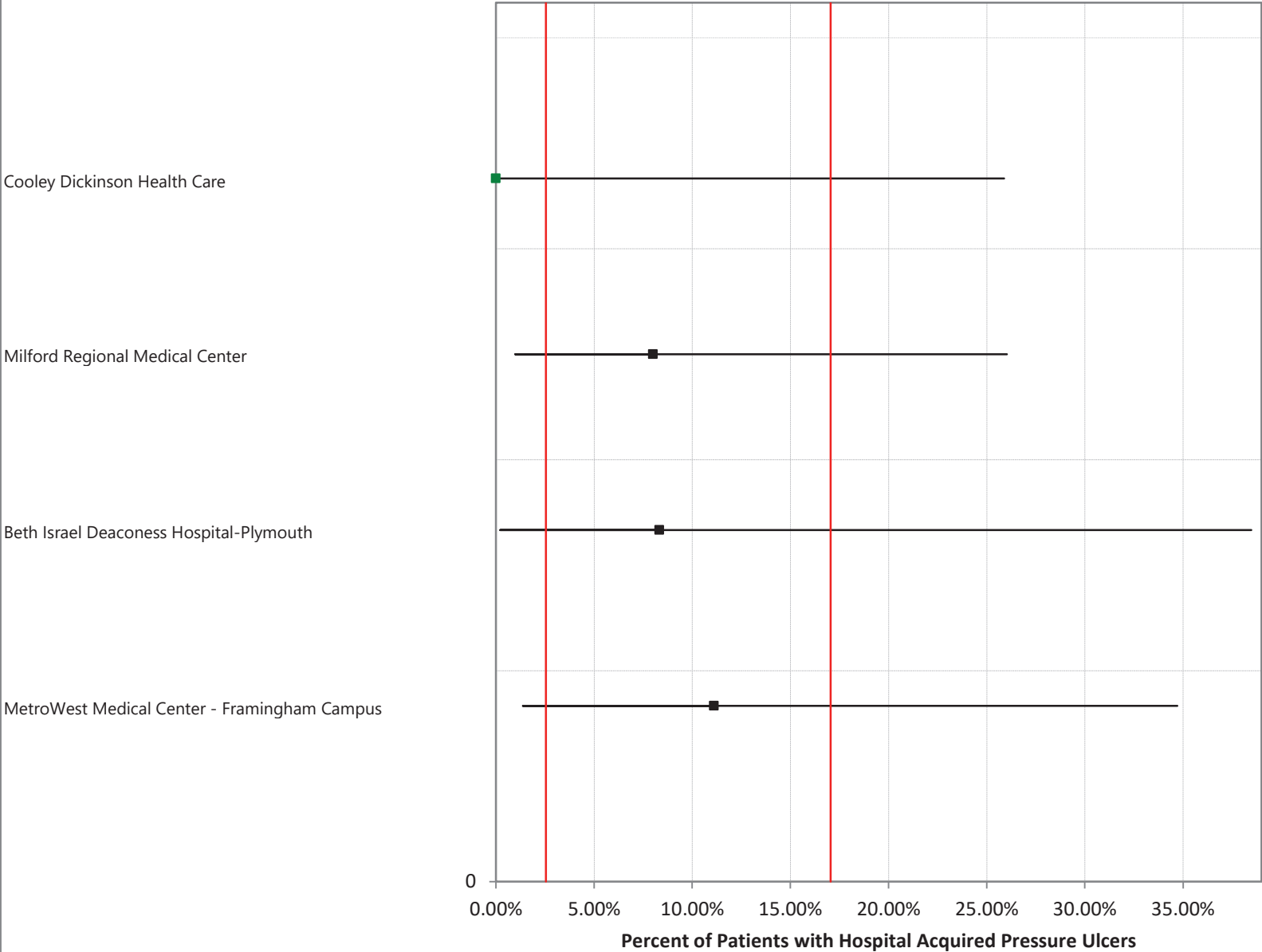
Adult Critical Care Units, More than 500 beds



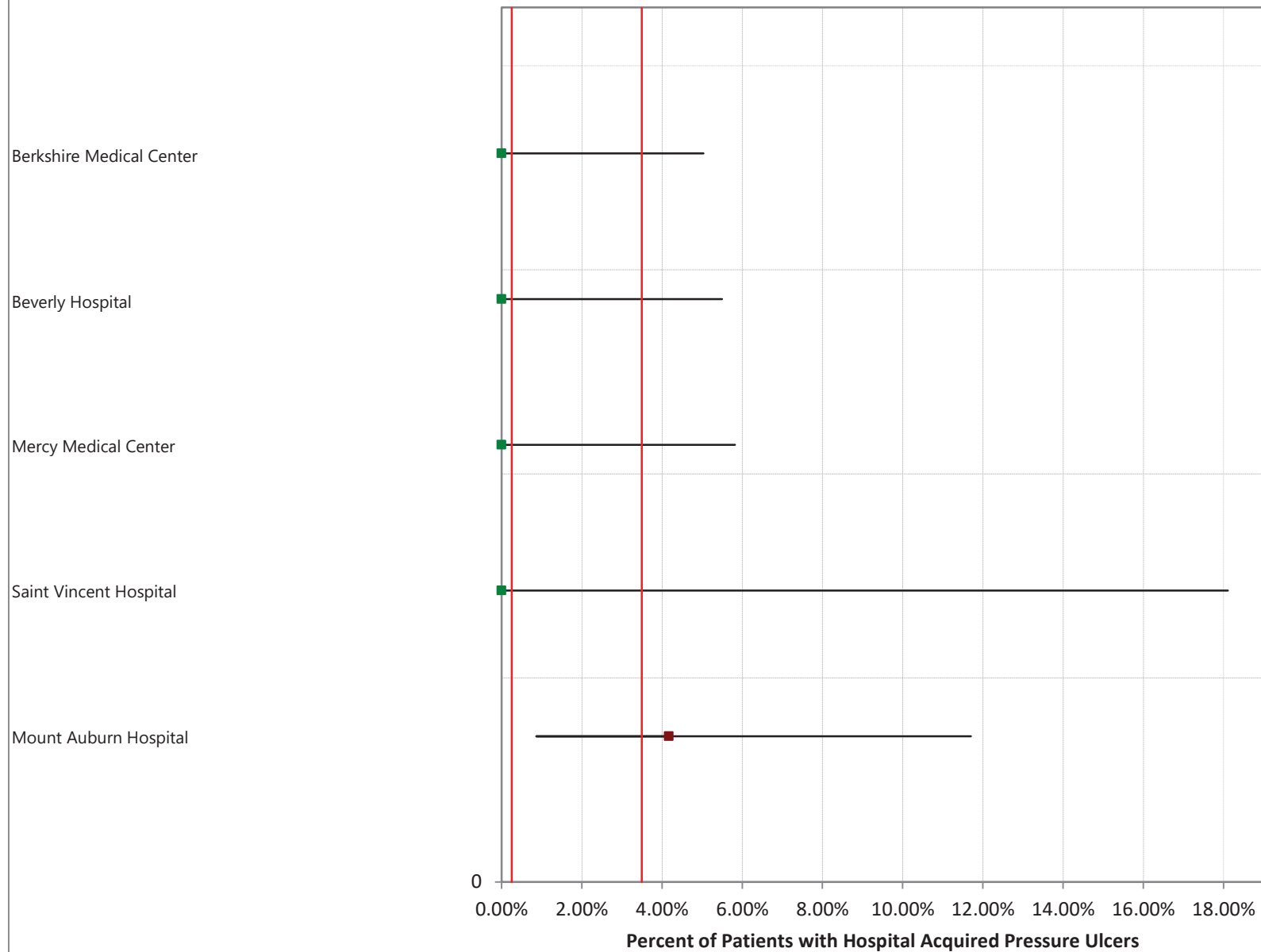
Adult Step-Down Units, Less than 100 beds



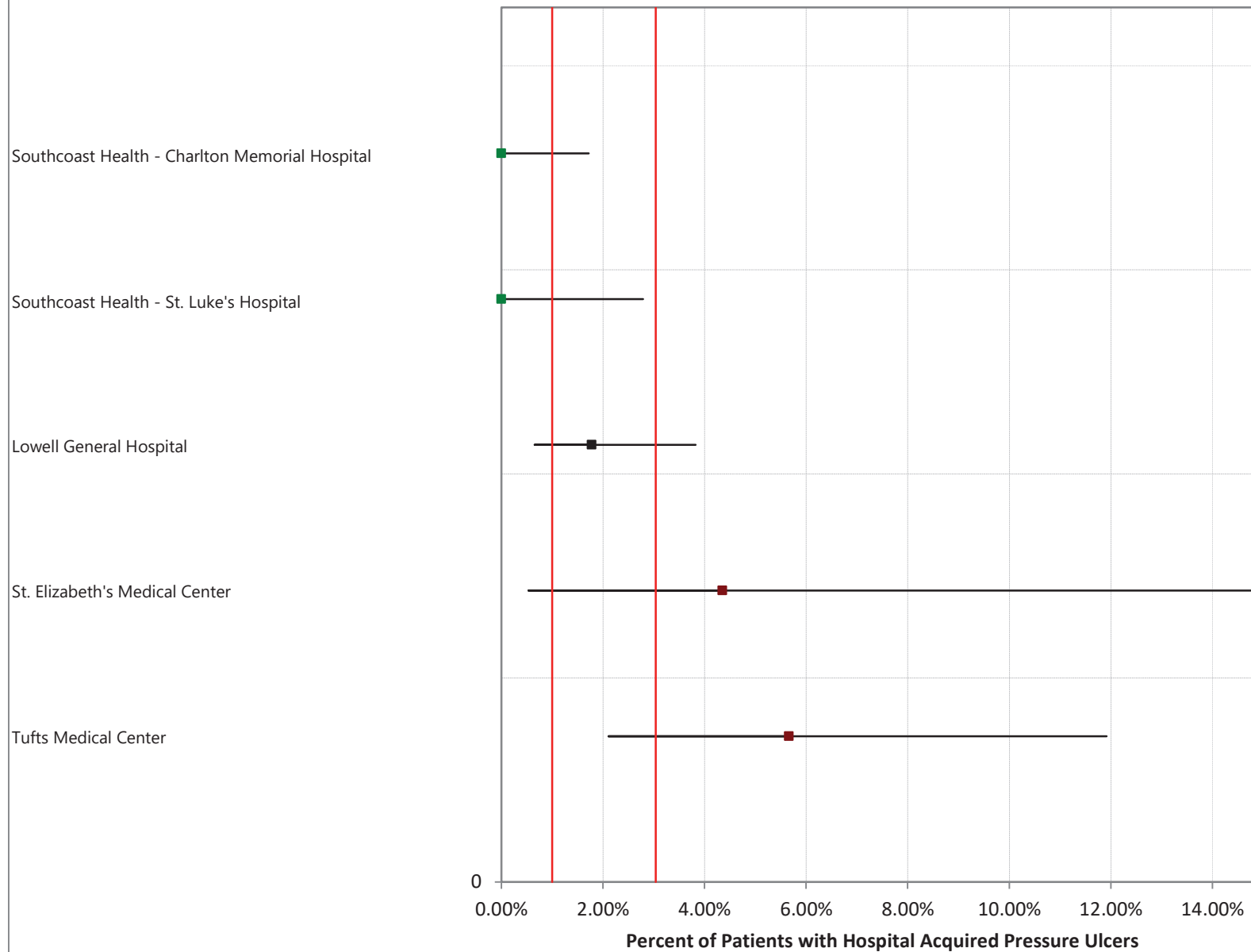
Adult Step-Down Units, 100-199 beds



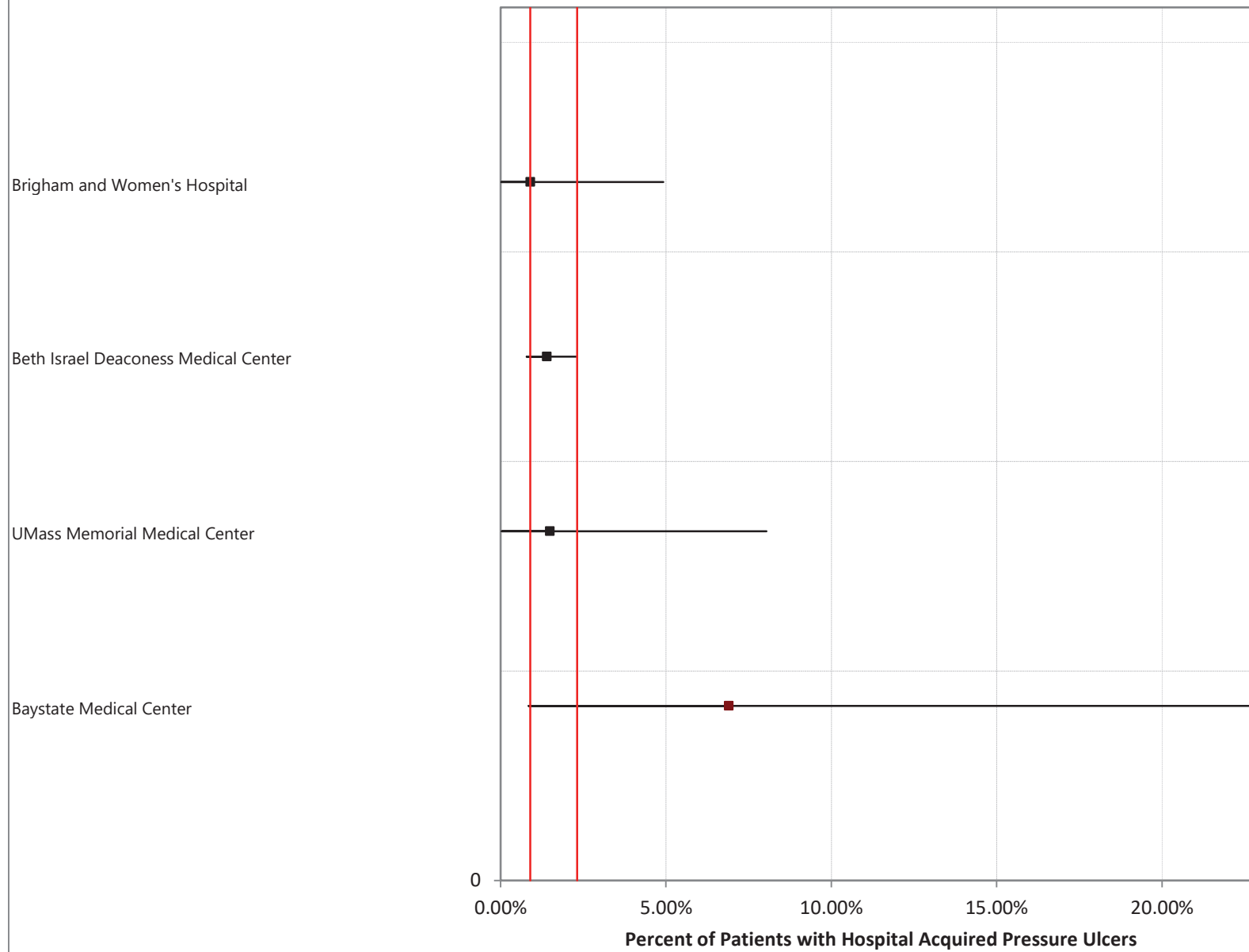
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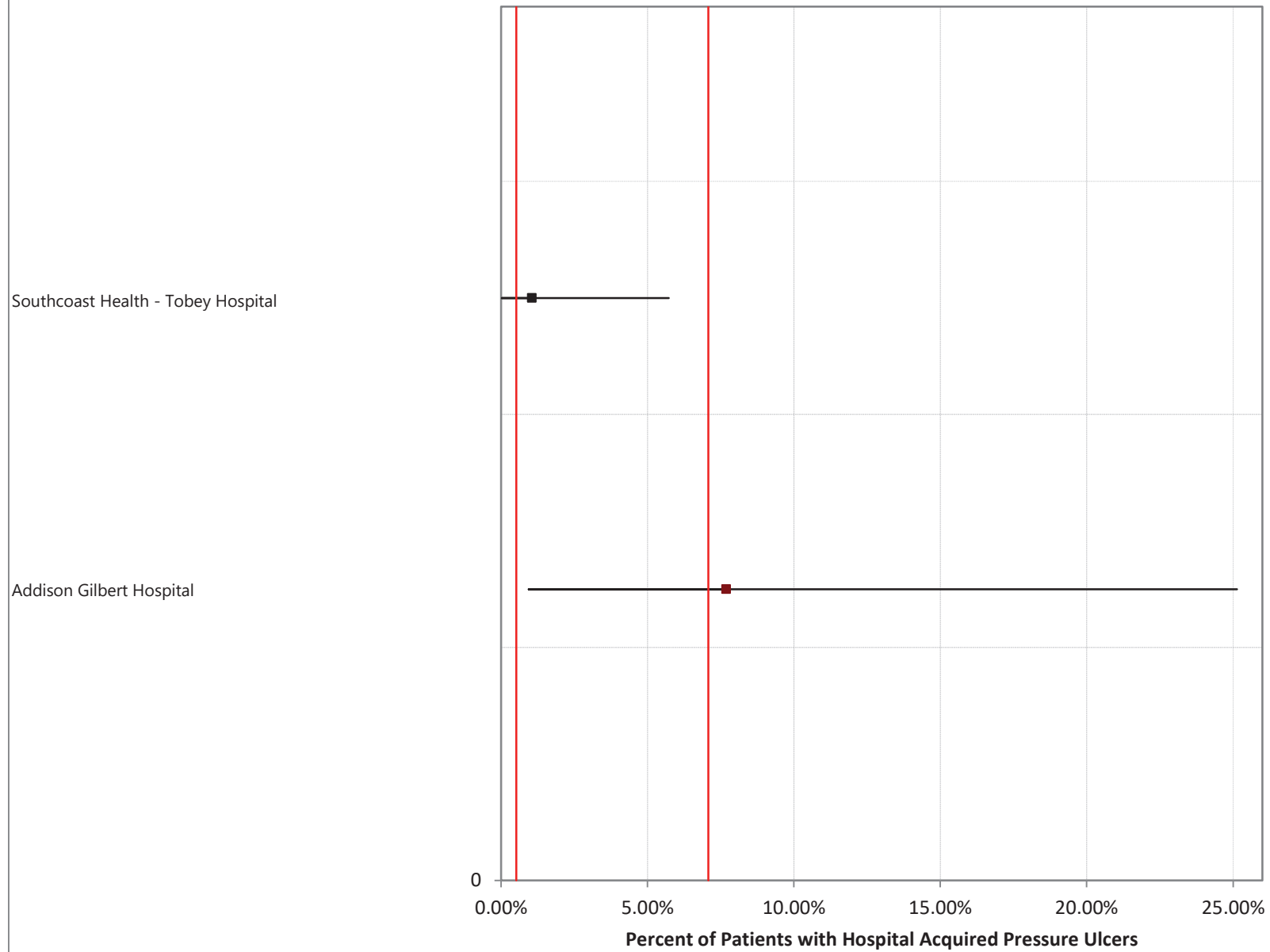
Adult Step-Down Units, 300-399 beds



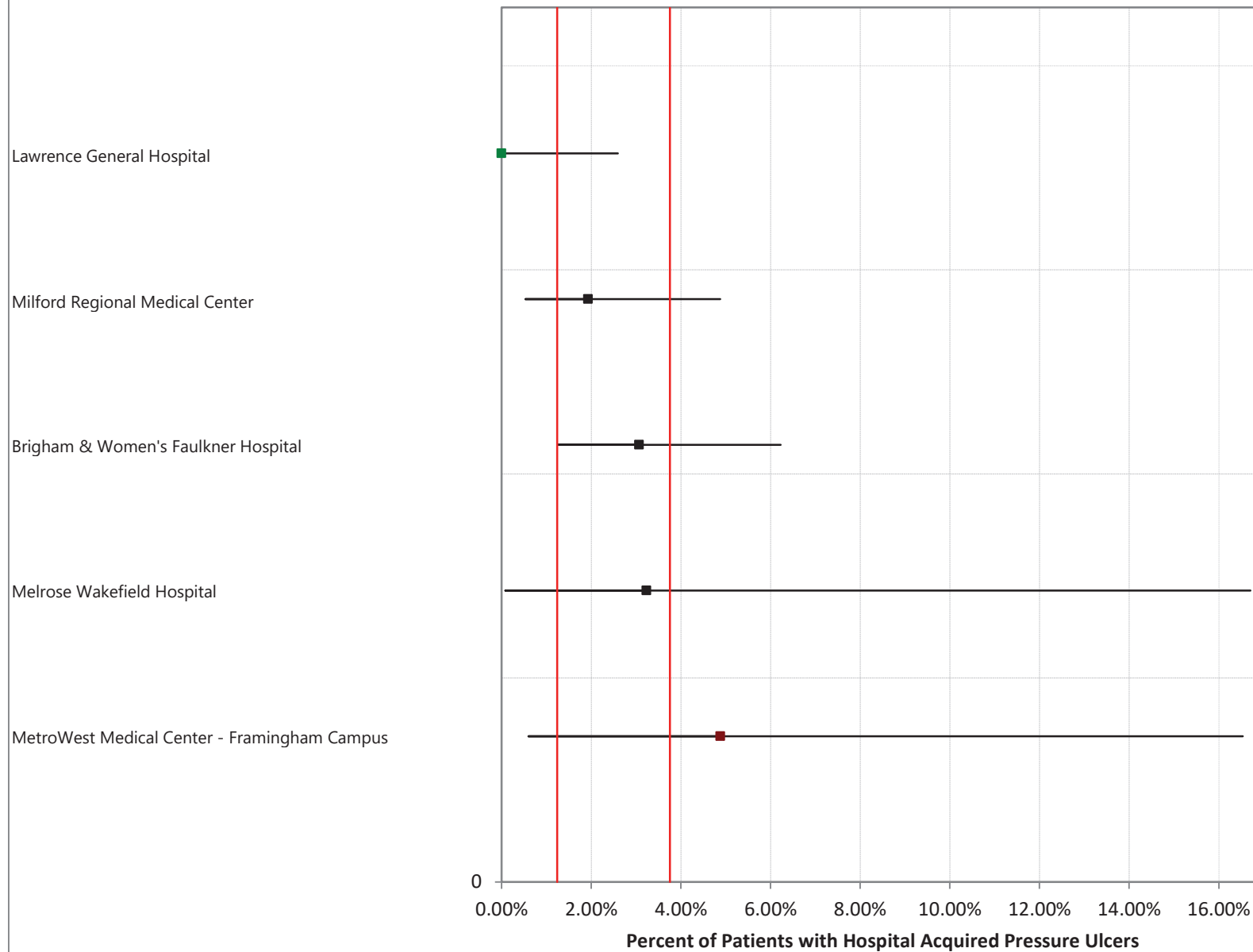
Adult Step-Down Units, More than 500 beds



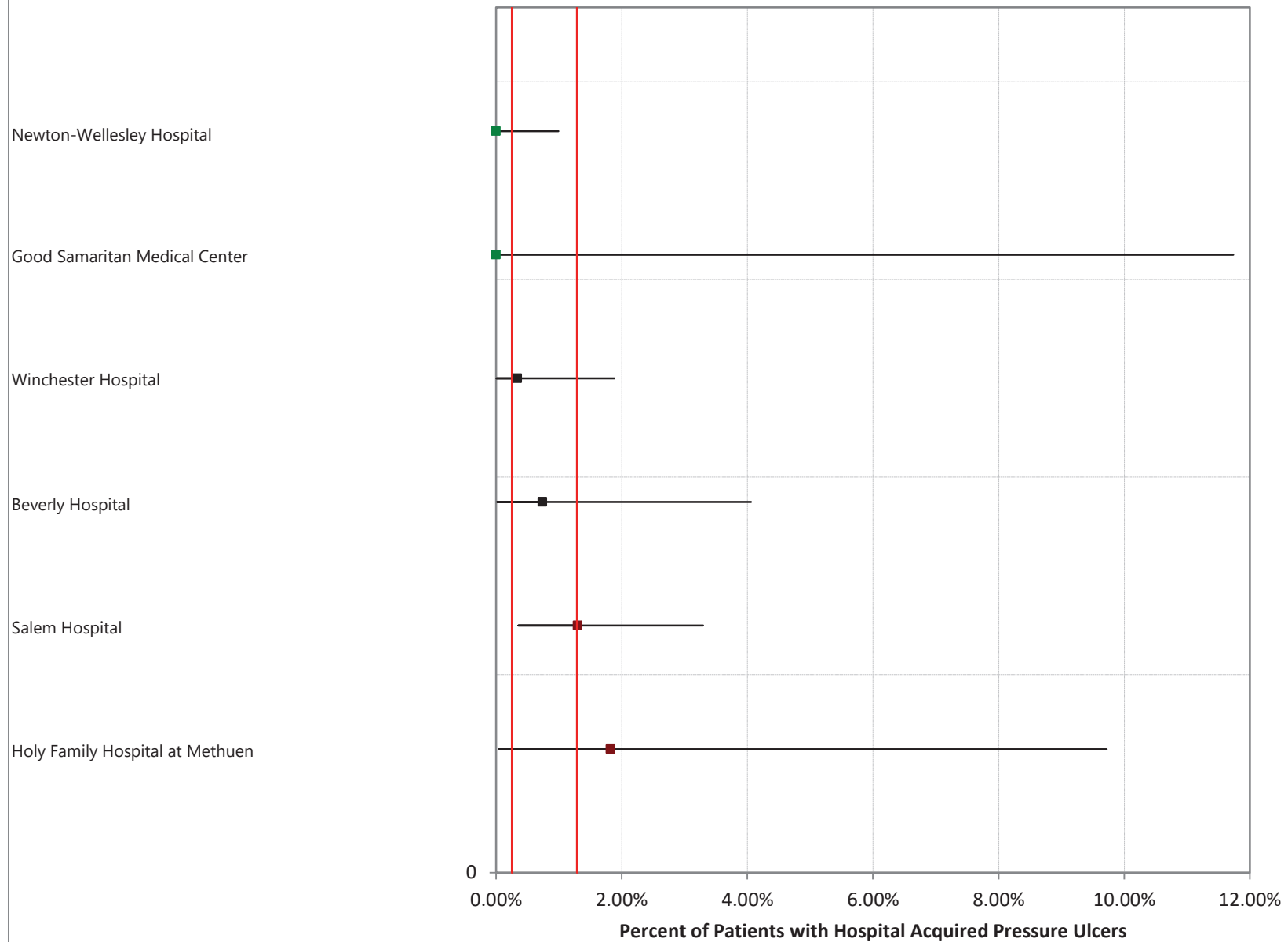
Adult Medical Units, Less than 100 beds



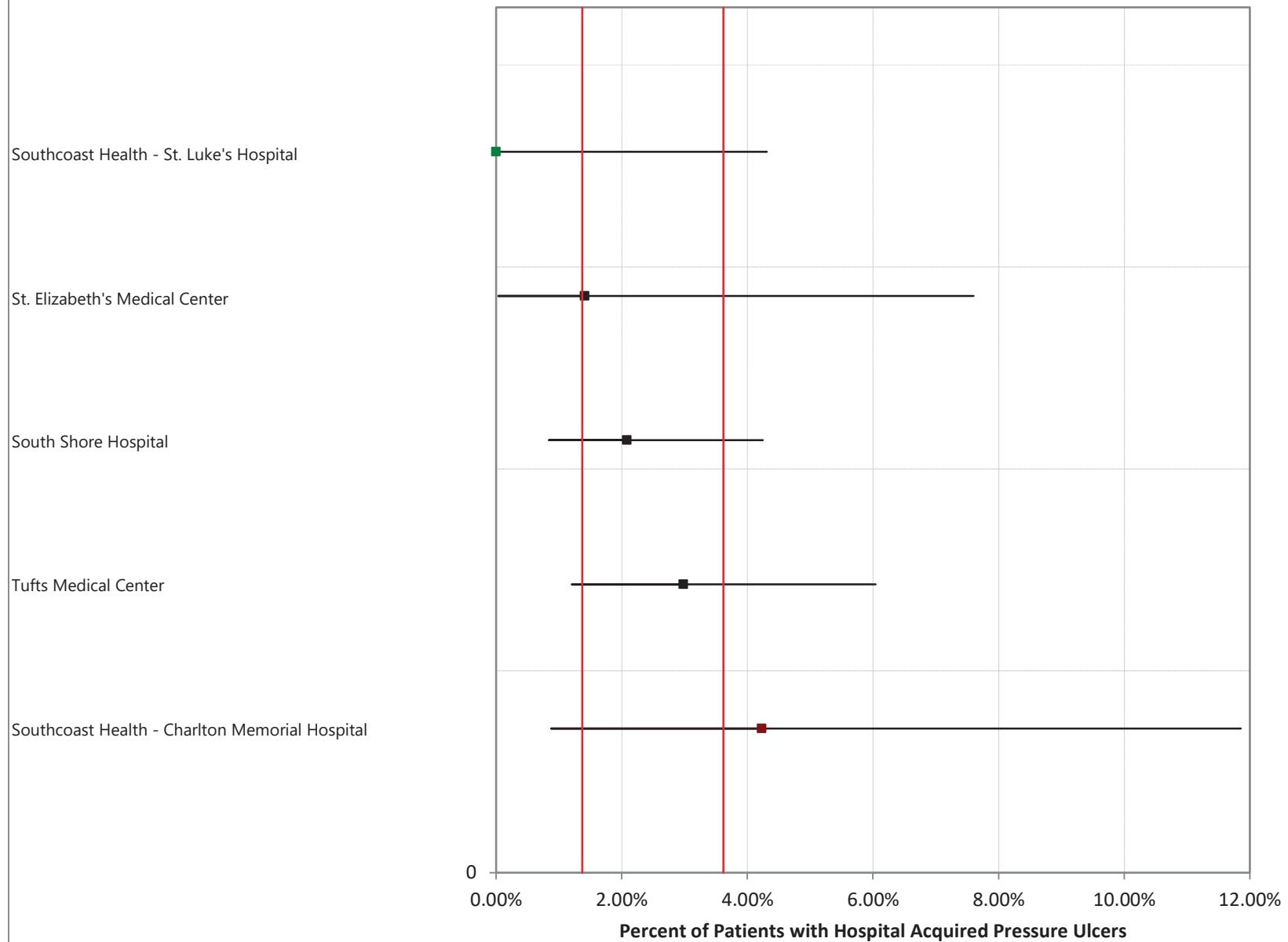
Adult Medical Units, 100-199 beds



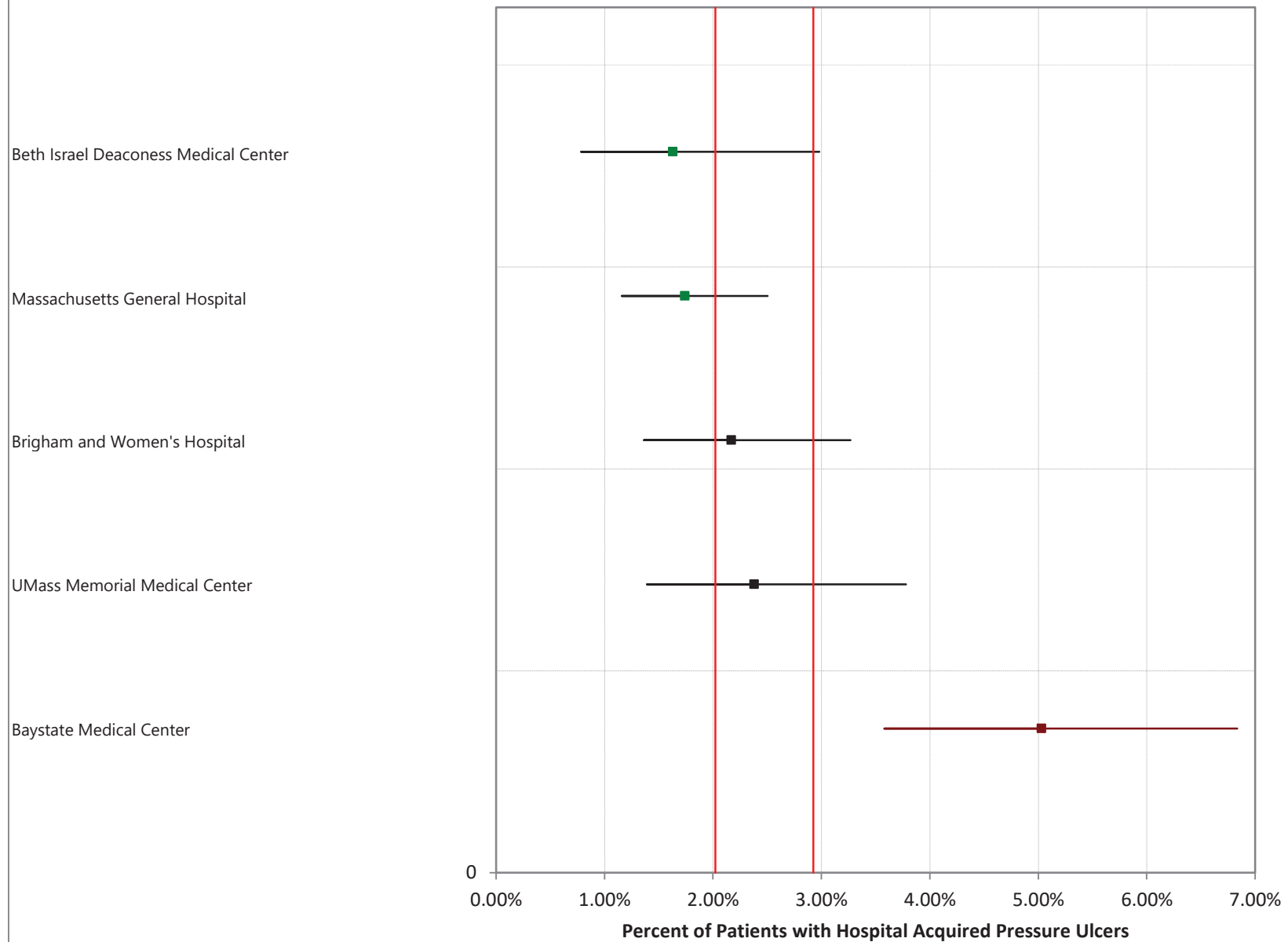
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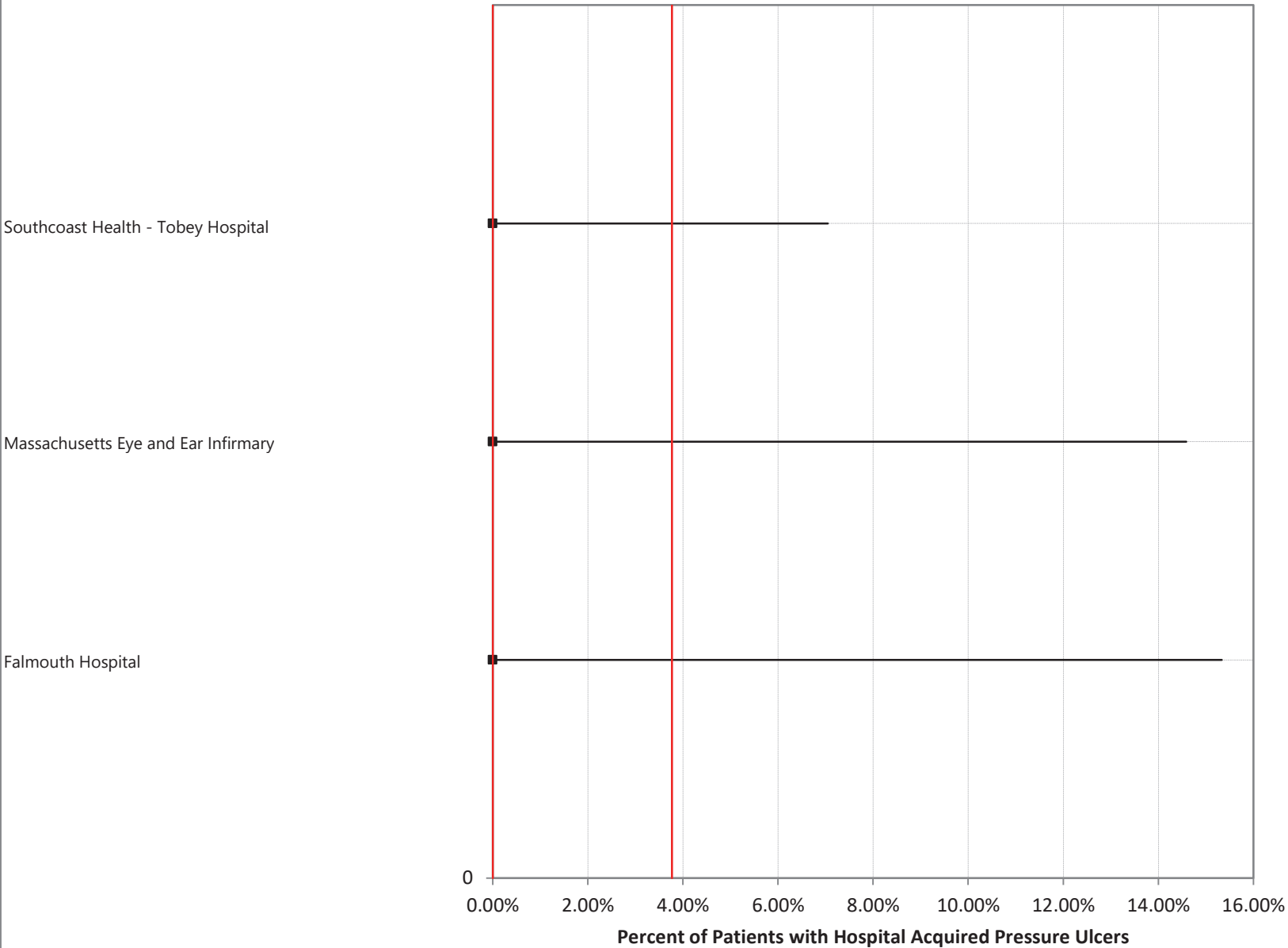
Adult Medical Units, 300-399 beds



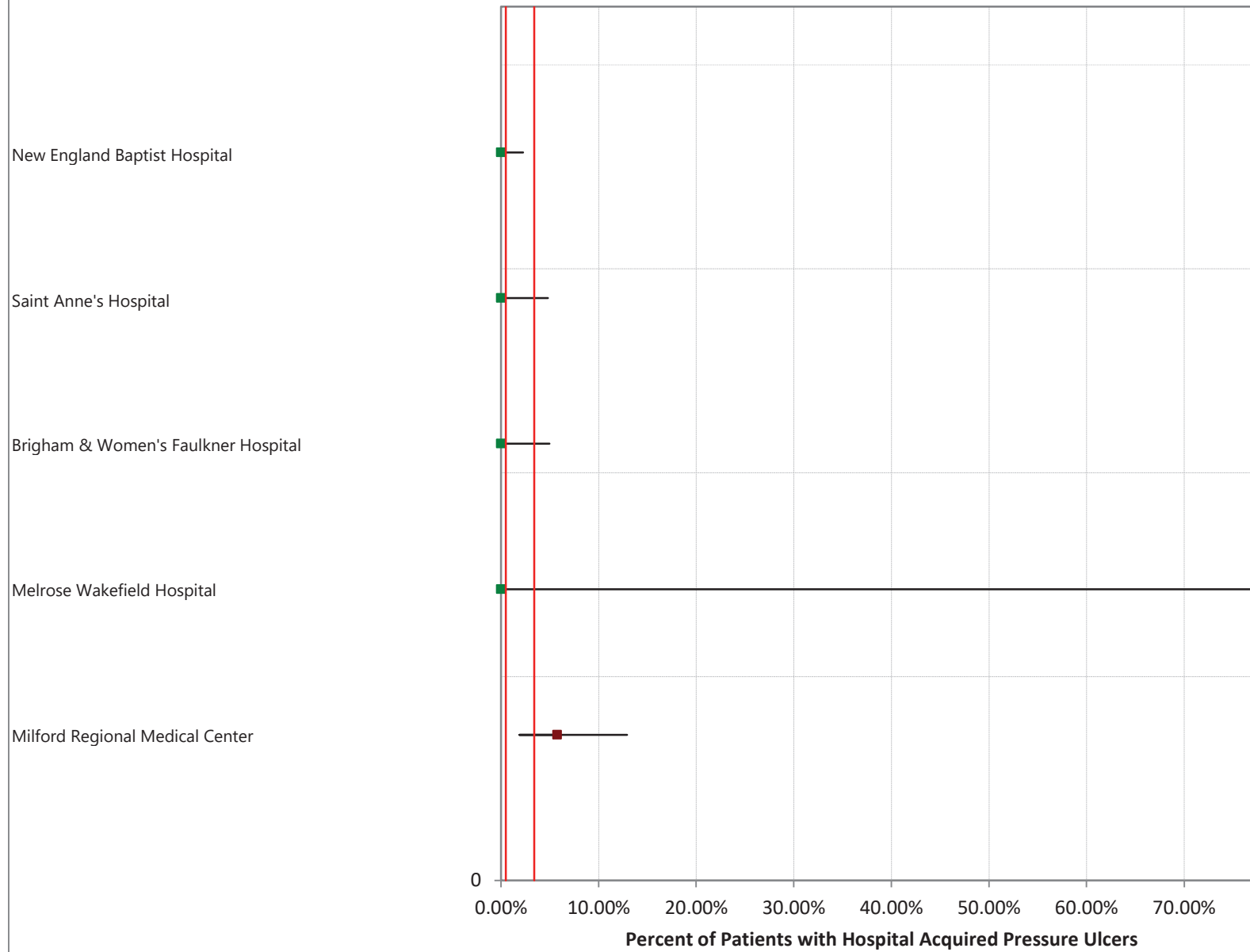
Adult Medical Units, More than 500 beds



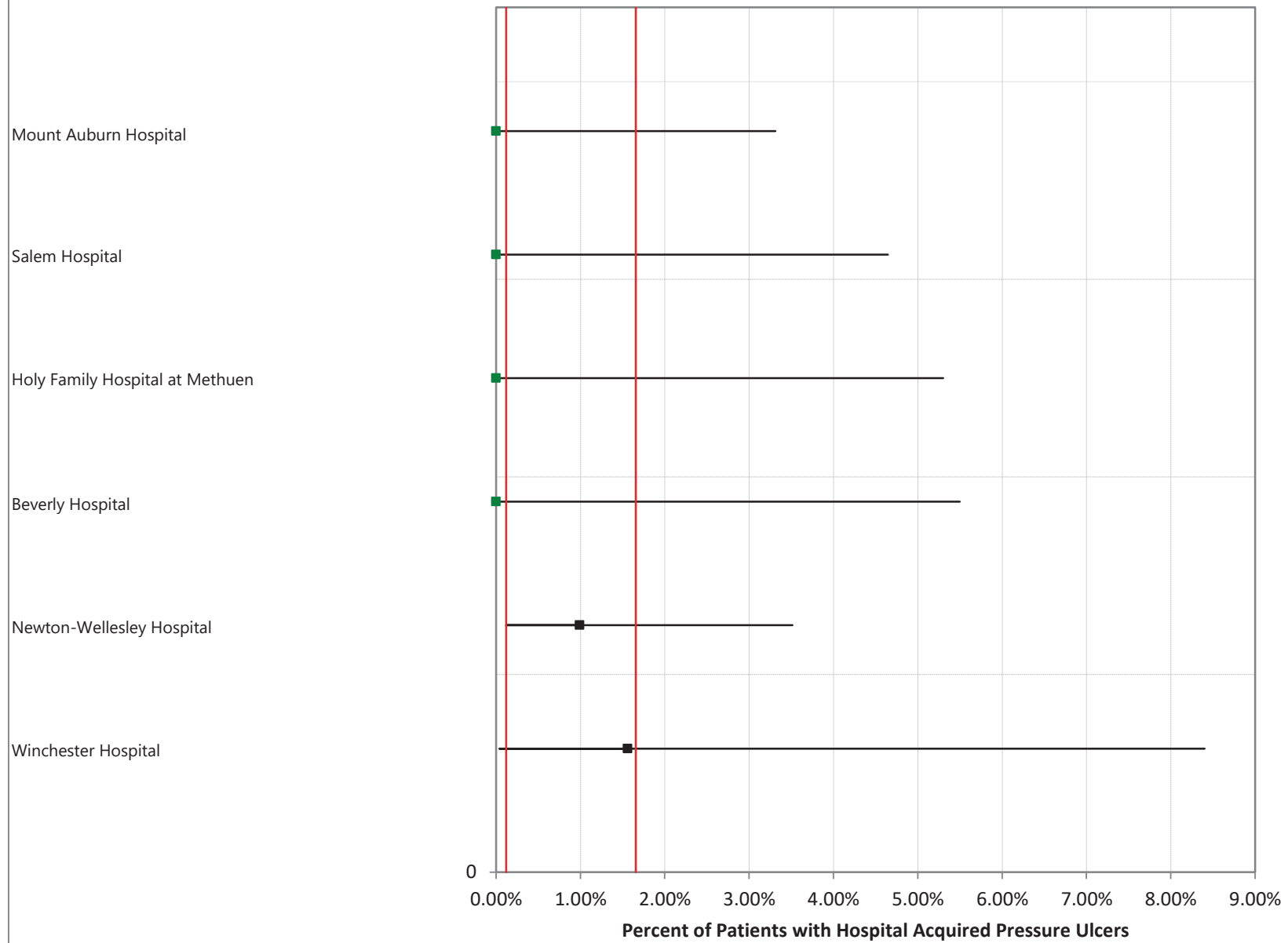
Adult Surgical Units, Less than 100 beds



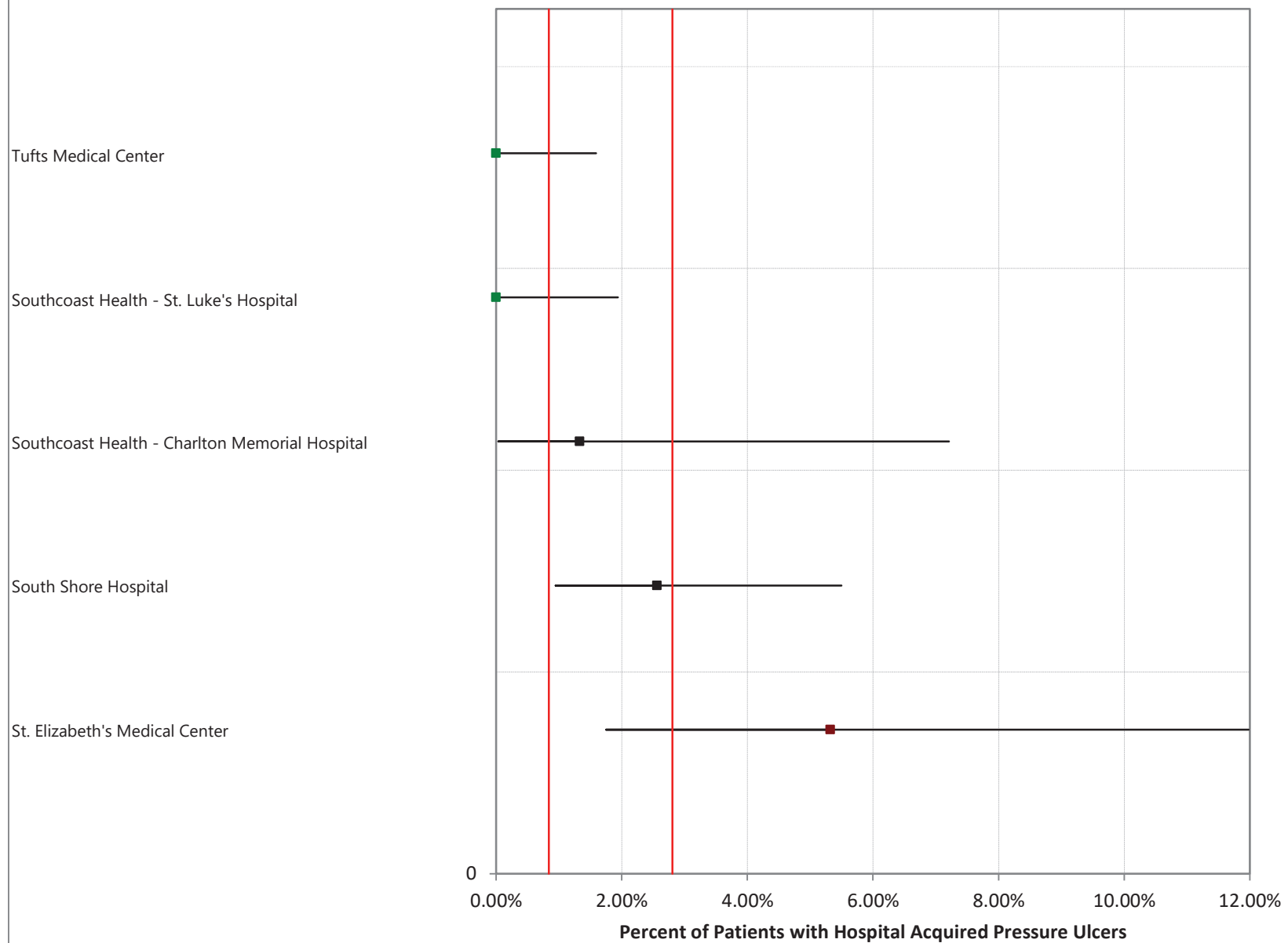
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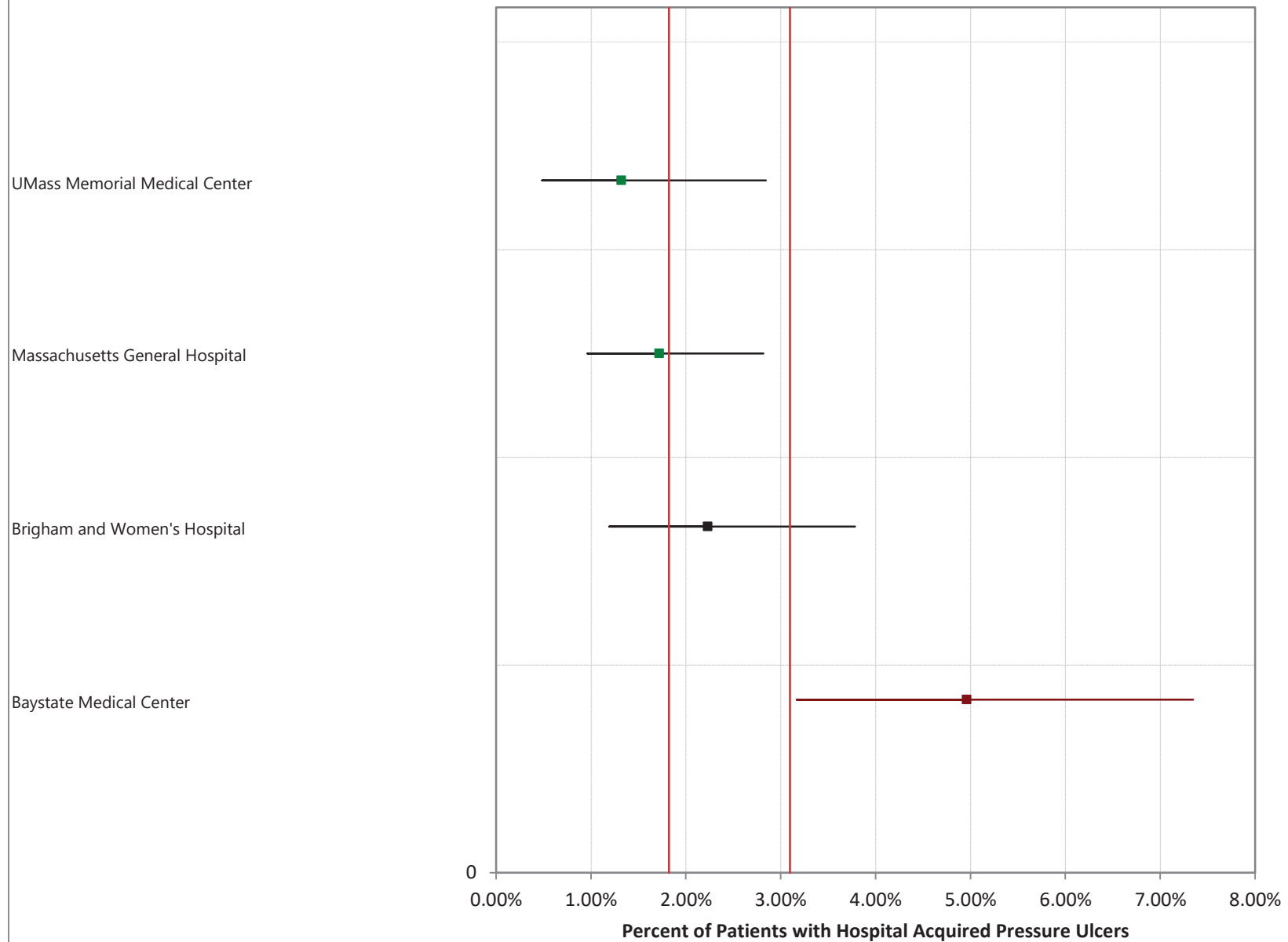
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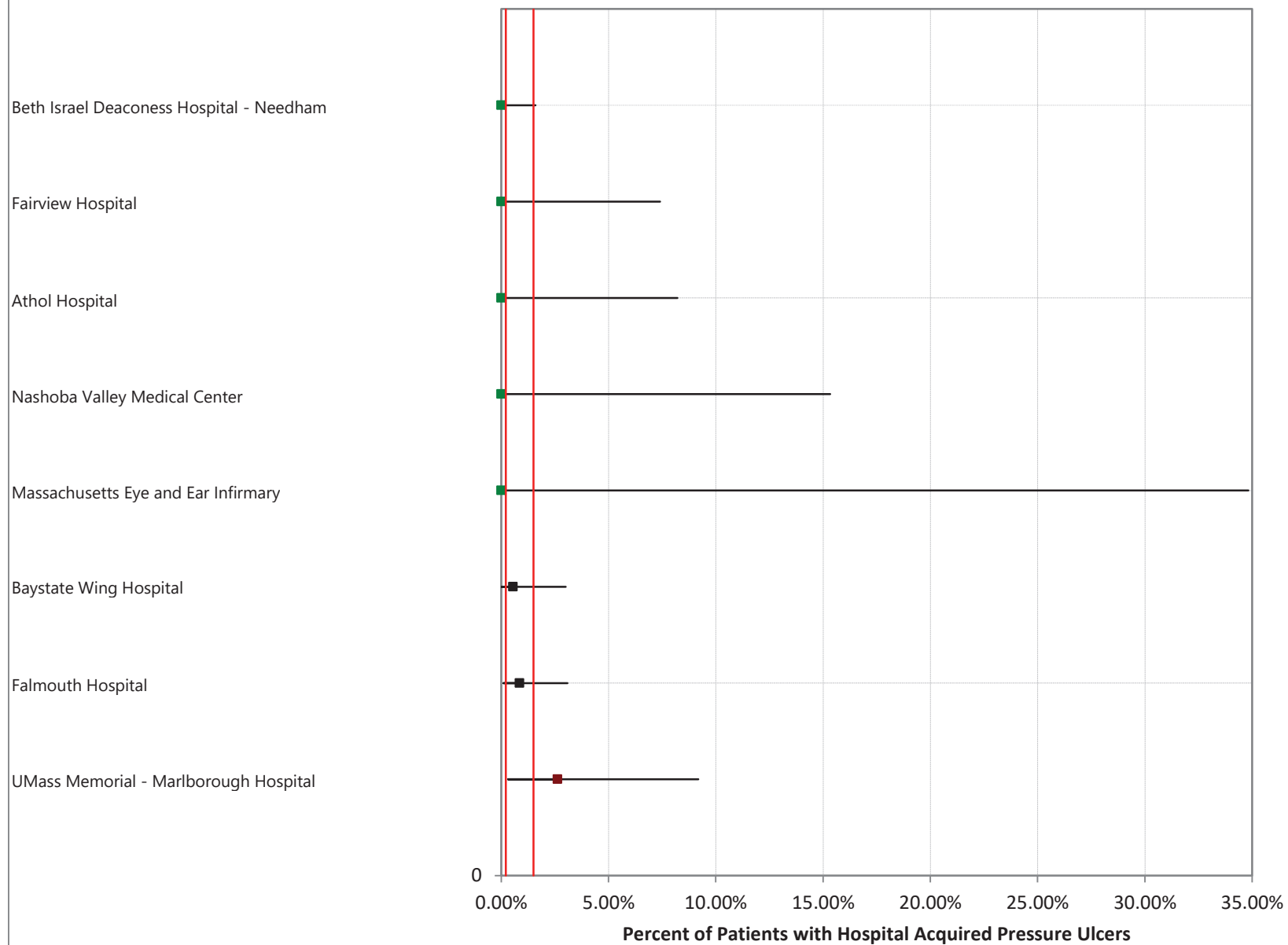
Adult Surgical Units, 300-399 beds



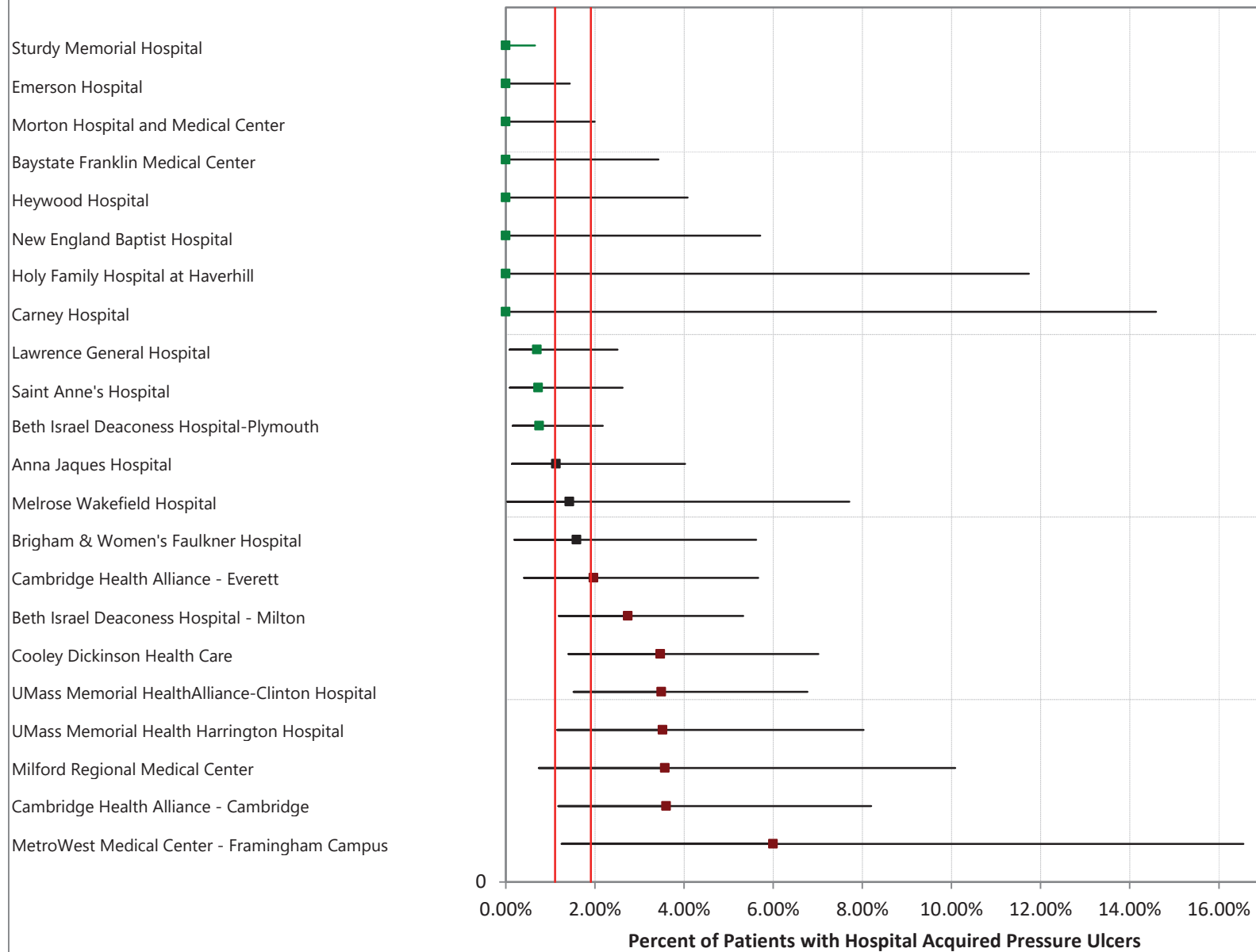
Adult Surgical Units, More than 500 beds



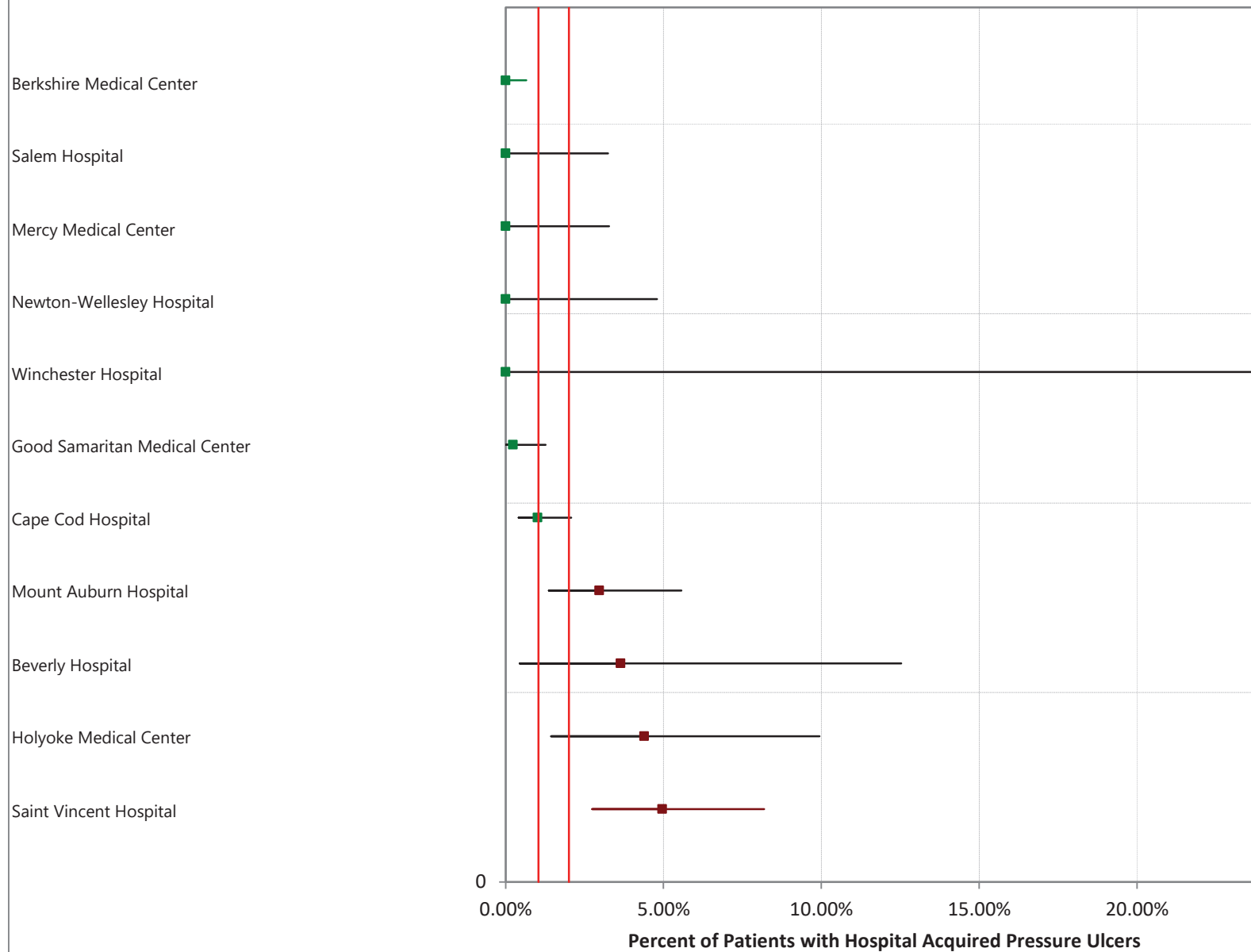
Adult Medical-Surgical Units, Less than 100 beds



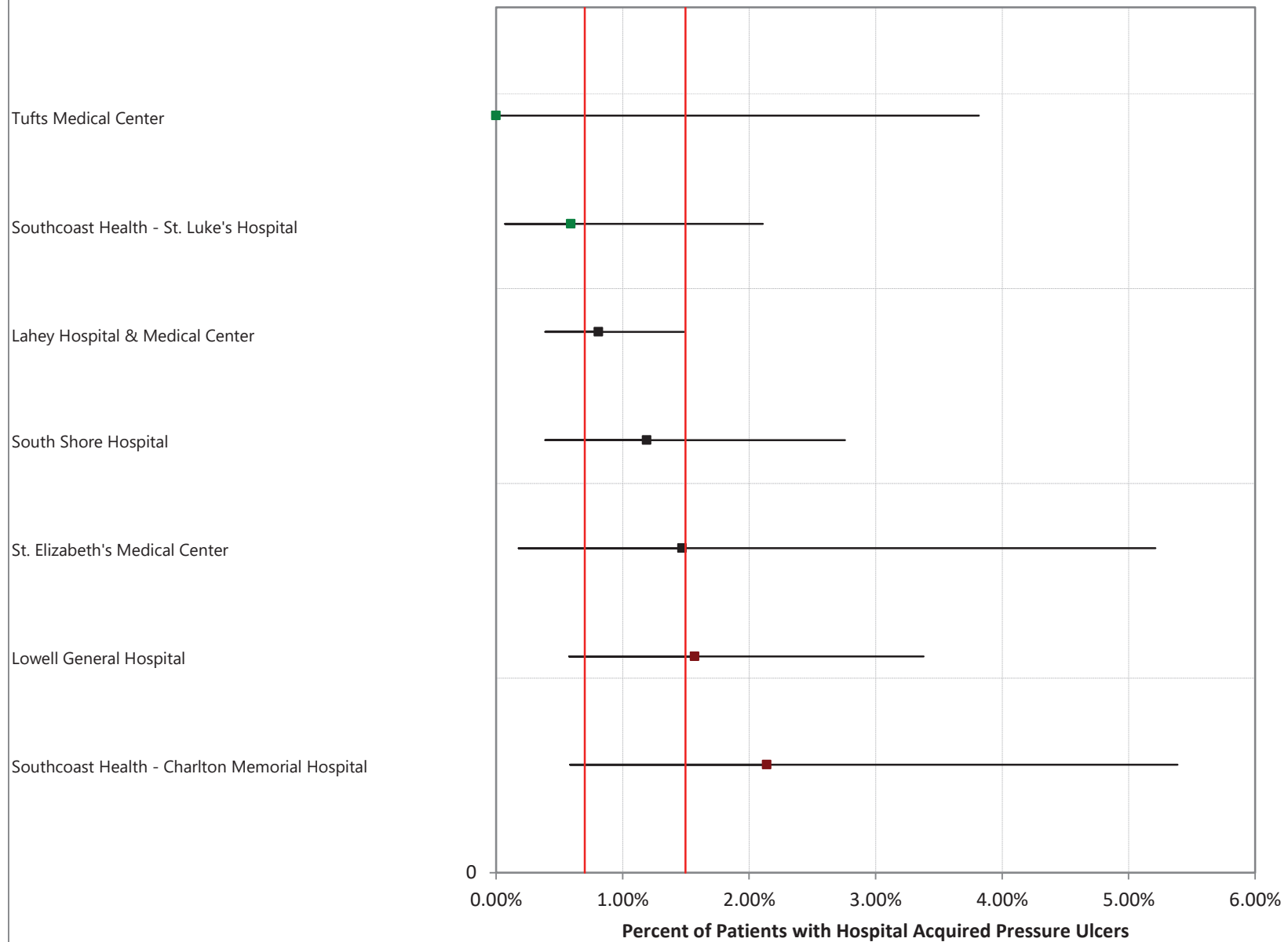
Adult Medical-Surgical Units, 100-199 beds



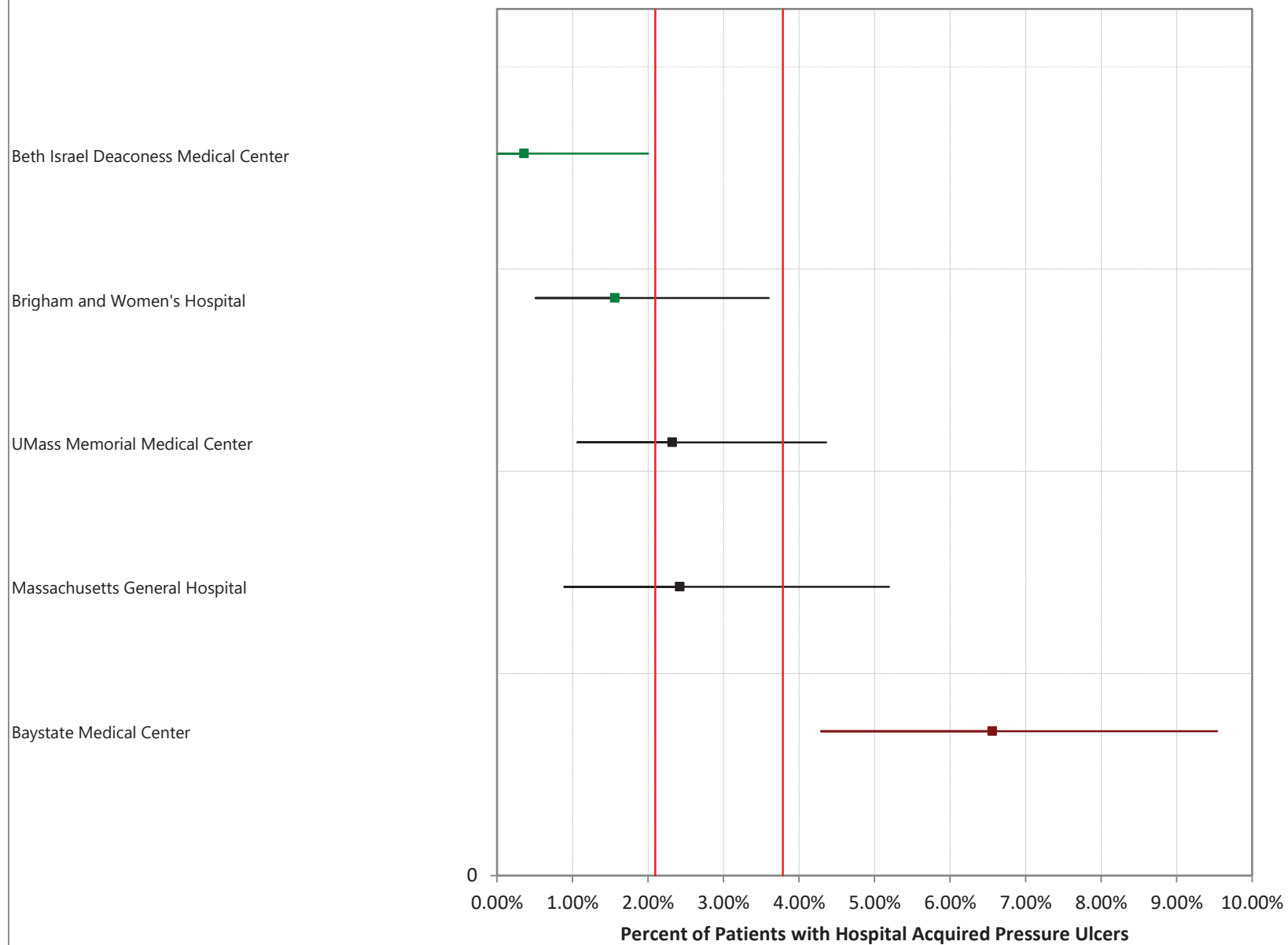
Adult Medical-Surgical Units, 200-299 beds



Adult Medical-Surgical Units, 300-399 beds



Adult Medical-Surgical Units, More than 500 beds



NSC-3 Patient Falls

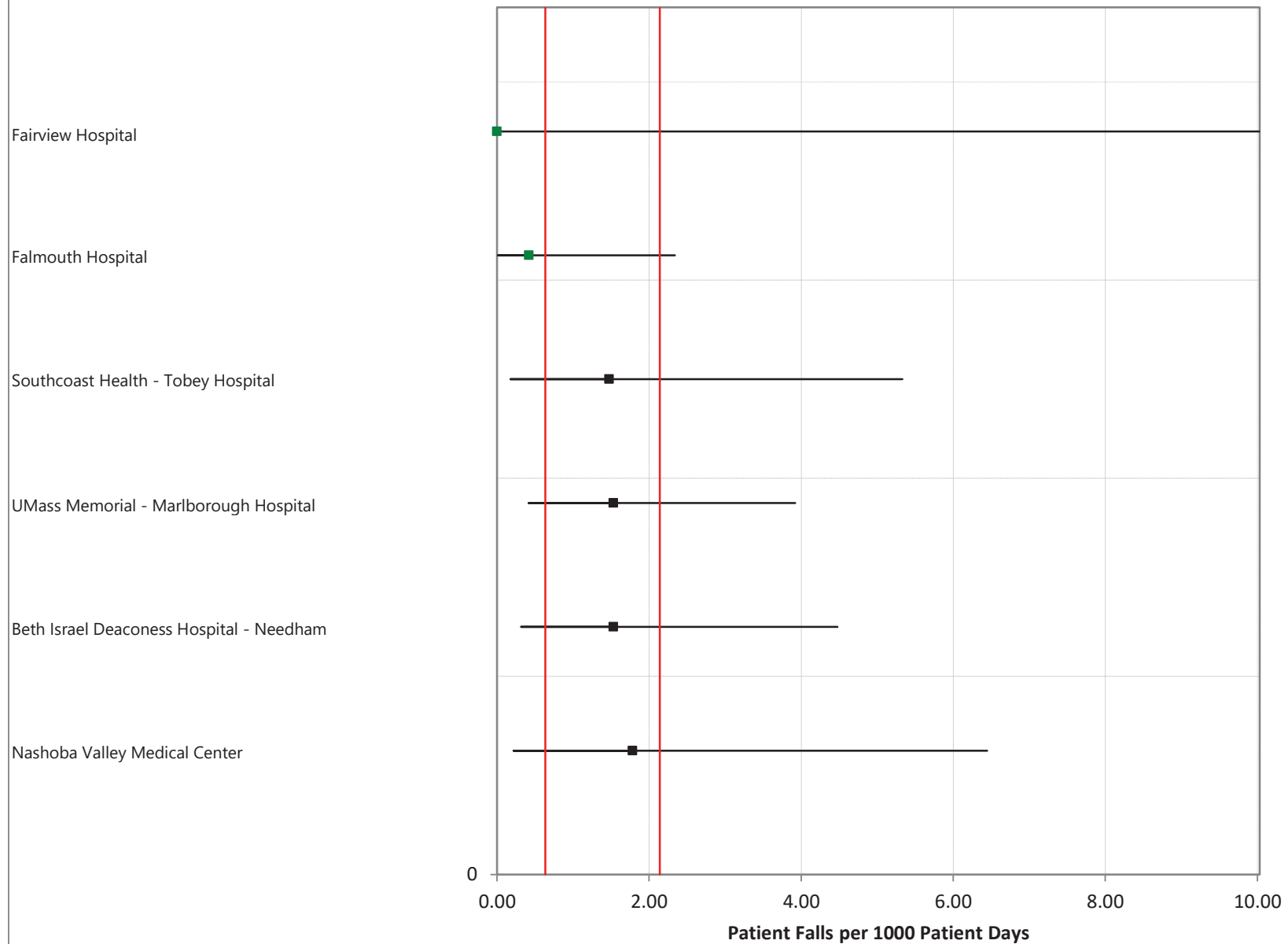
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January – March 2023

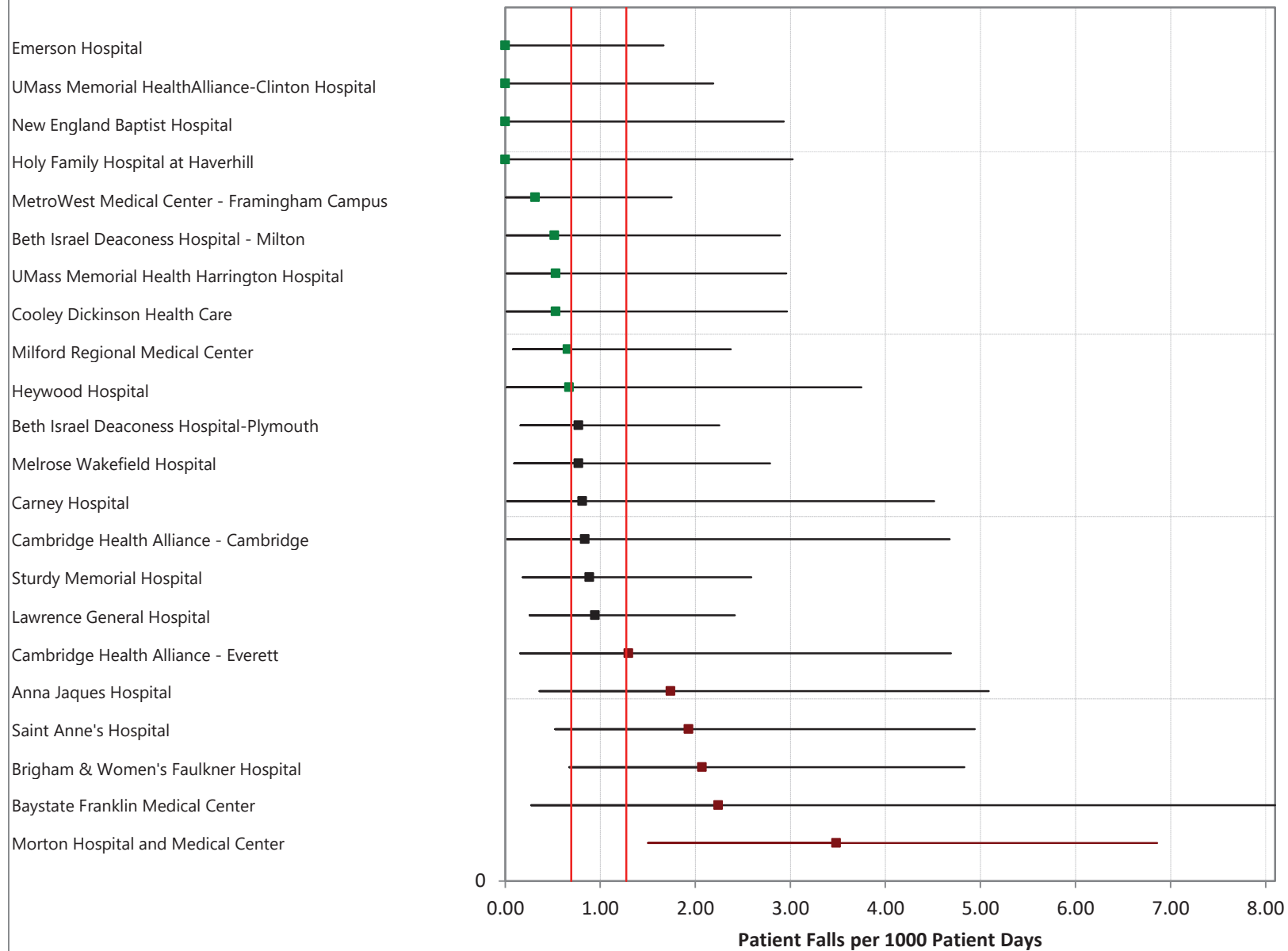
April – June 2023

July – September 2023

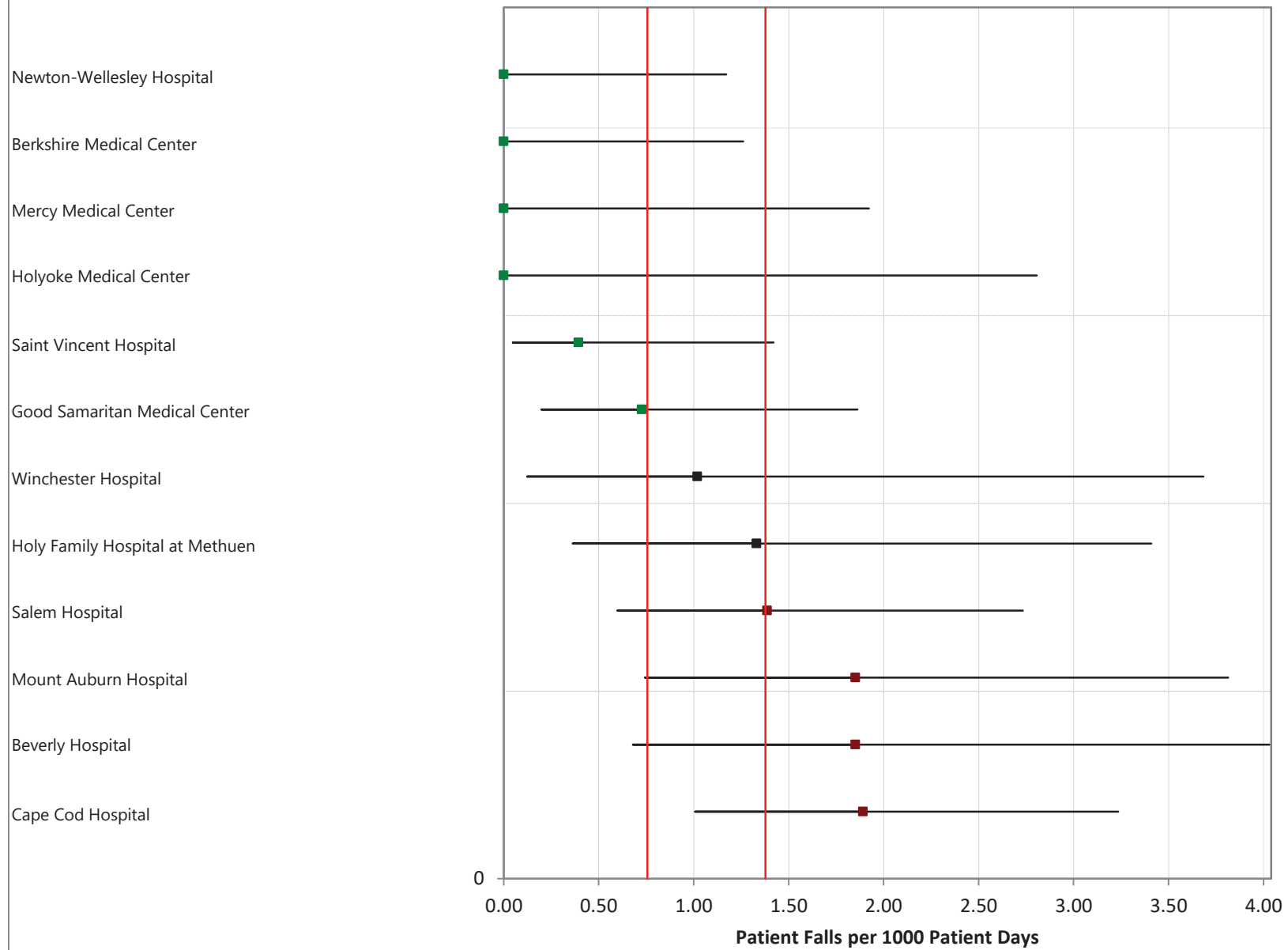
Adult Critical Care Units, Less than 100 beds



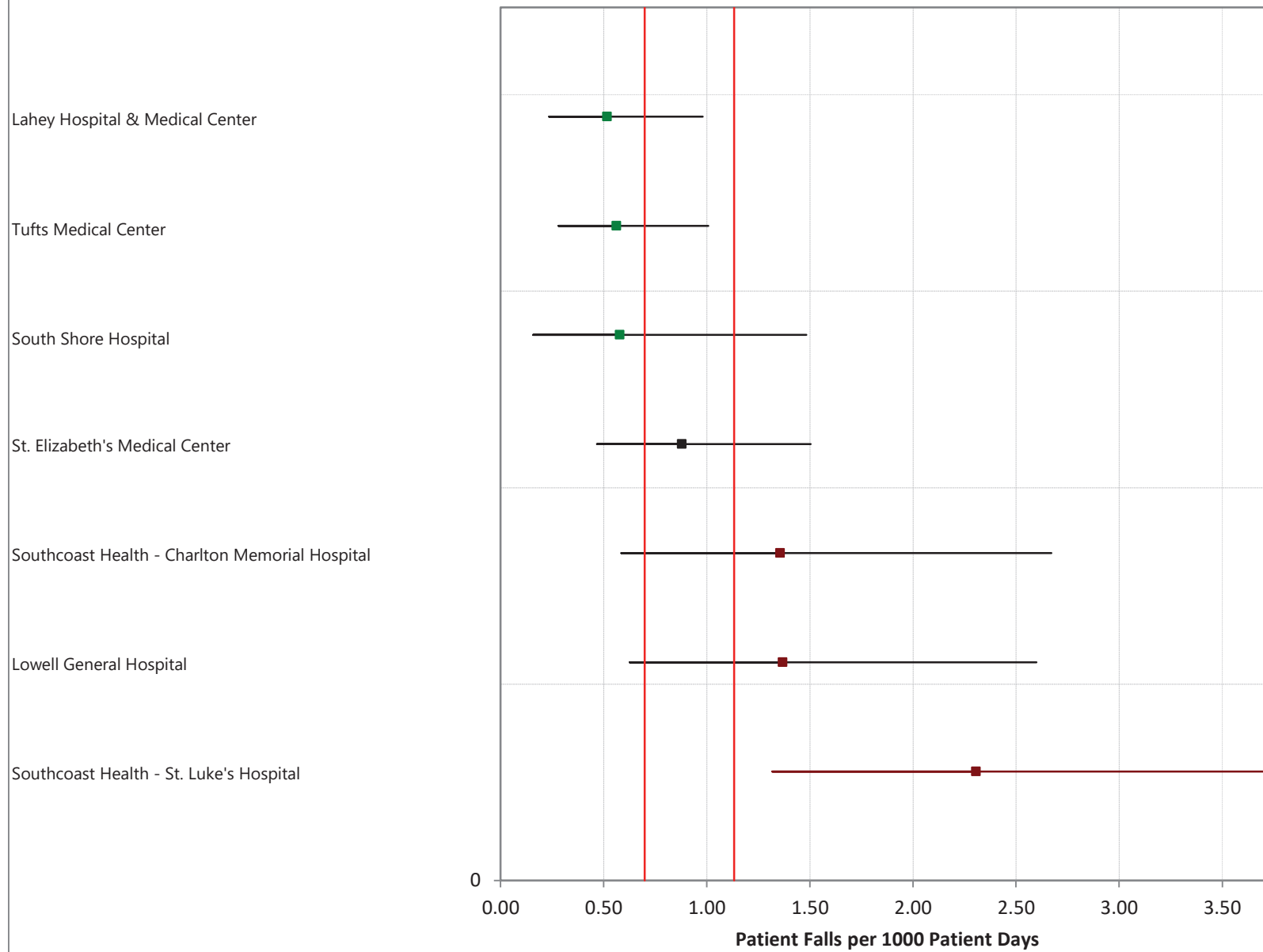
Adult Critical Care Units, 100-199 beds



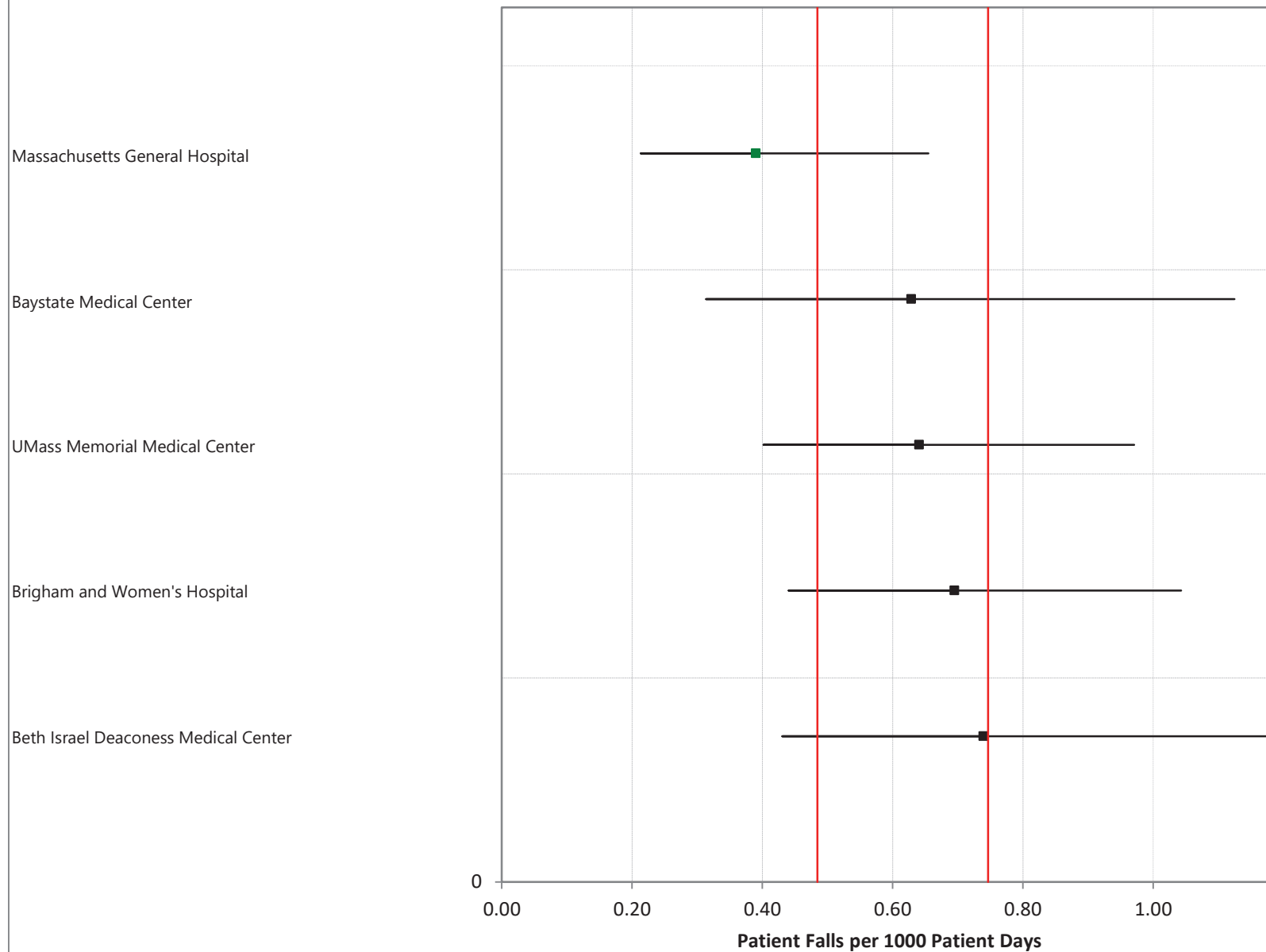
Adult Critical Care Units, 200-299 beds



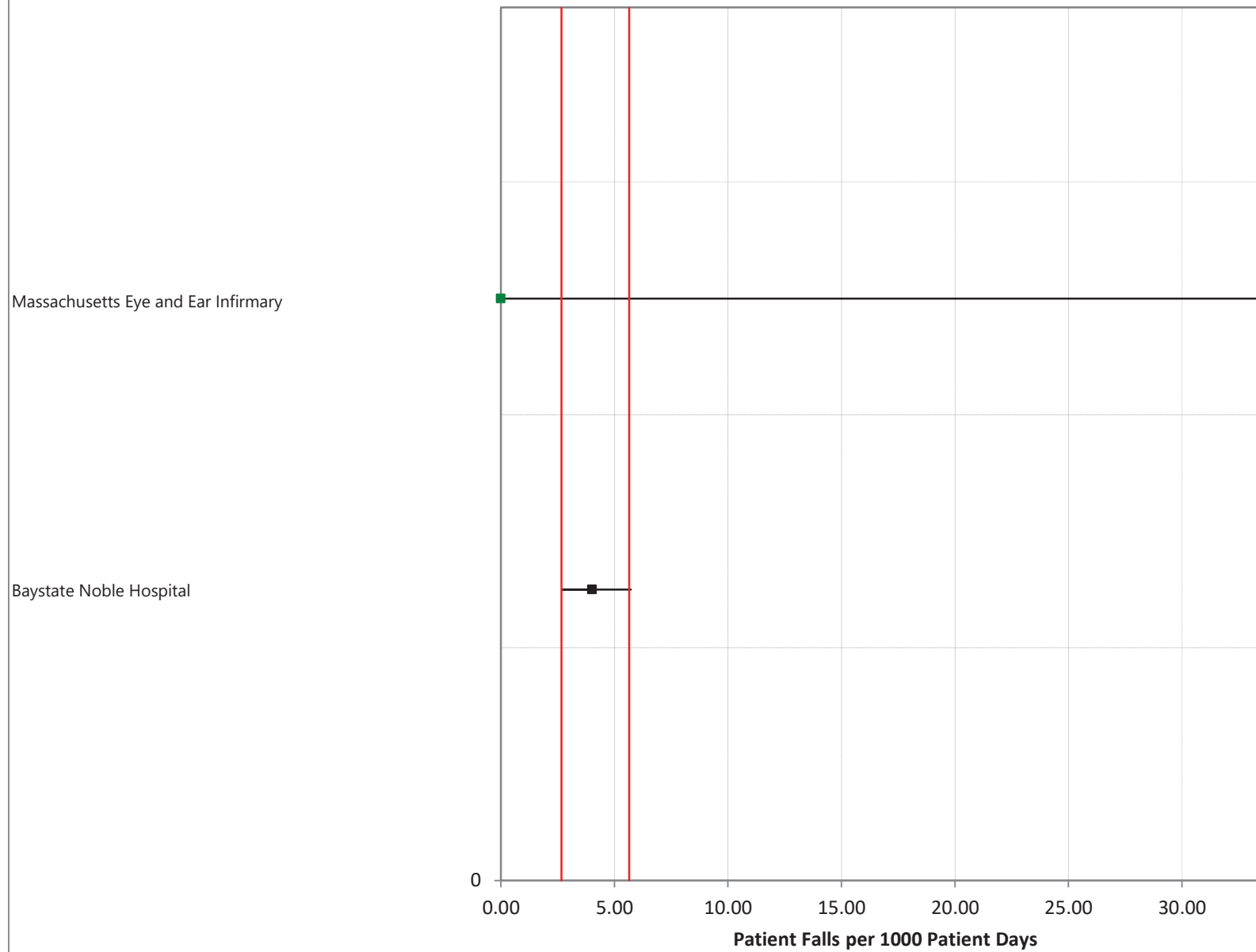
Adult Critical Care Units, 300-399 beds



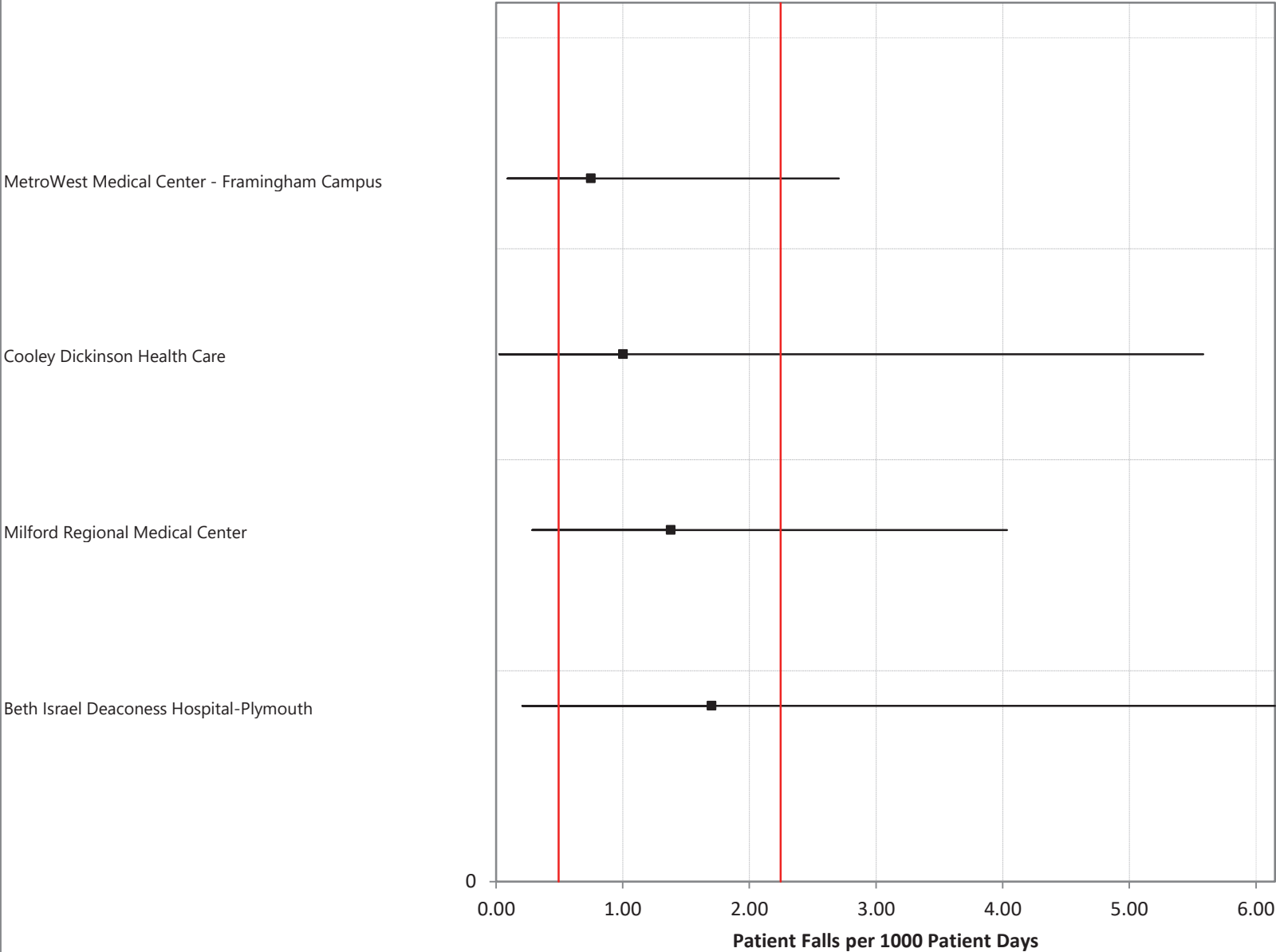
Adult Critical Care Units, More than 500 beds



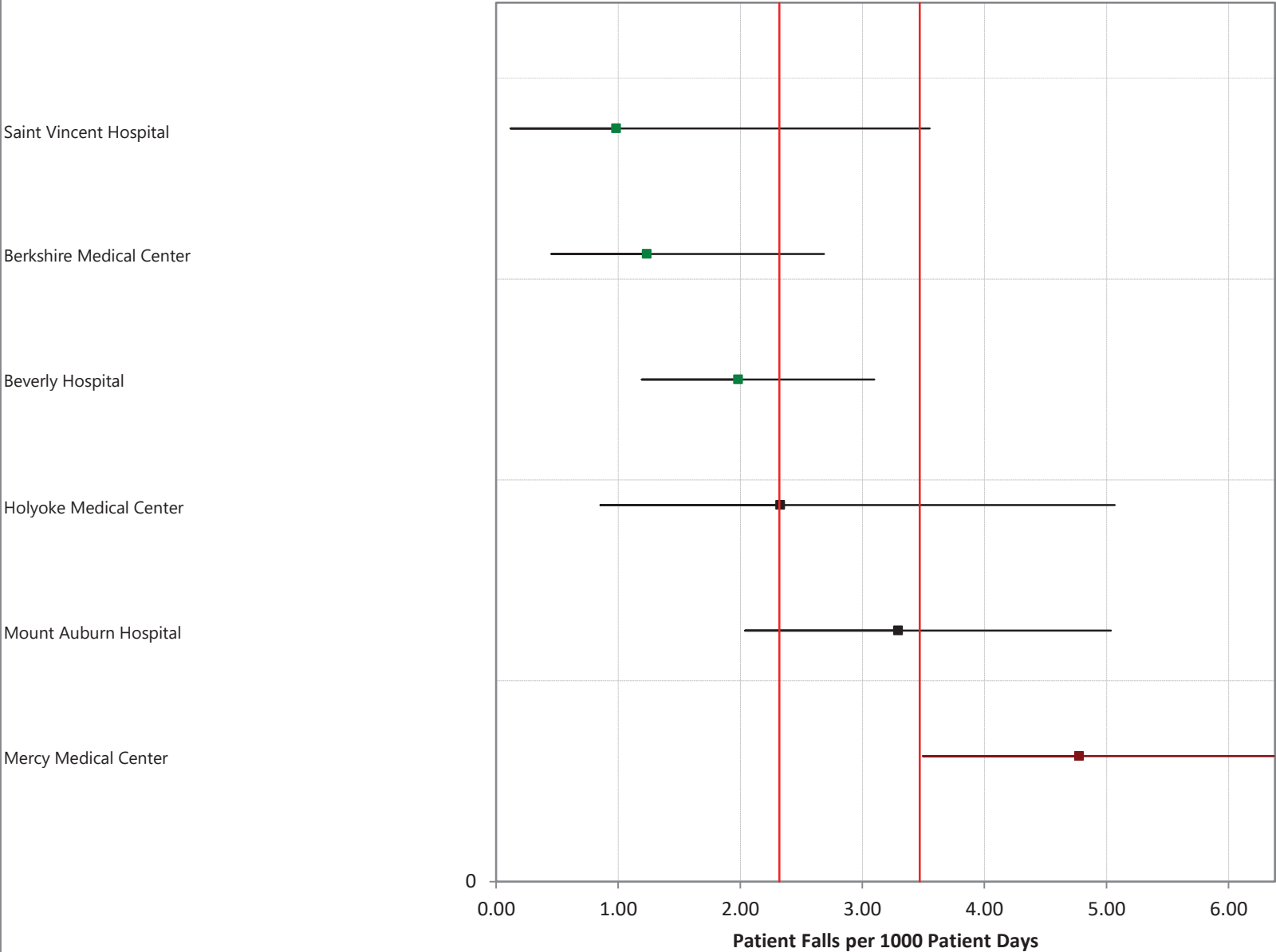
Adult Step-Down Units, Less than 100 beds



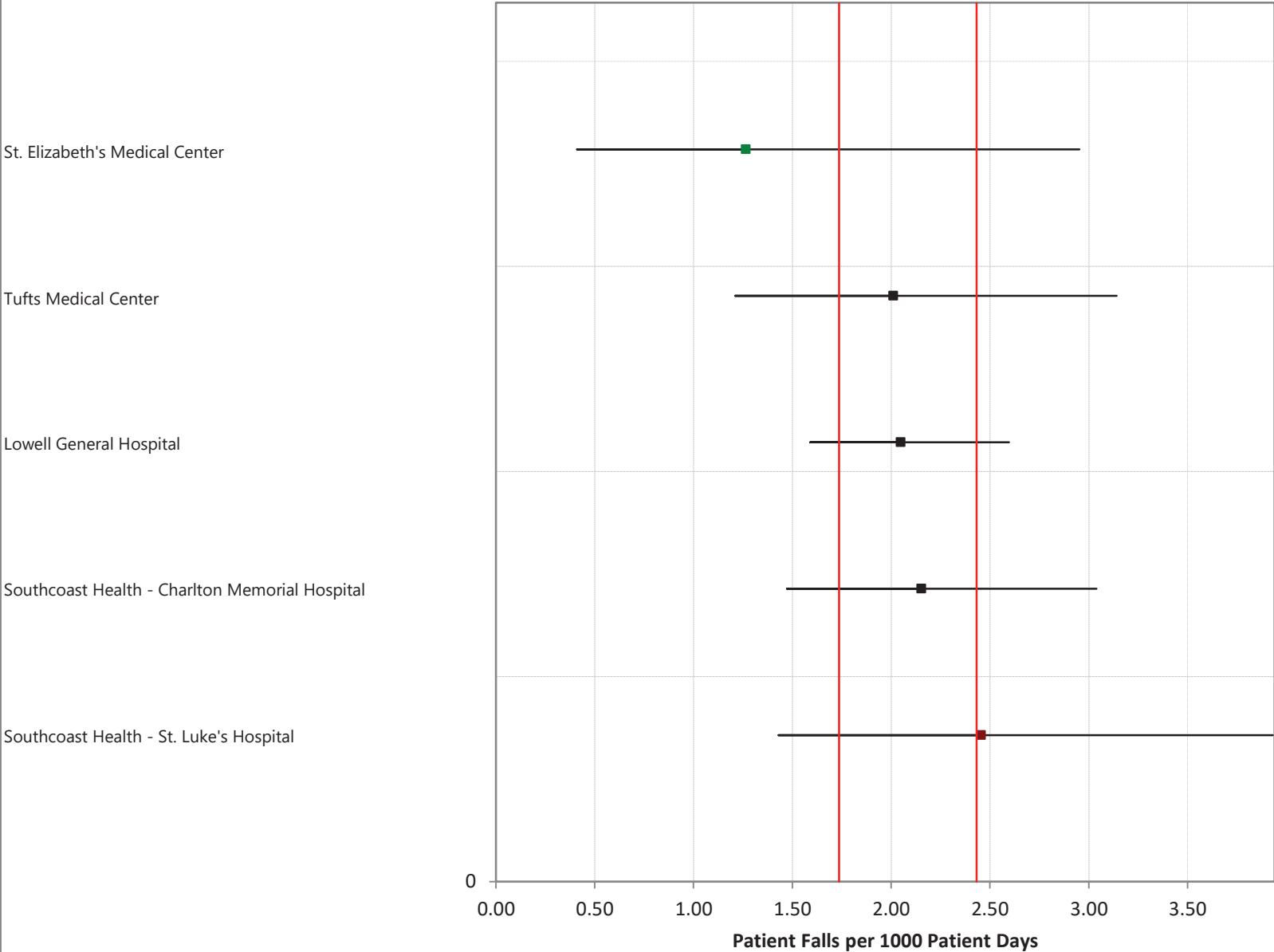
Adult Step-Down Units, 100-199 beds



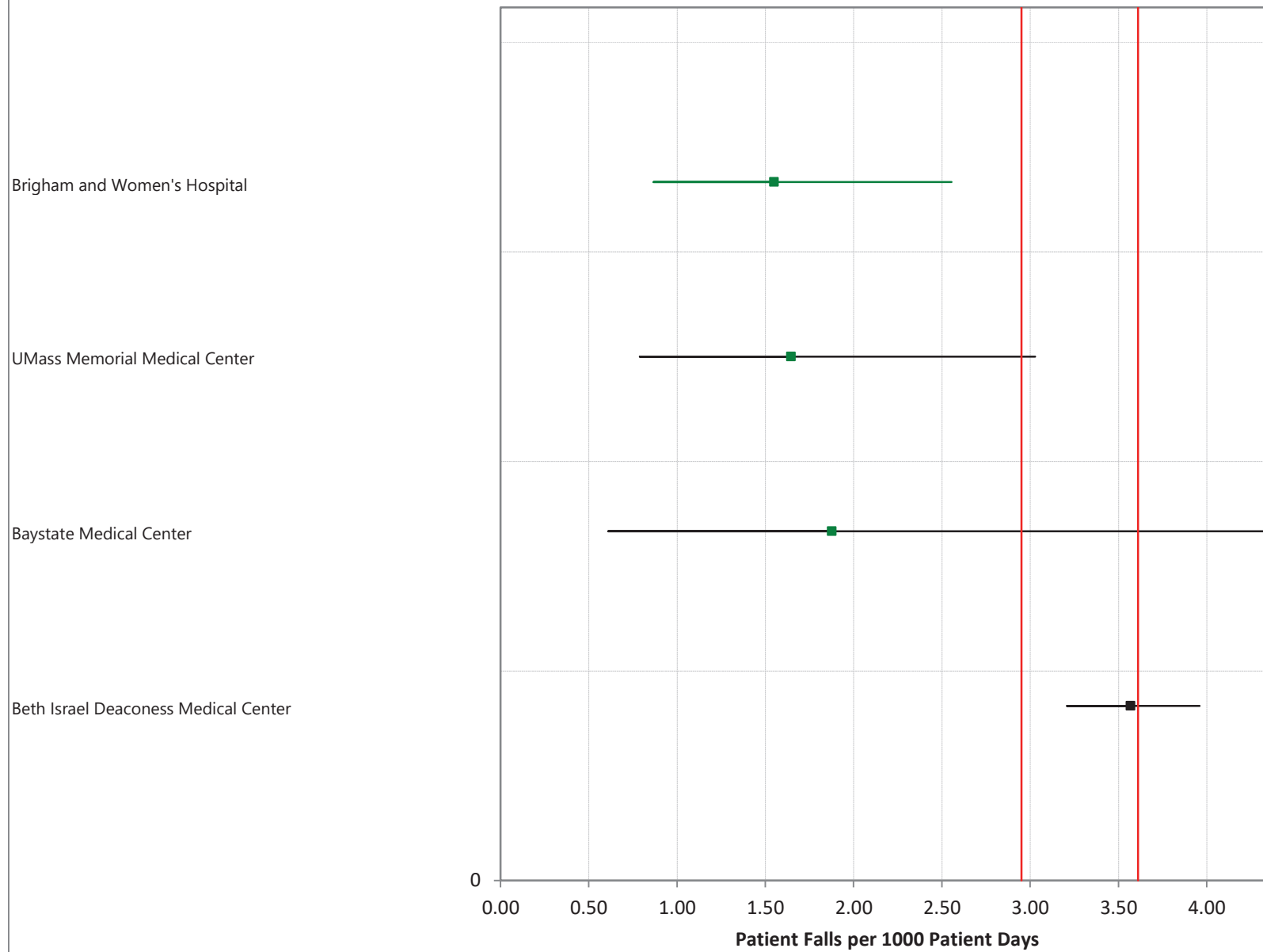
Adult Step-Down Units, 200-299 beds



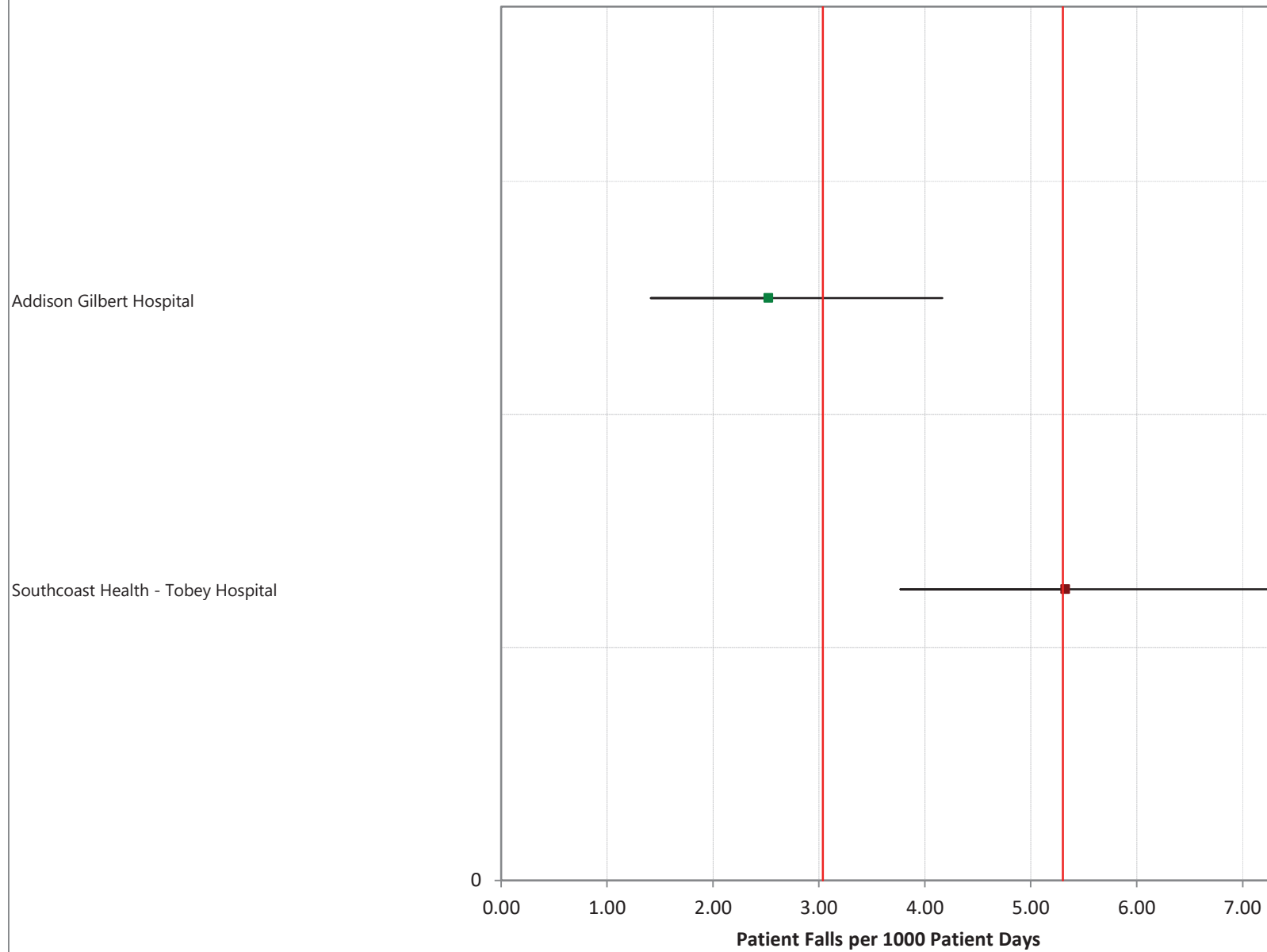
Adult Step-Down Units, 300-399 beds



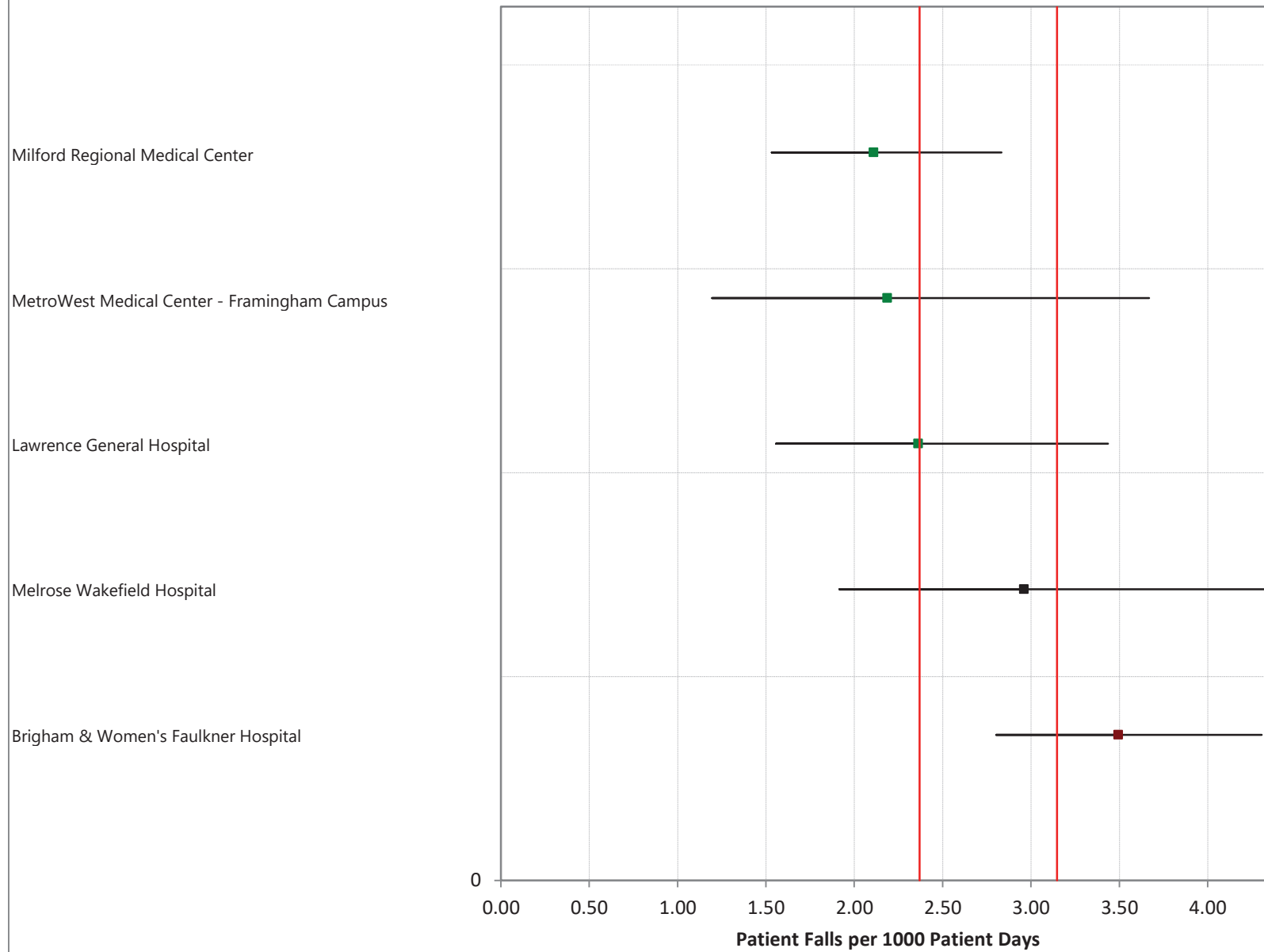
Adult Step-Down Units, More than 500 beds



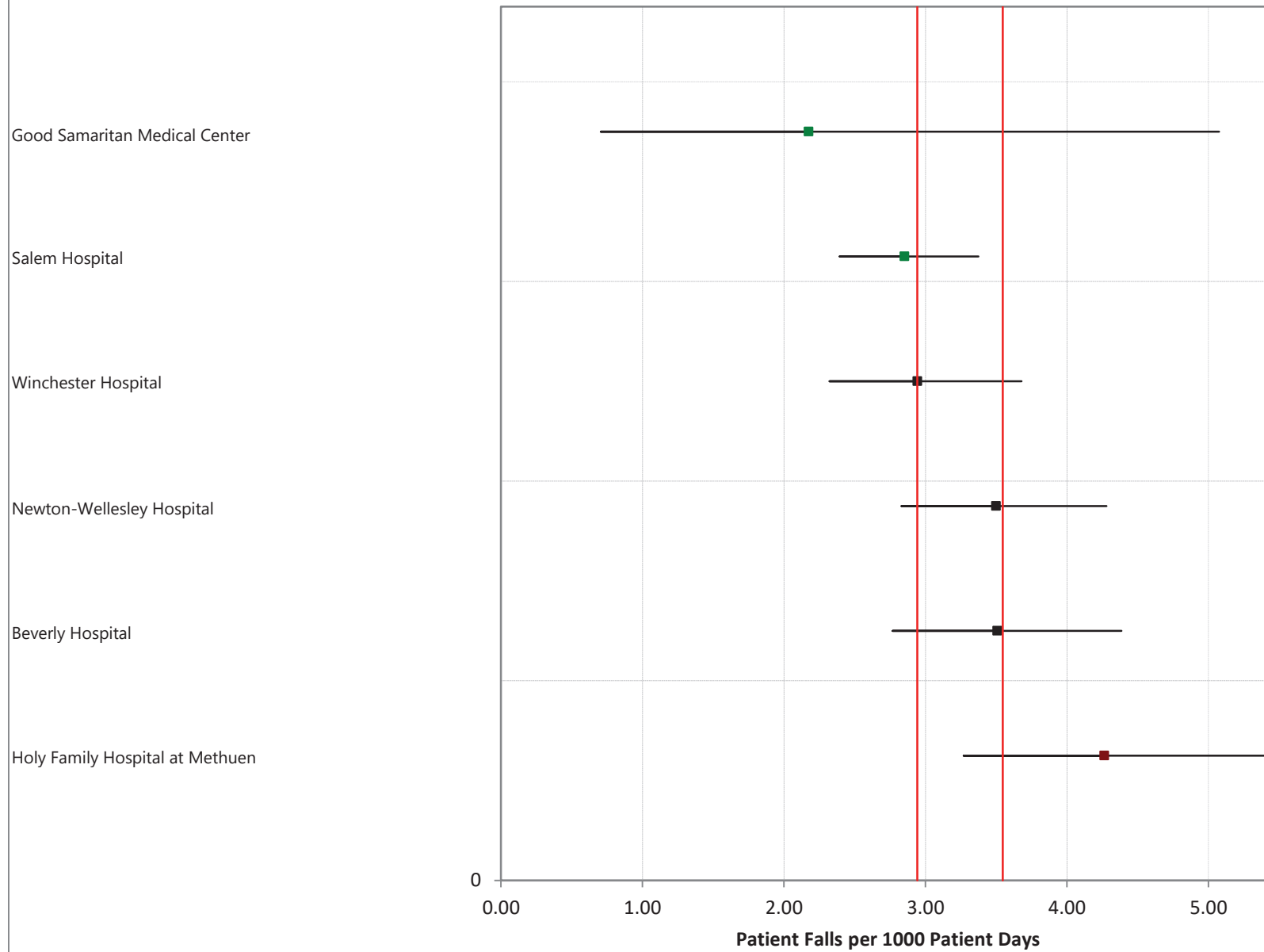
Adult Medical Units, Less than 100 beds



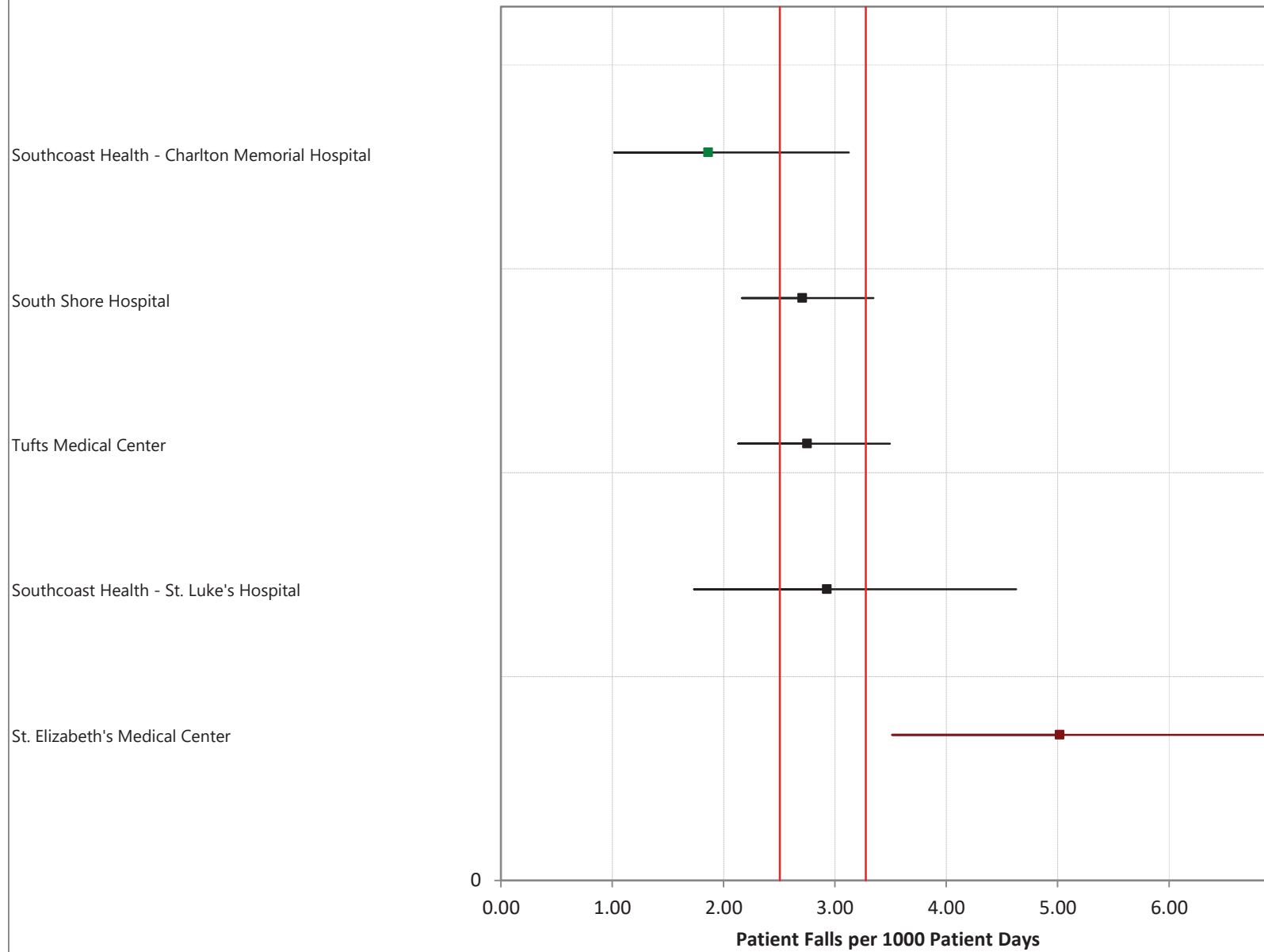
Adult Medical Units, 100-199 beds



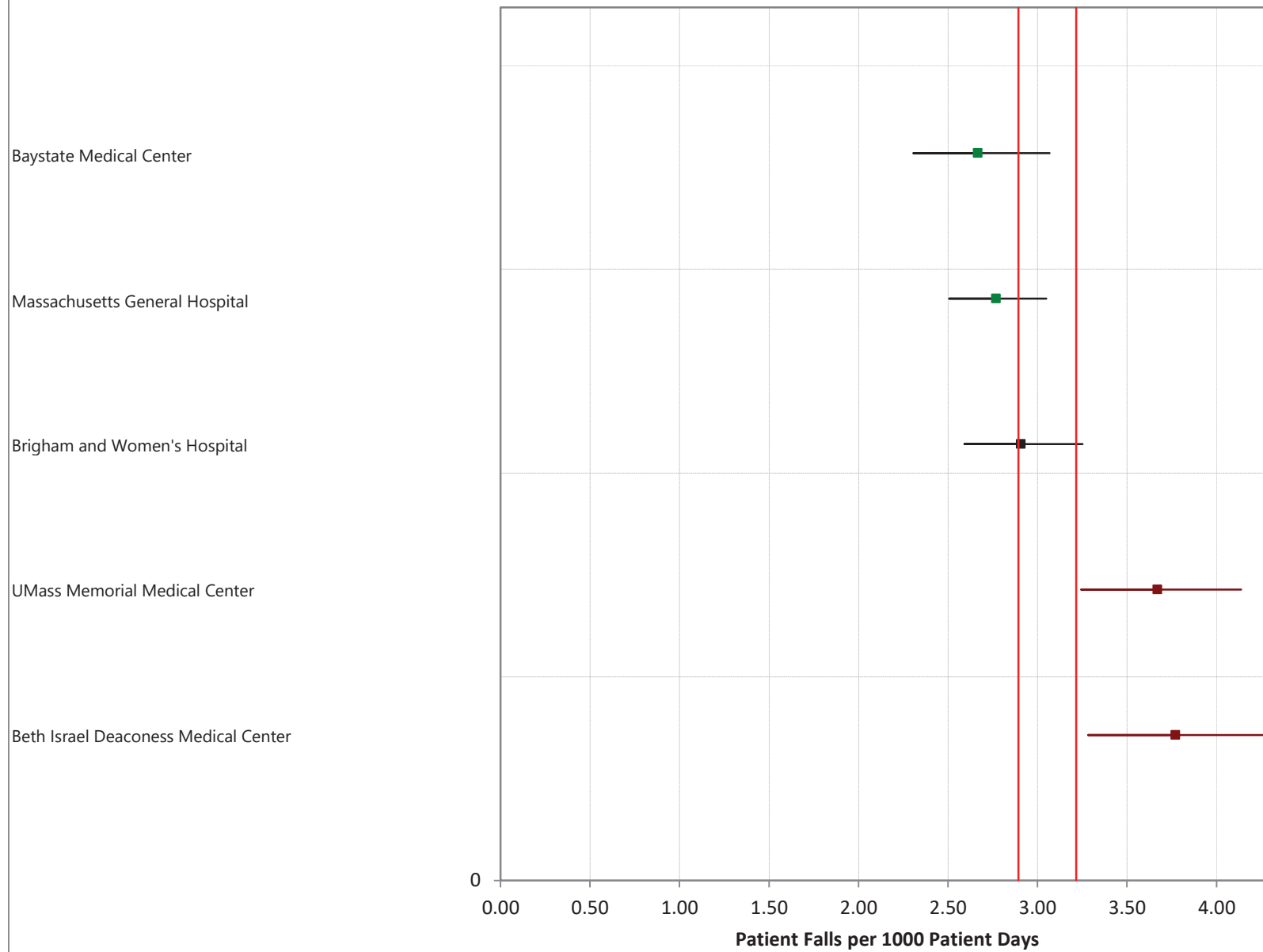
Adult Medical Units, 200-299 beds



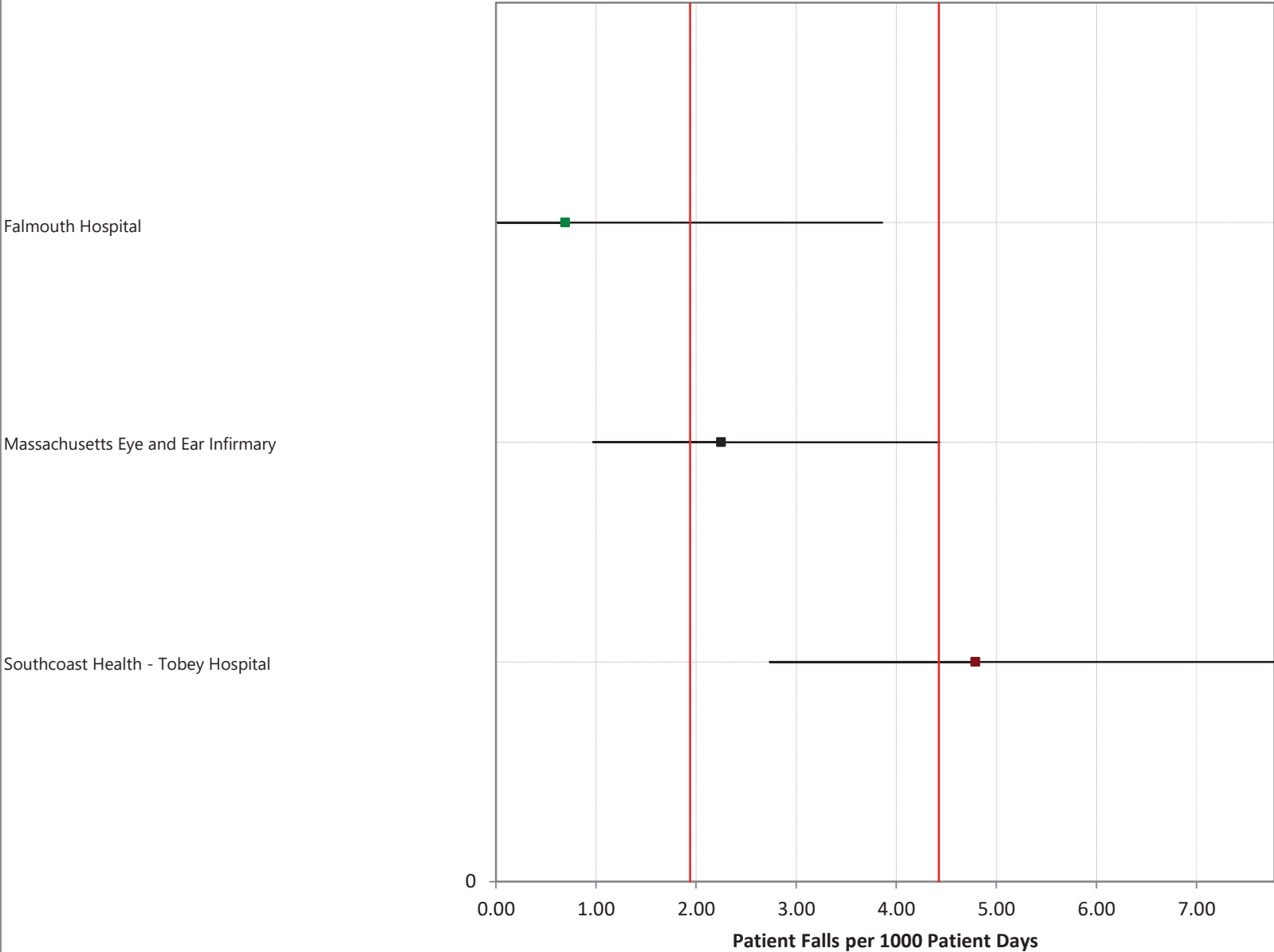
Adult Medical Units, 300-399 beds



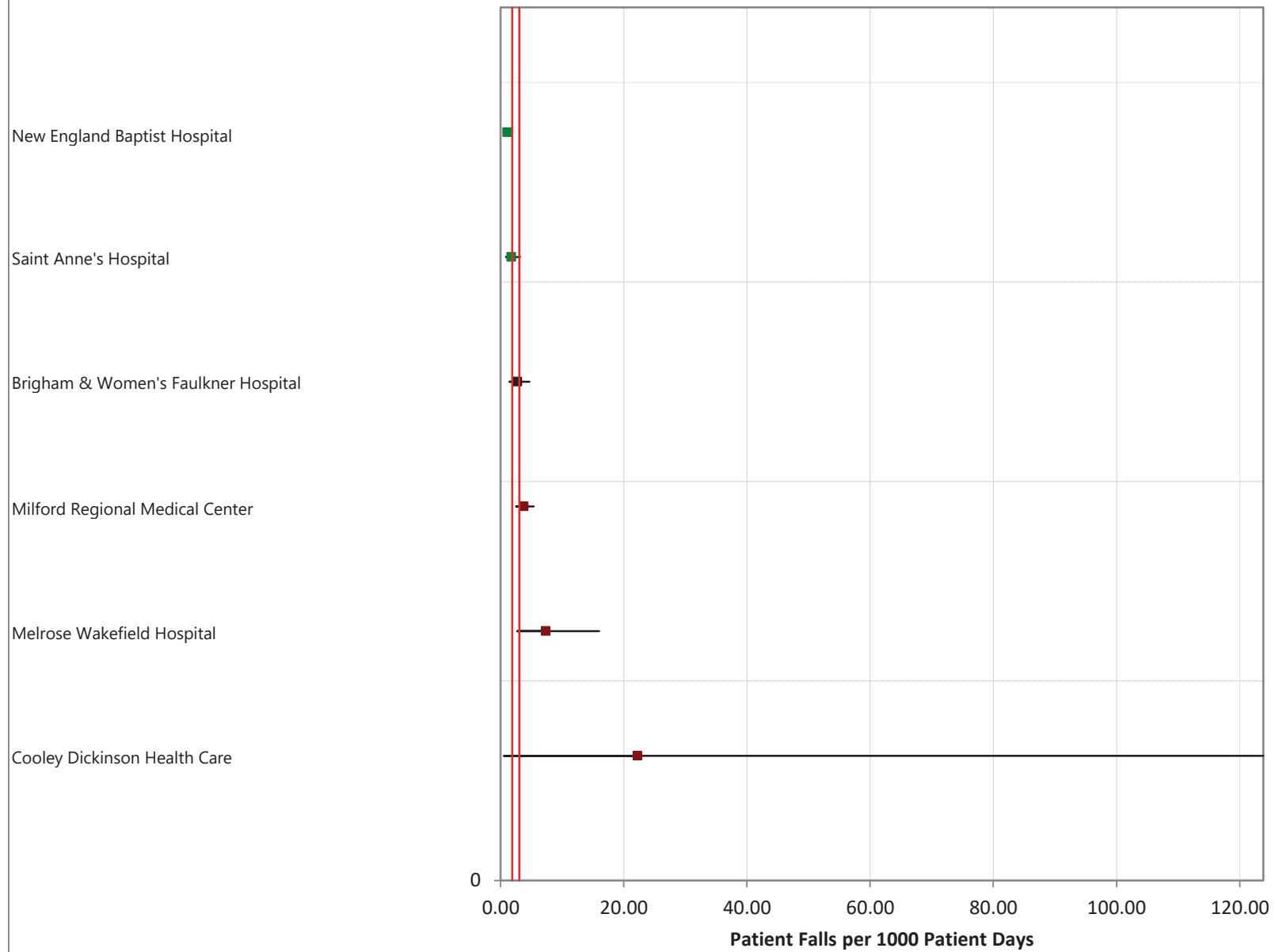
Adult Medical Units, More than 500 beds



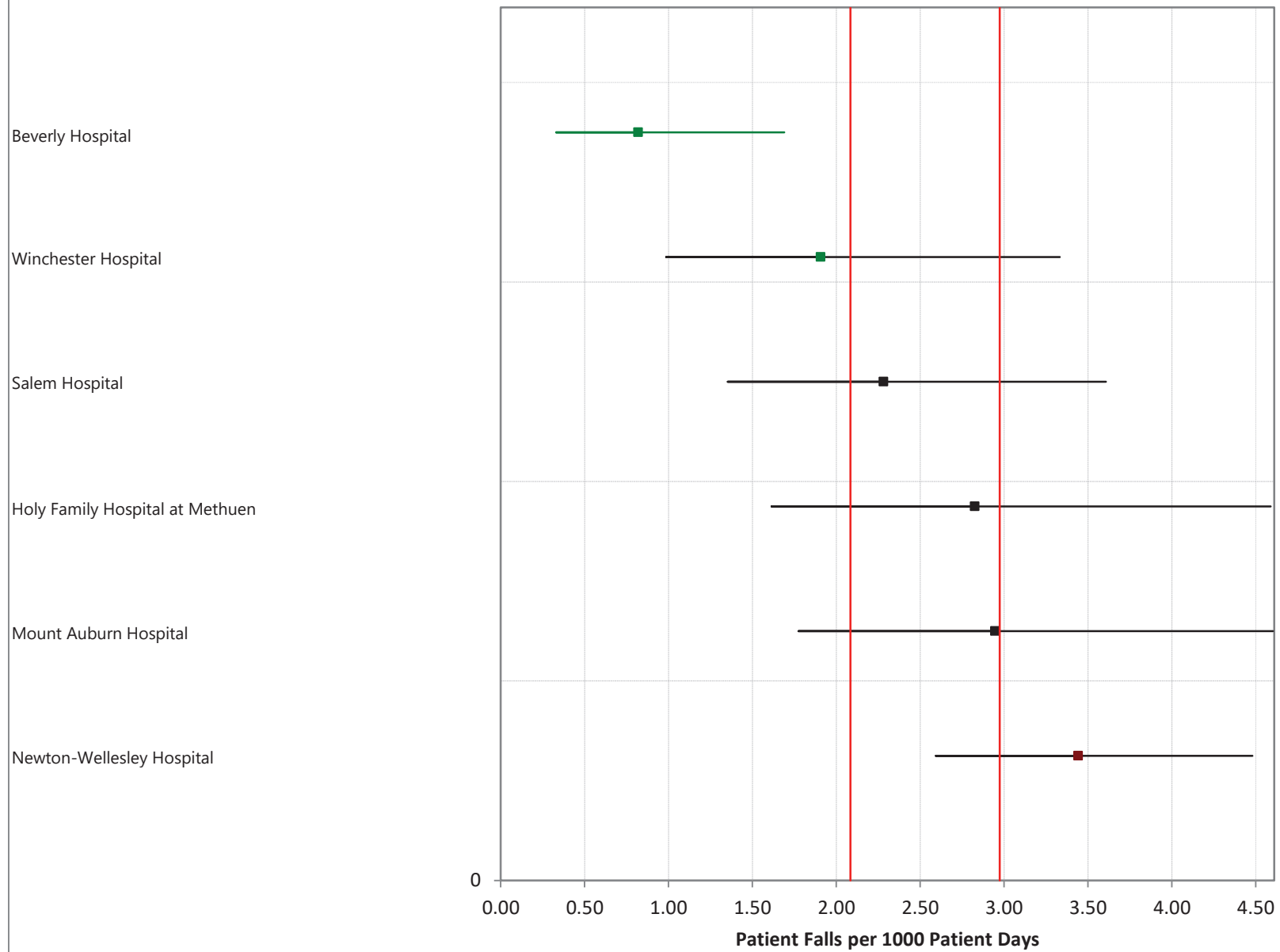
Adult Surgical Units, Less than 100 beds



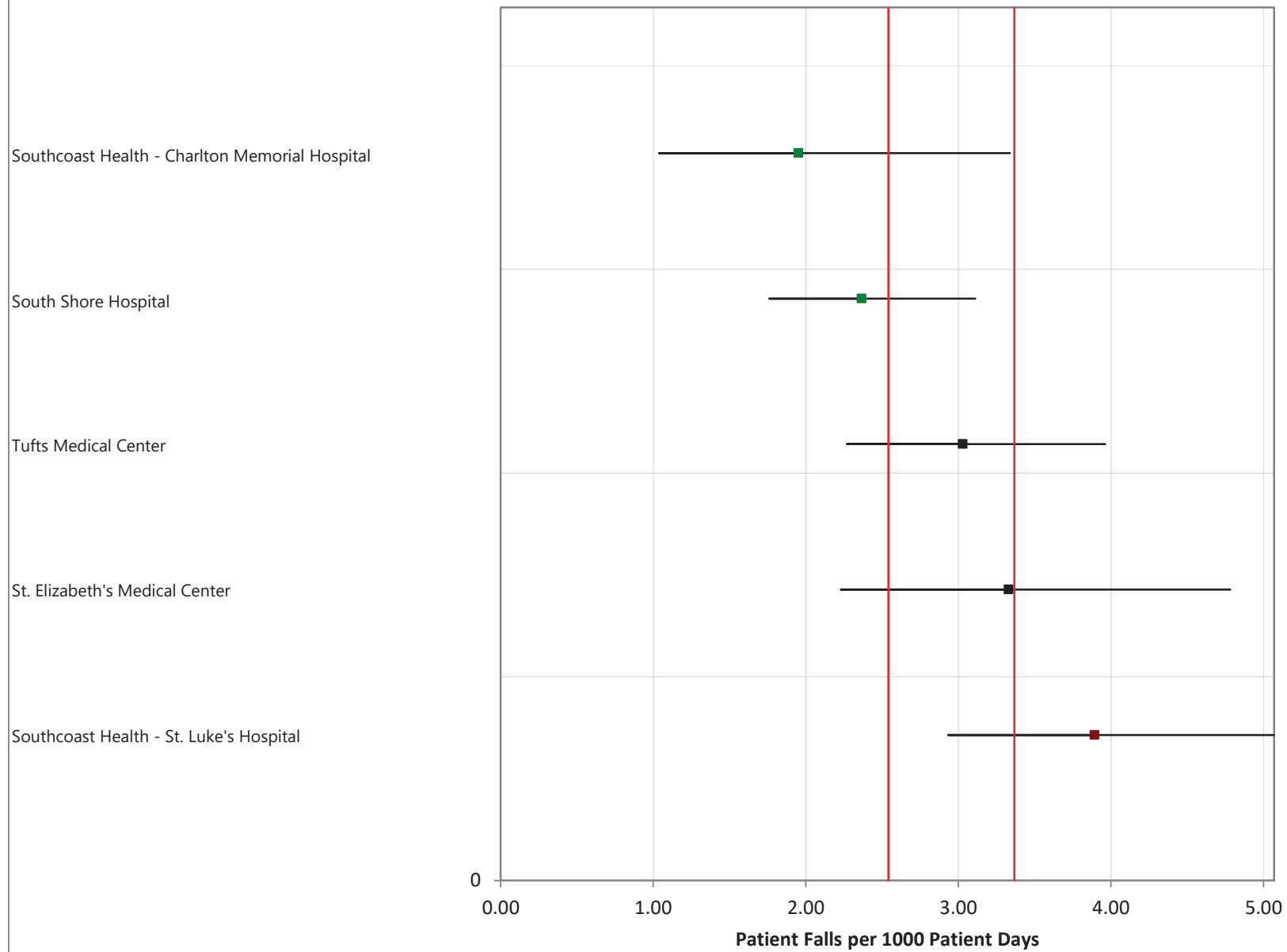
Adult Surgical Units, 100-199 beds



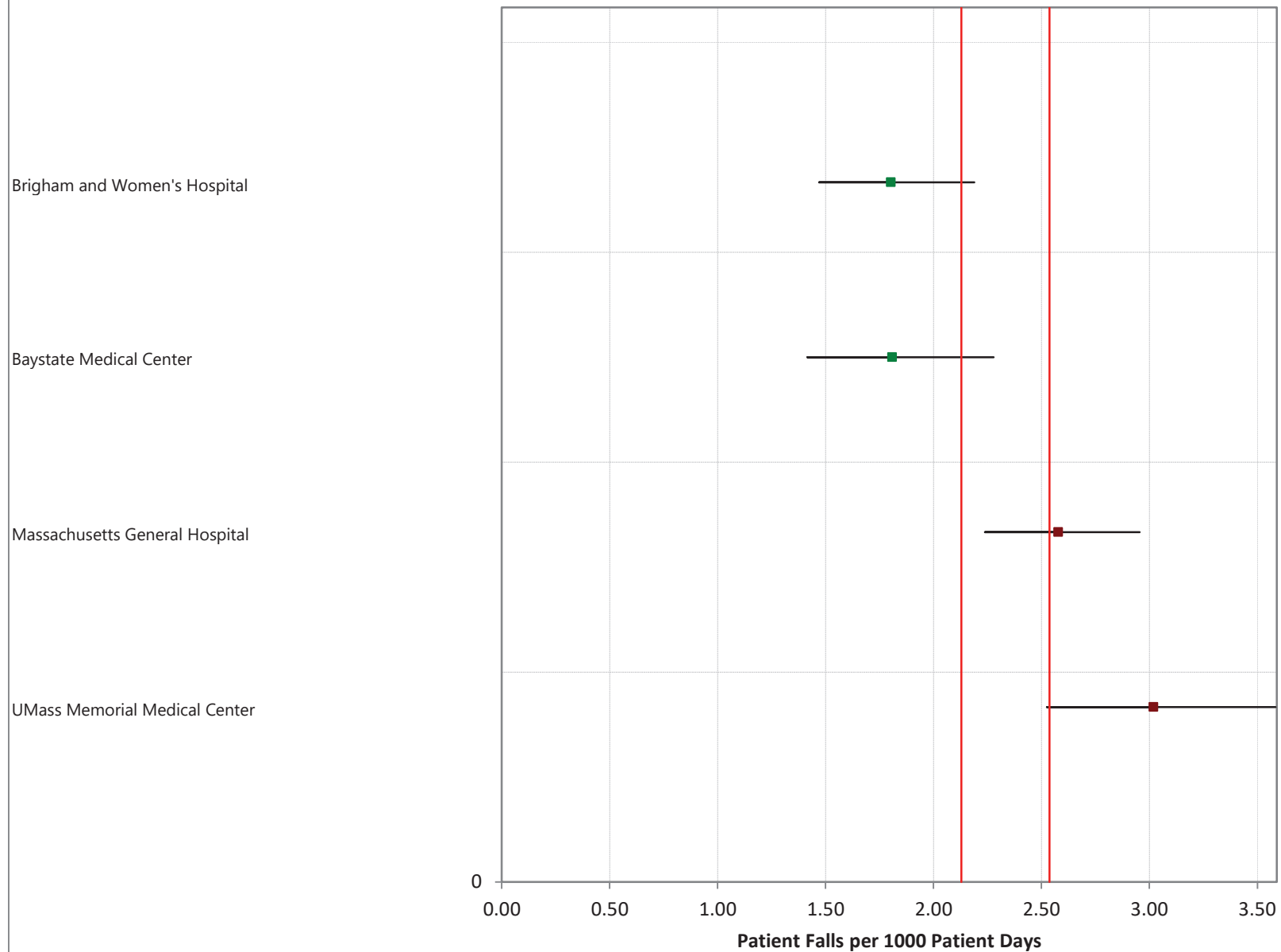
Adult Surgical Units, 200-299 beds



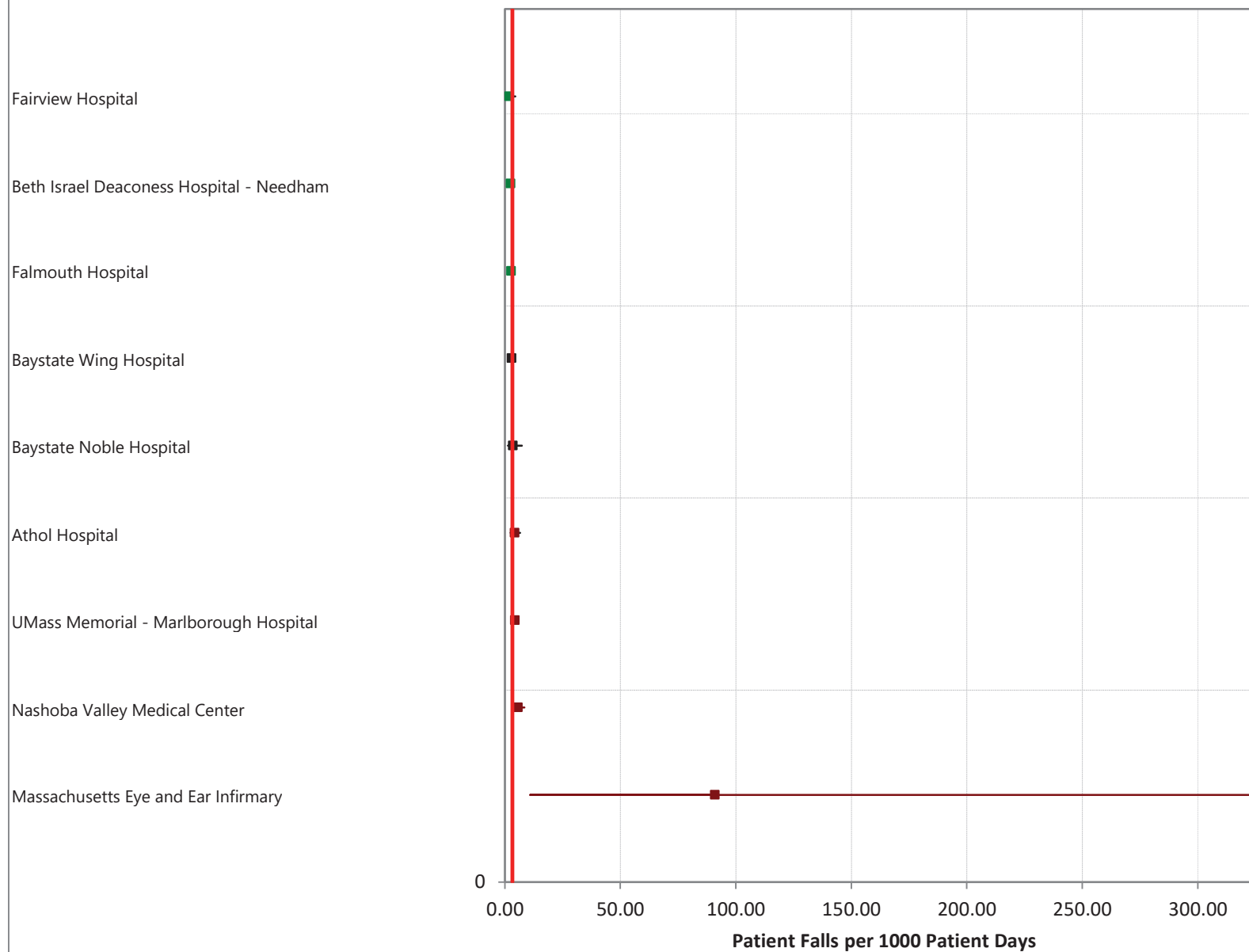
Adult Surgical Units, 300-399 beds



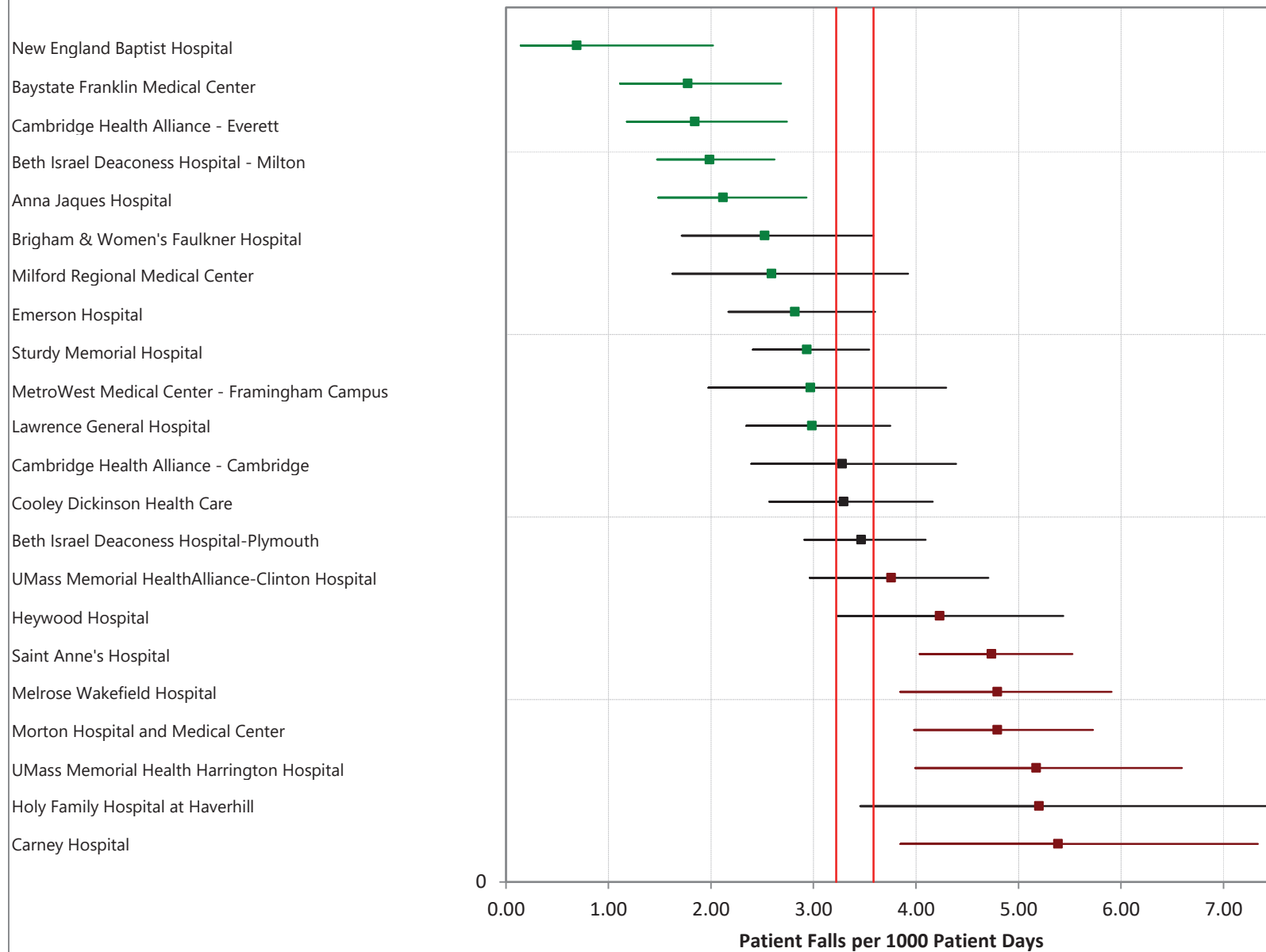
Adult Surgical Units, More than 500 beds



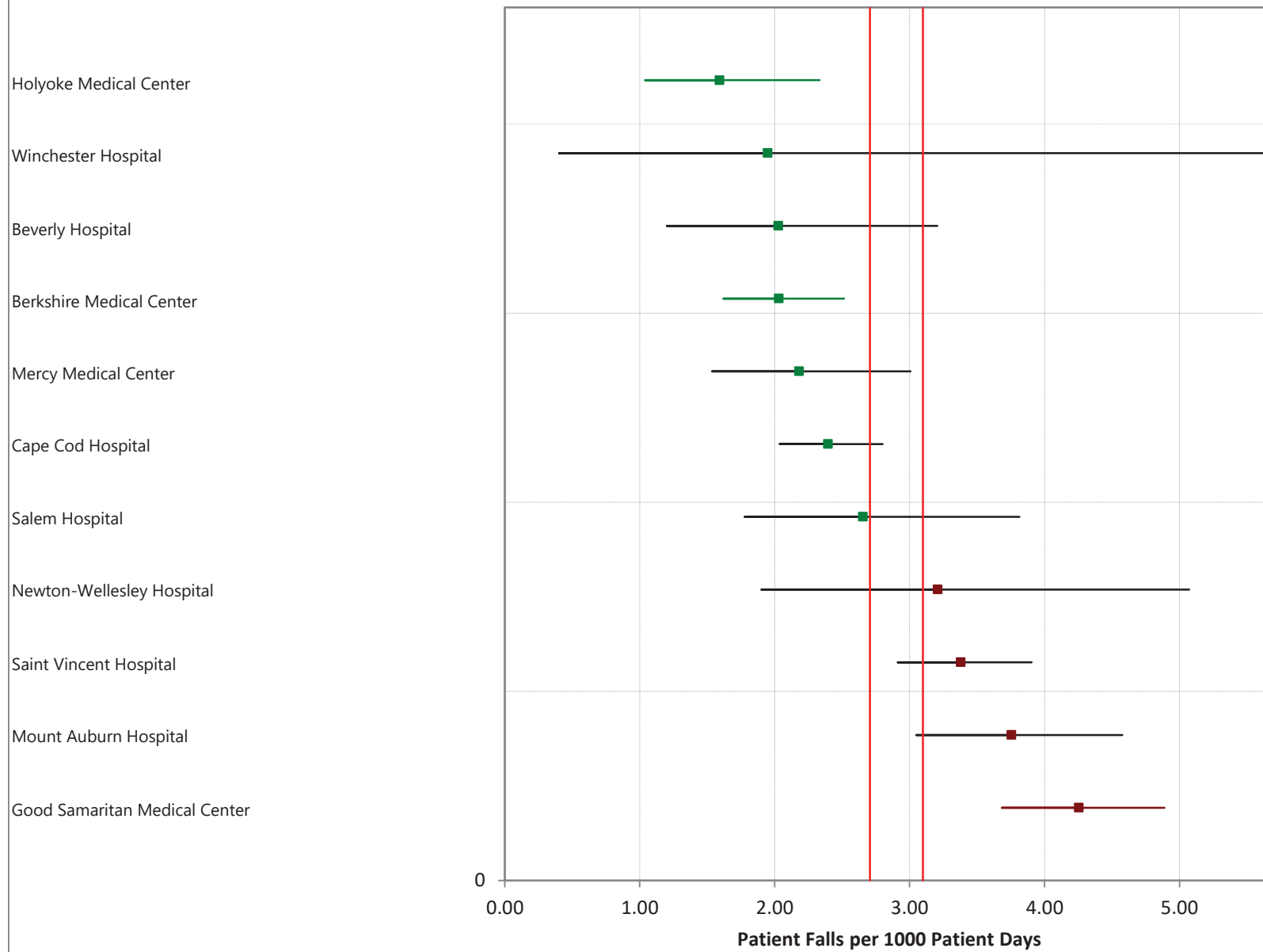
Adult Medical-Surgical Units, Less than 100 beds



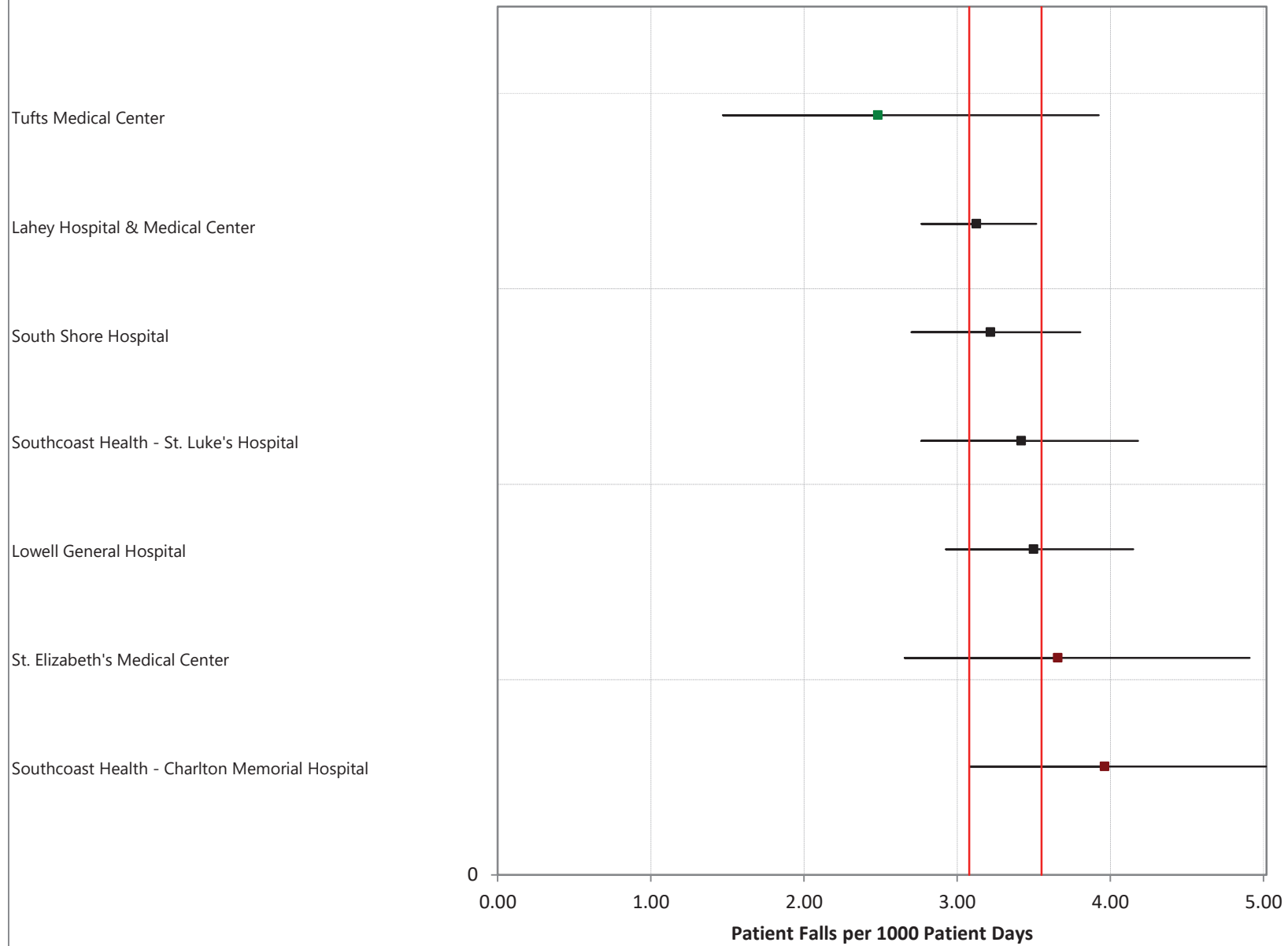
Adult Medical-Surgical Units, 100-199 beds



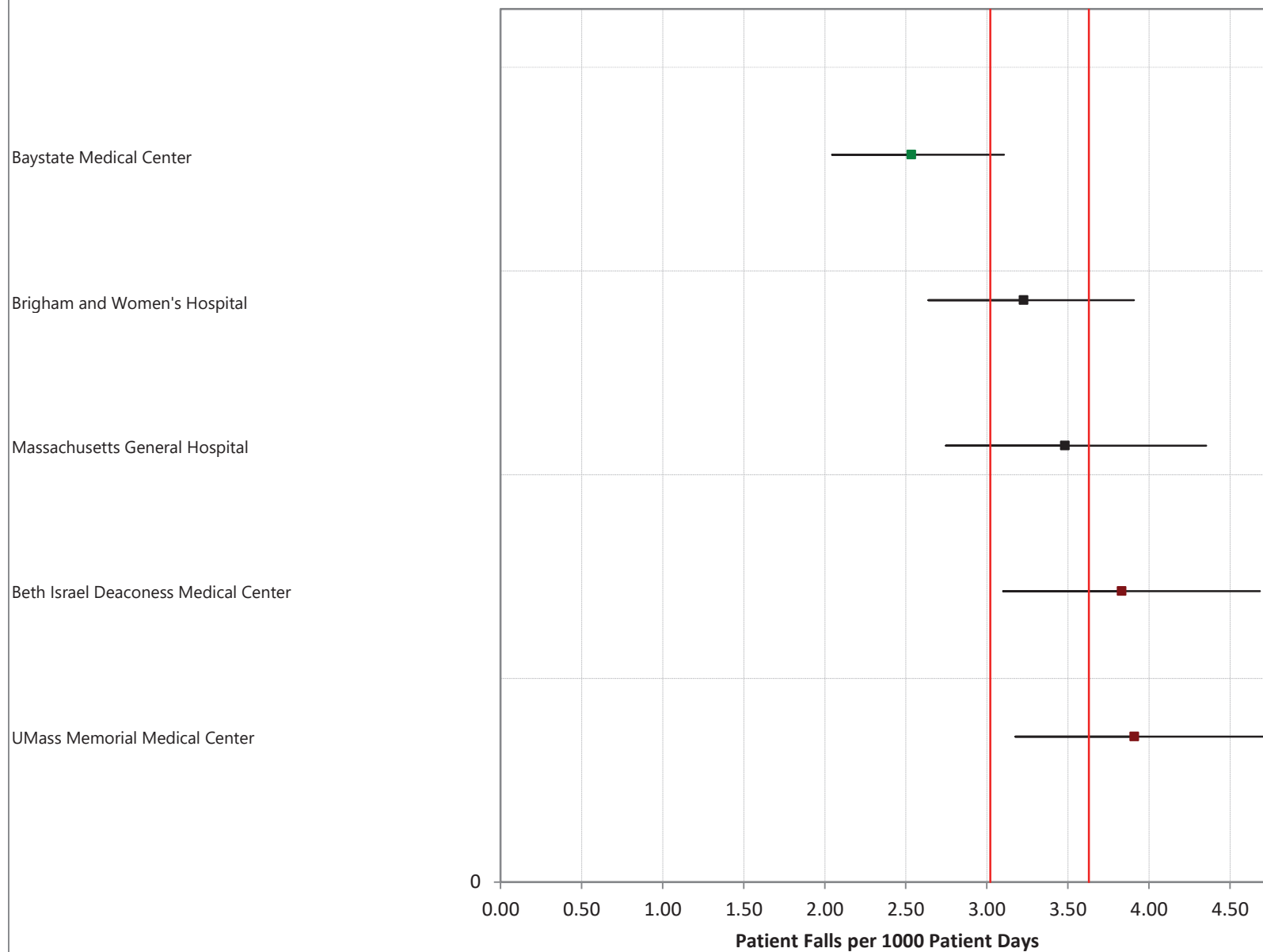
Adult Medical-Surgical Units, 200-299 beds



Adult Medical-Surgical Units, 300-399 beds



Adult Medical-Surgical Units, More than 500 beds



NSC-4 Falls with Injury

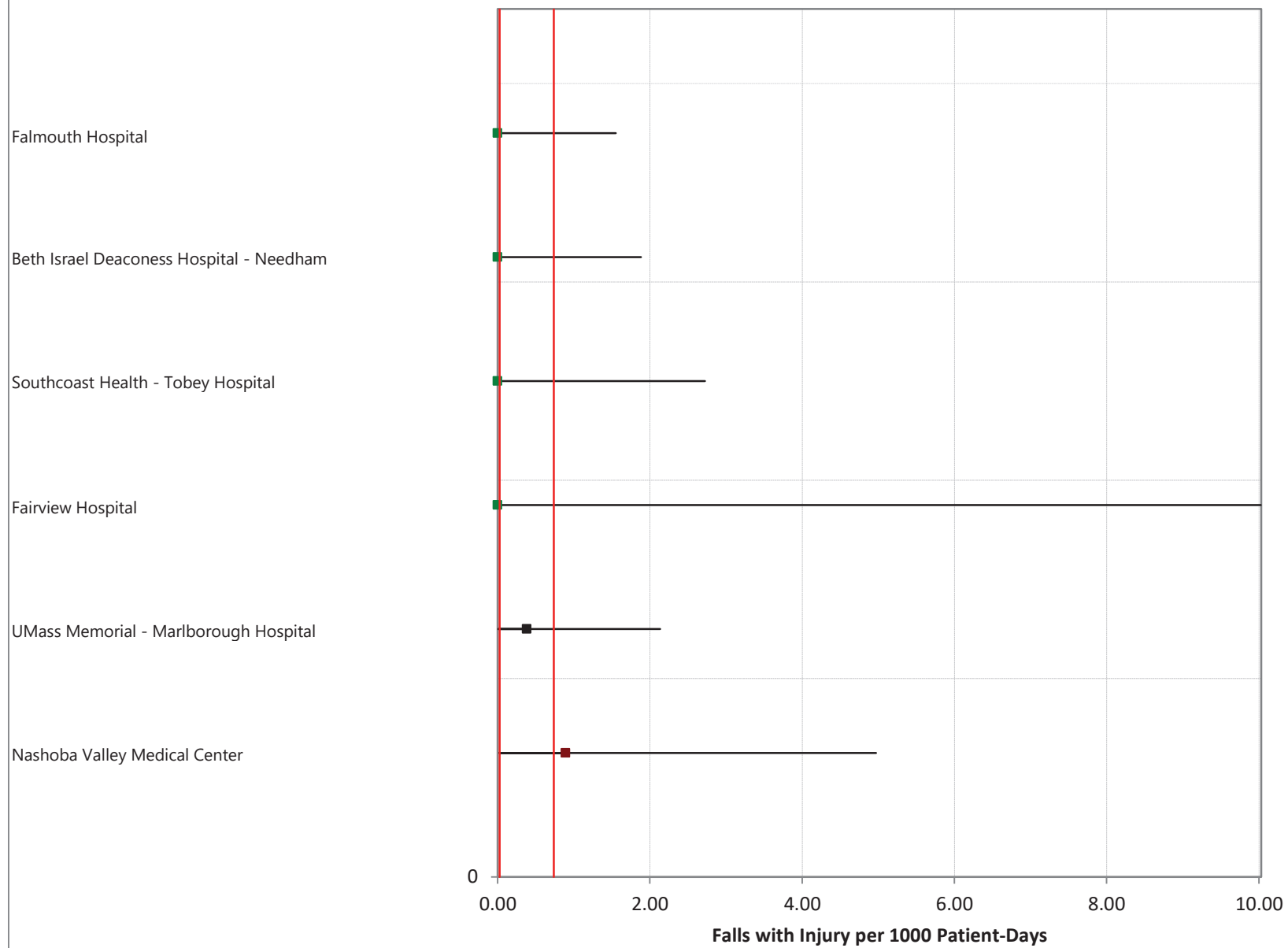
October – December 2022

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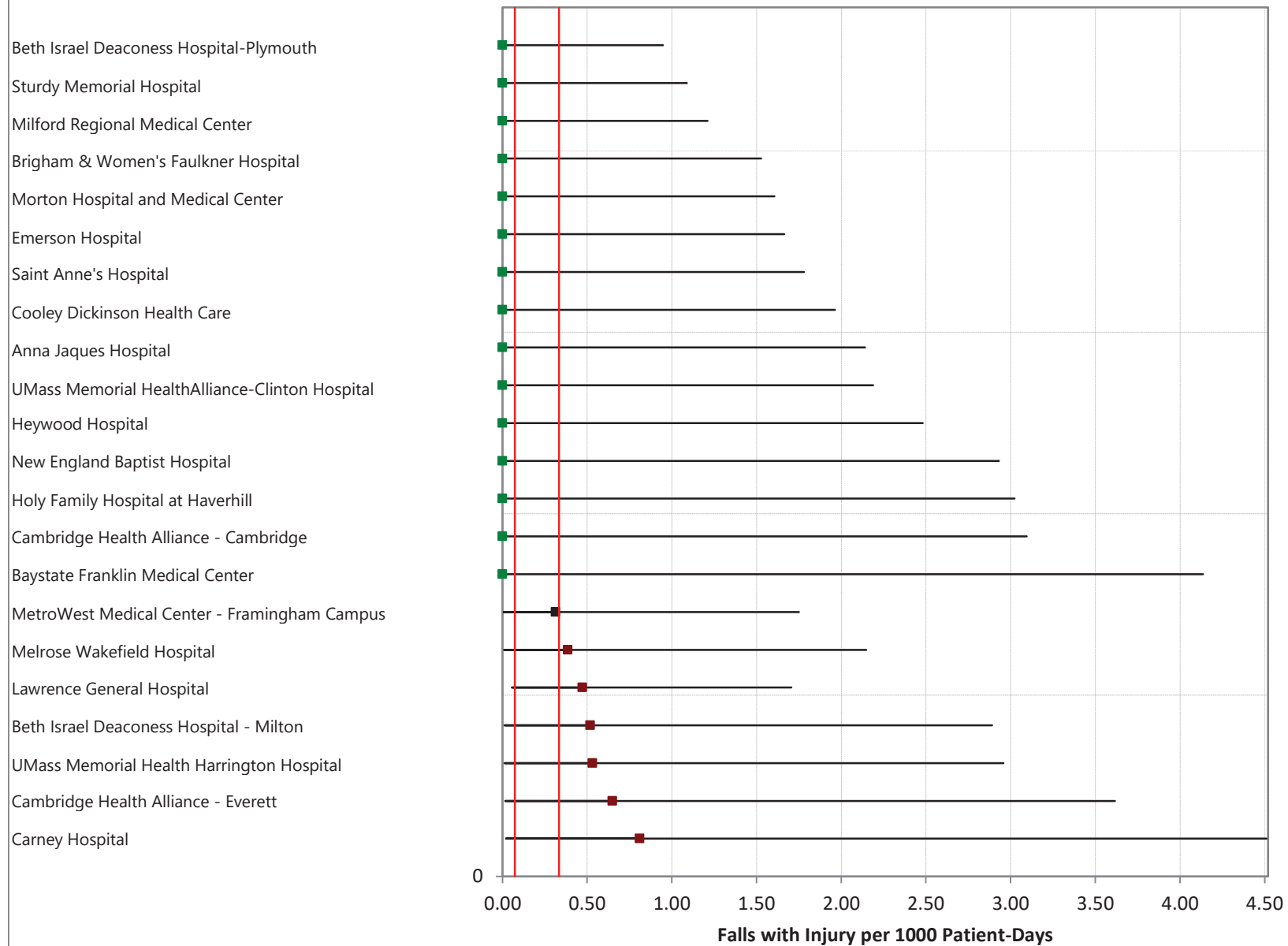
April – June 2023

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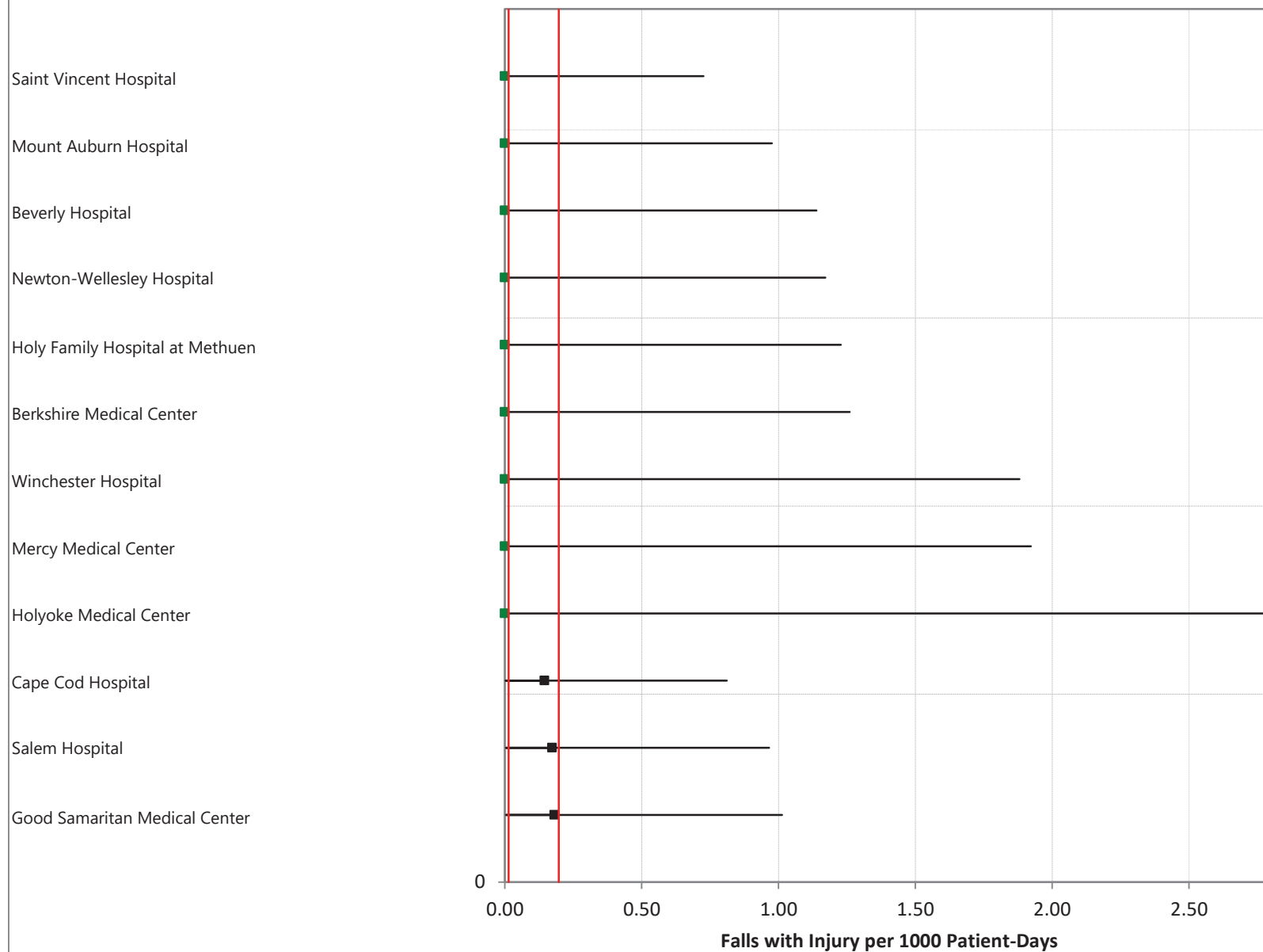
Adult Critical Care Units, Less than 100 beds



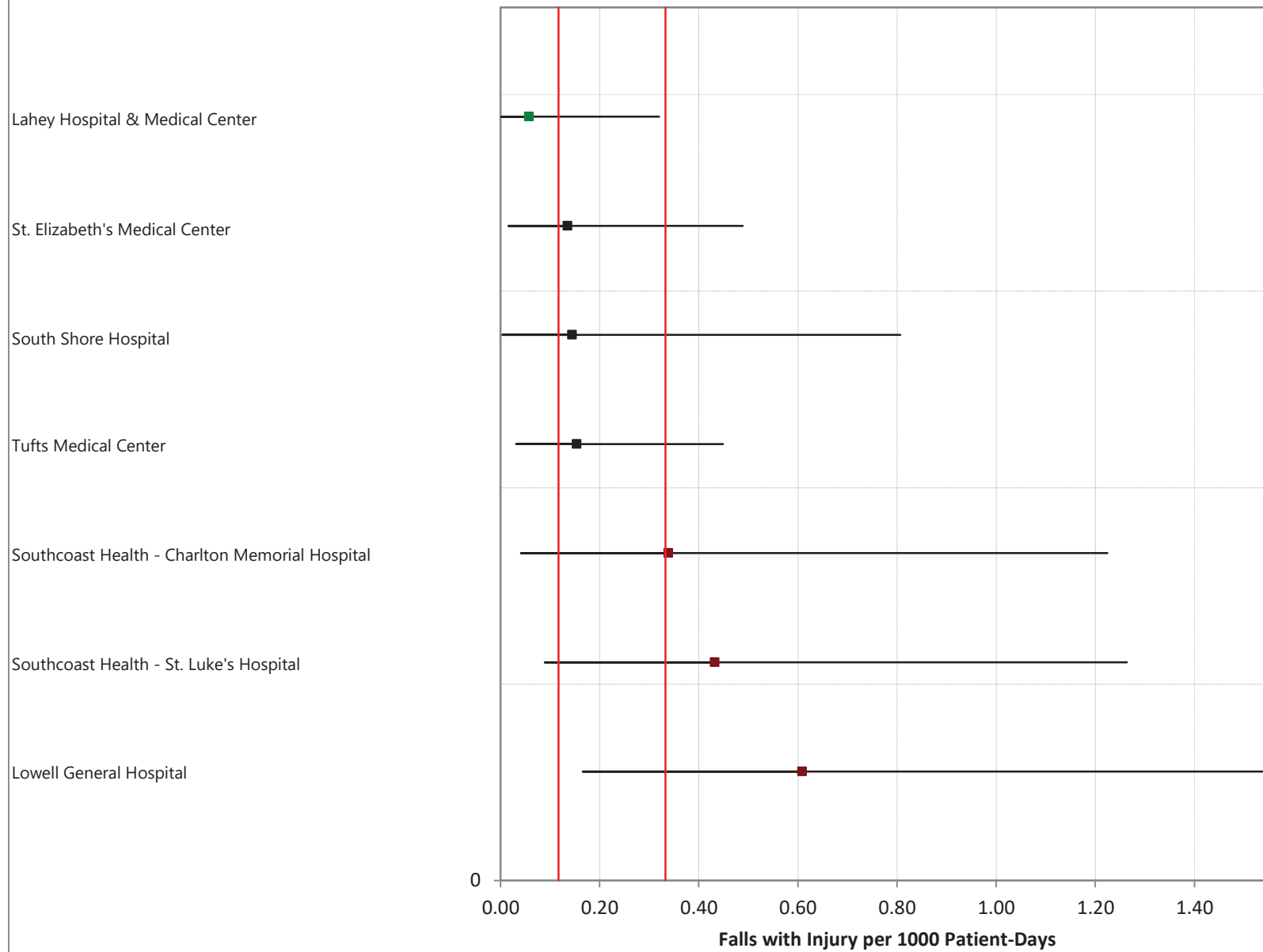
Adult Critical Care Units, 100-199 beds



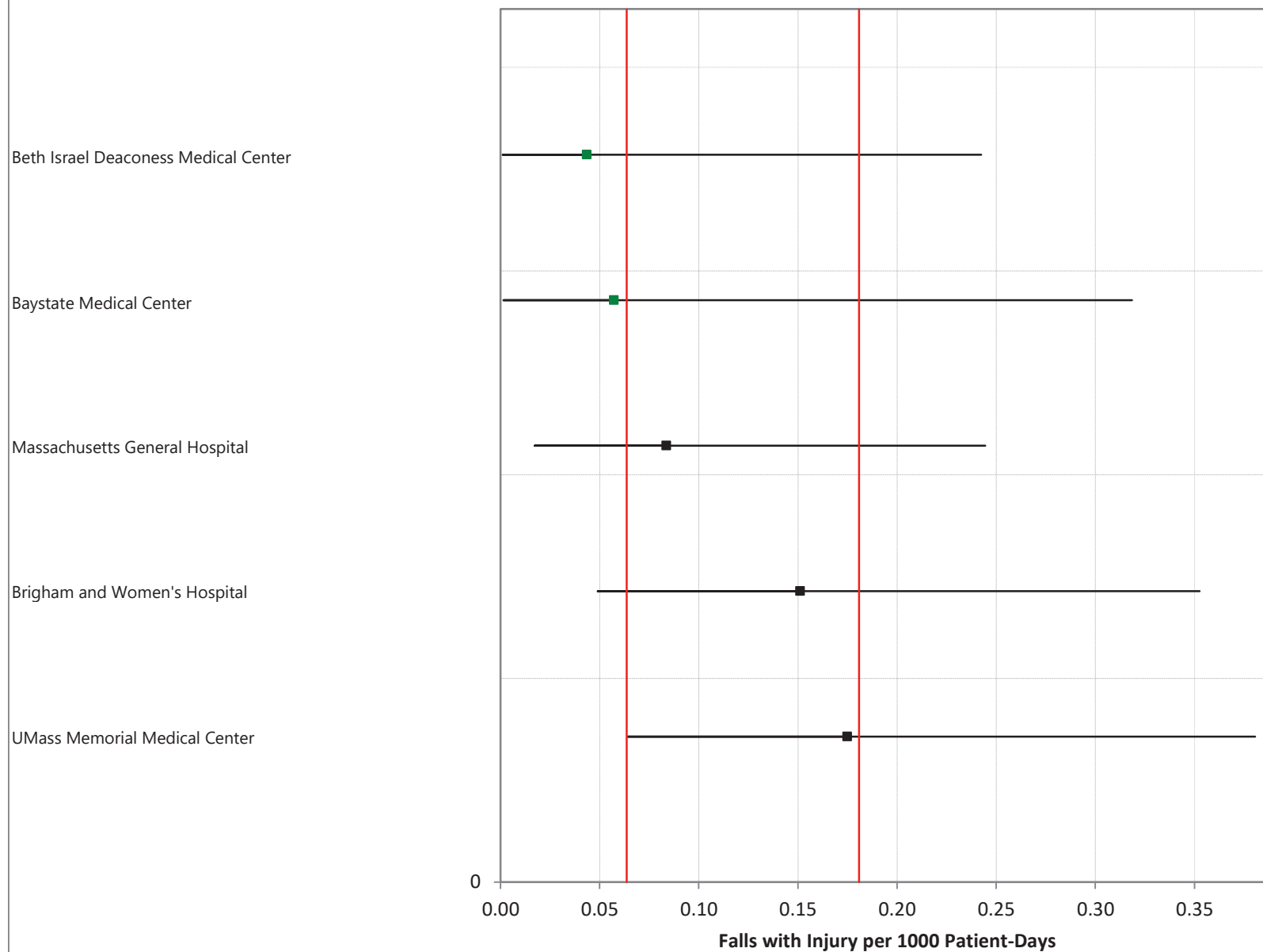
Adult Critical Care Units, 200-299 beds



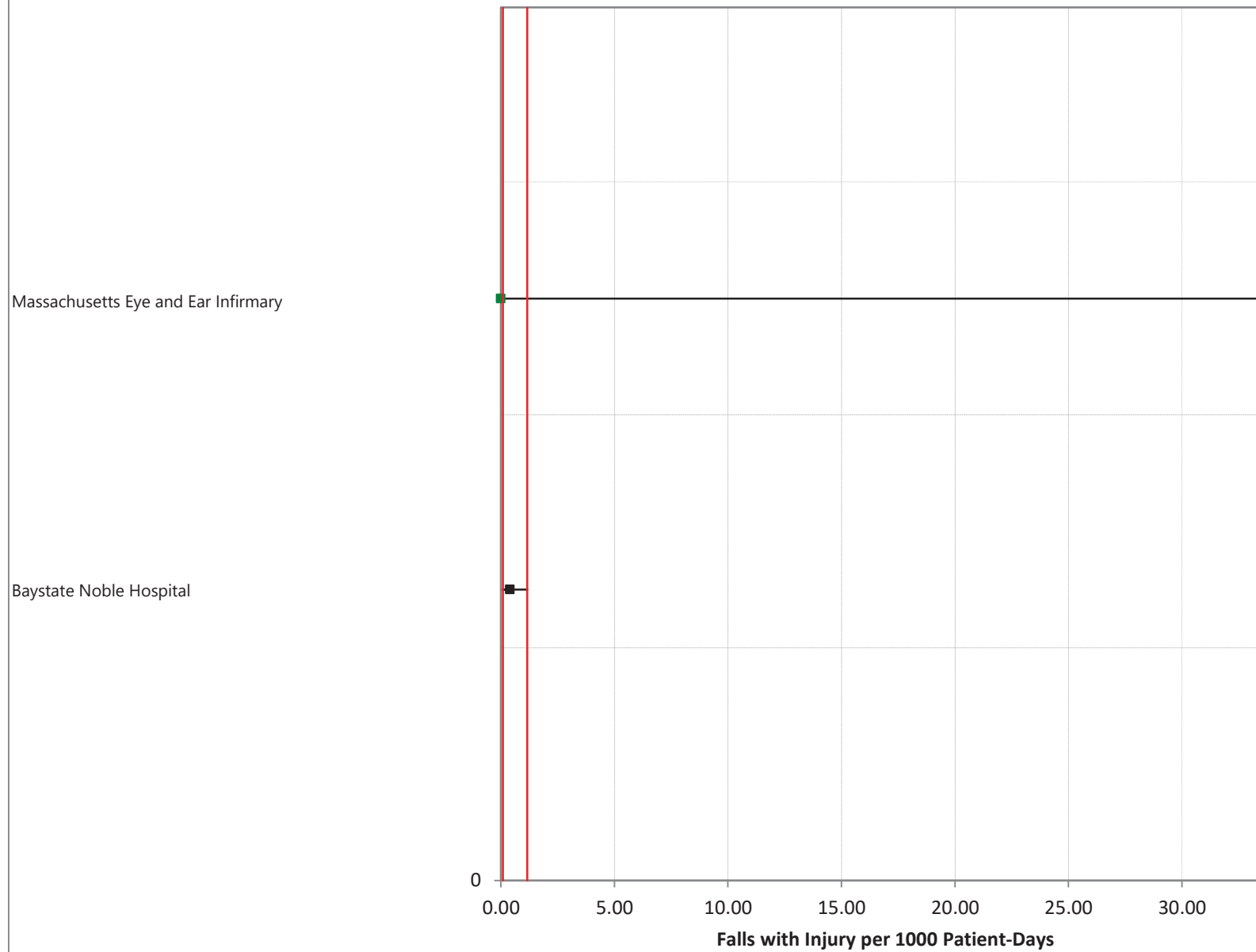
Adult Critical Care Units, 300-399 beds



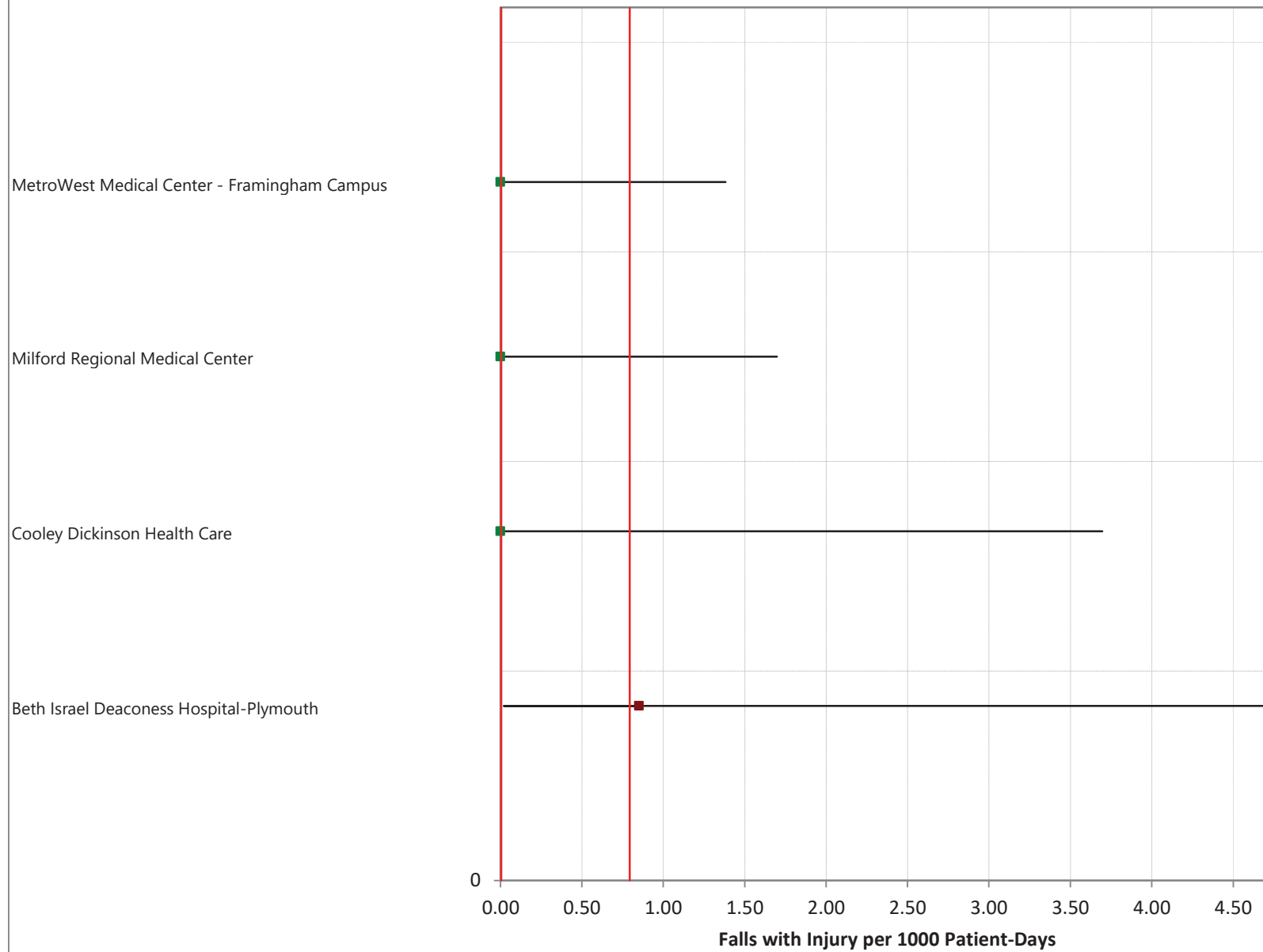
Adult Critical Care Units, More than 500 beds



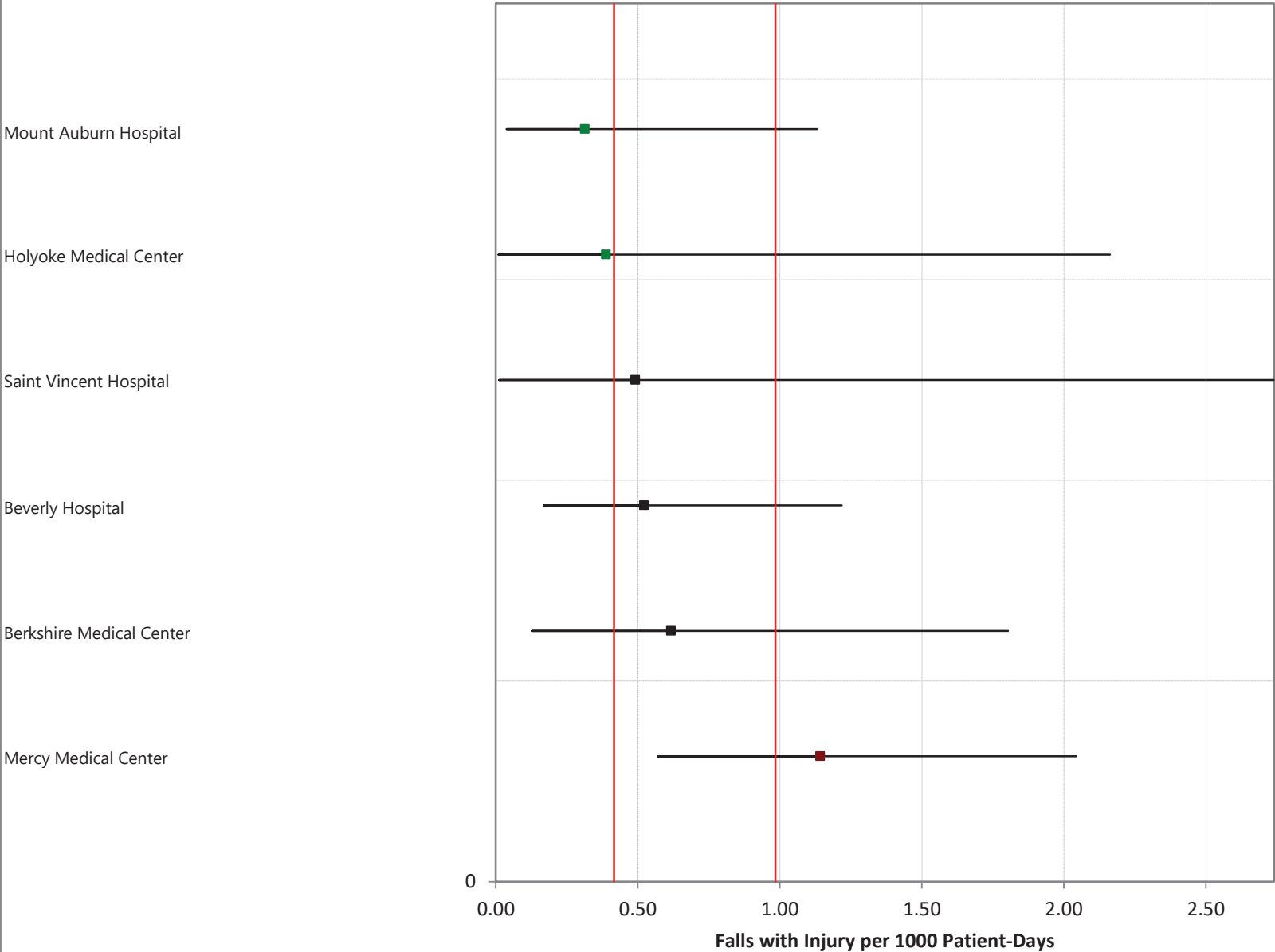
Adult Step-Down Units, Less than 100 beds



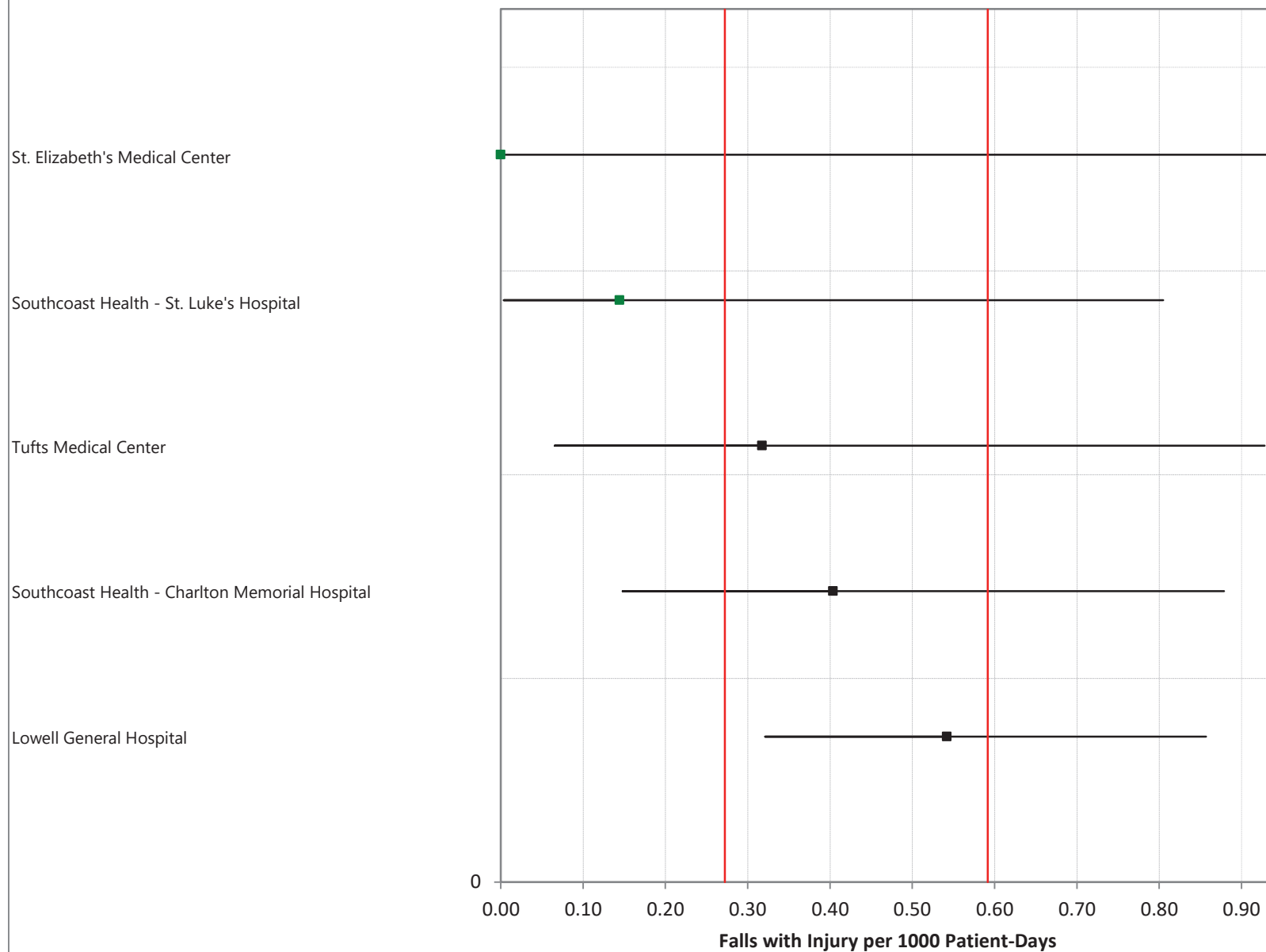
Adult Step-Down Units, 100-199 beds



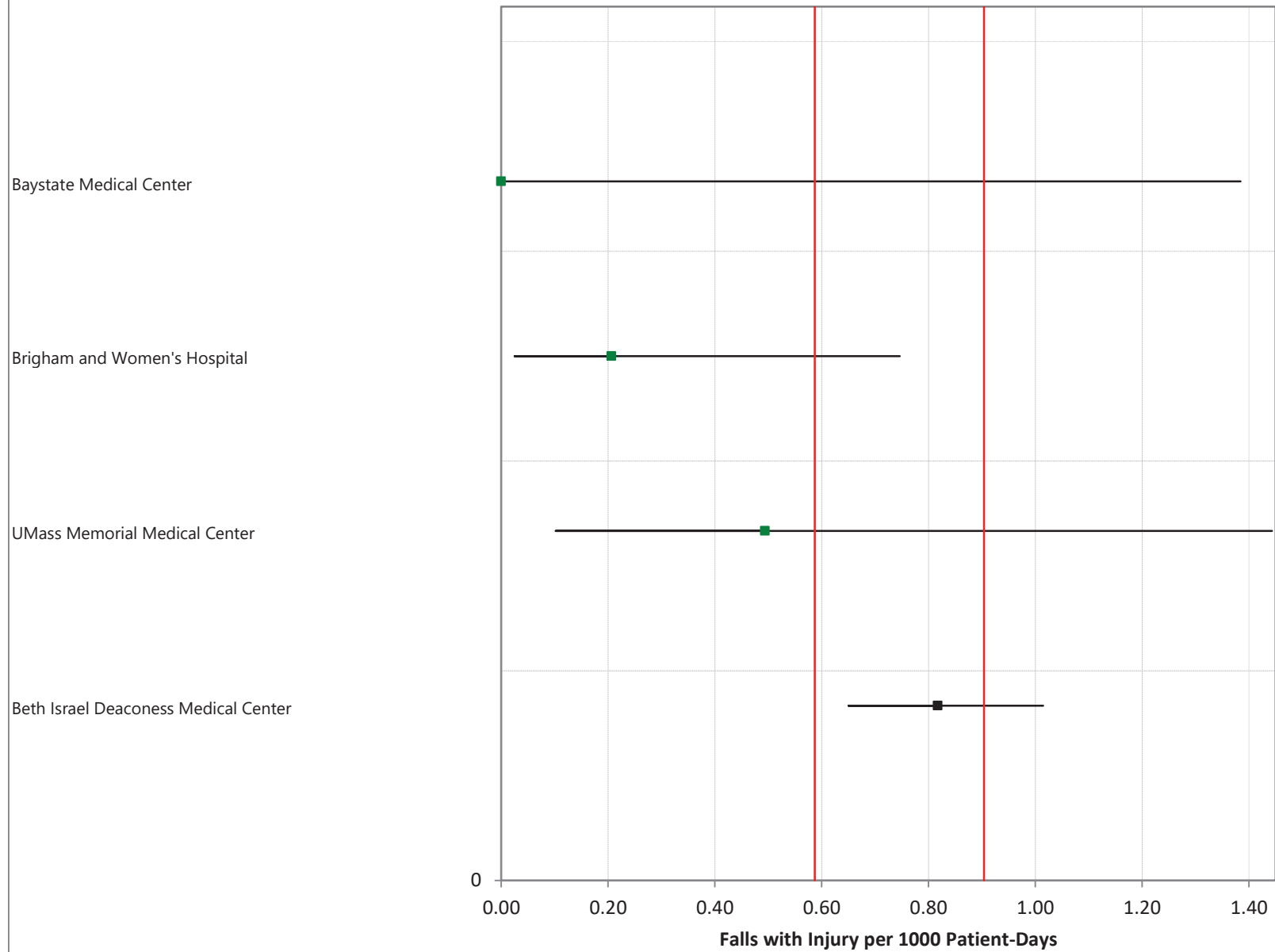
Adult Step-Down Units, 200-299 beds



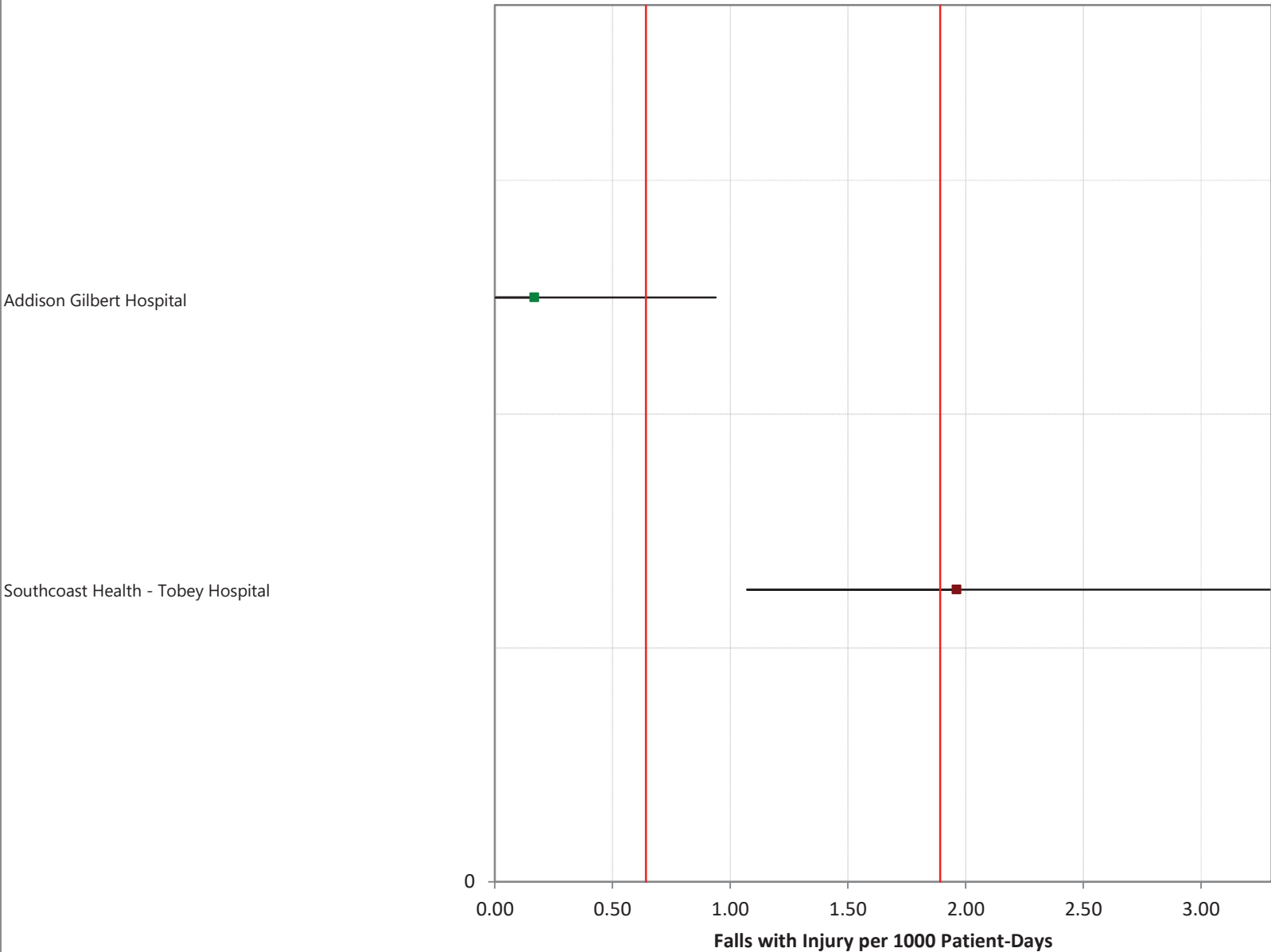
Adult Step-Down Units, 300-399 beds



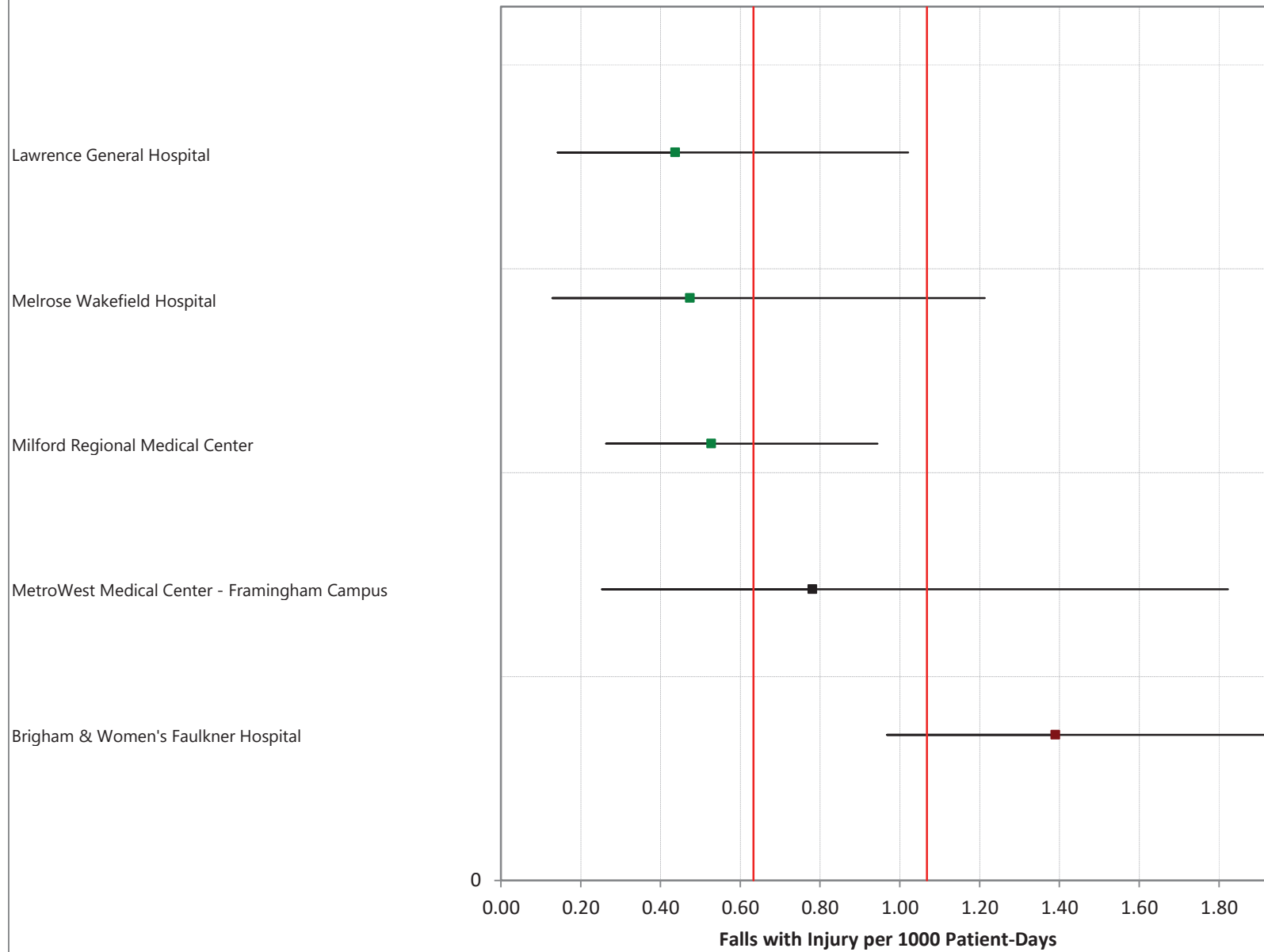
Adult Step-Down Units, More than 500 beds



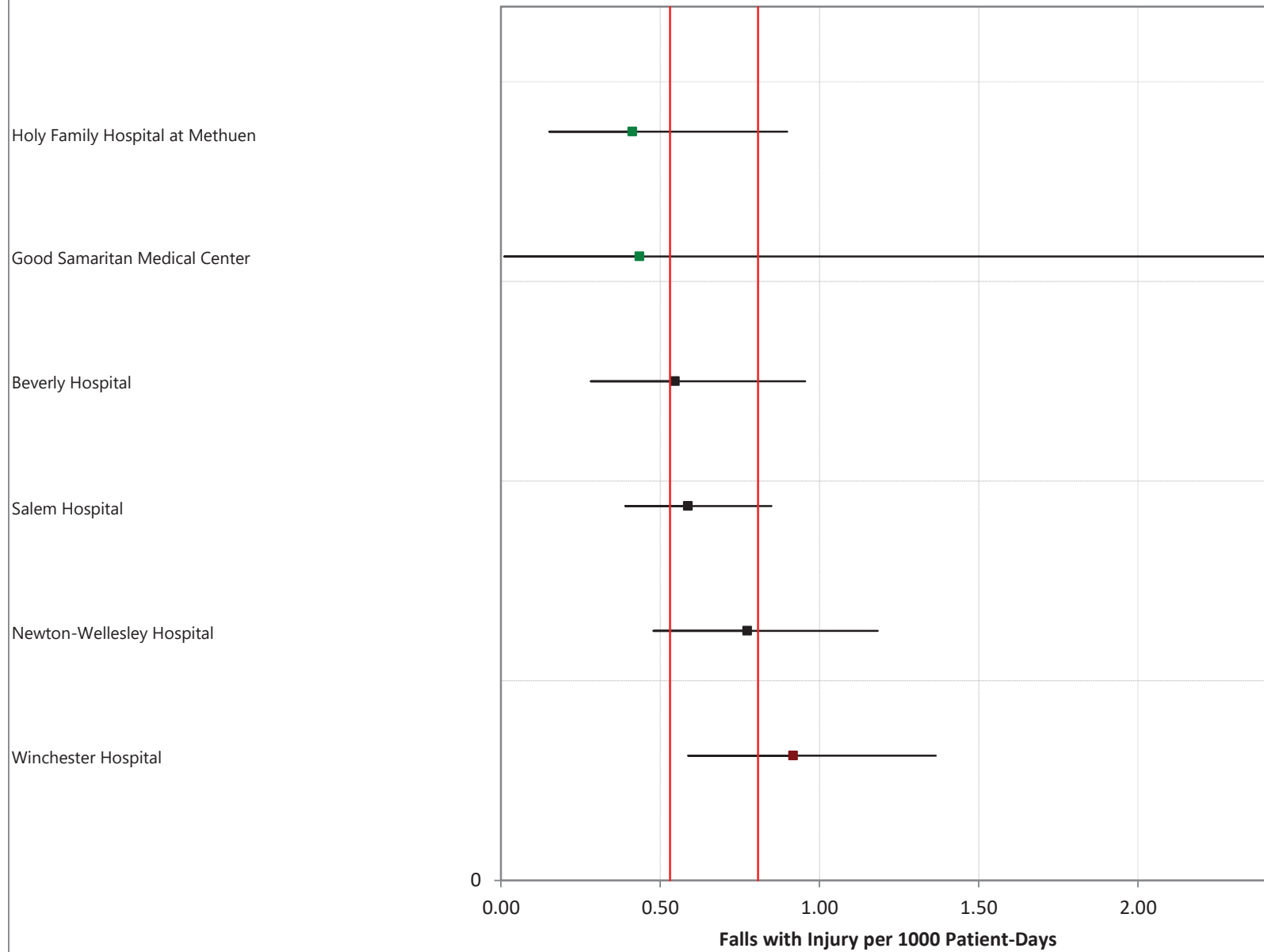
Adult Medical Units, Less than 100 beds



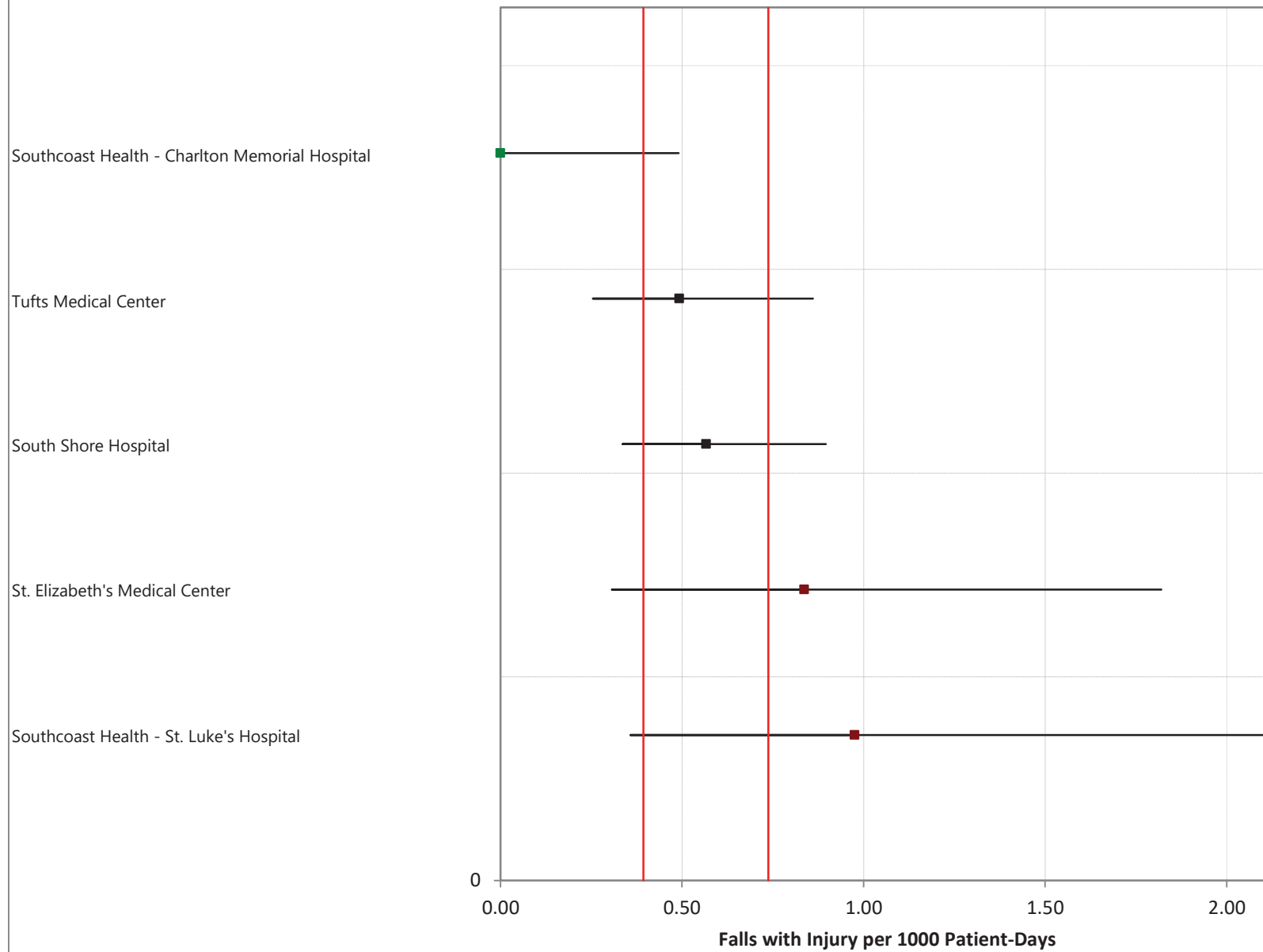
Adult Medical Units, 100-199 beds



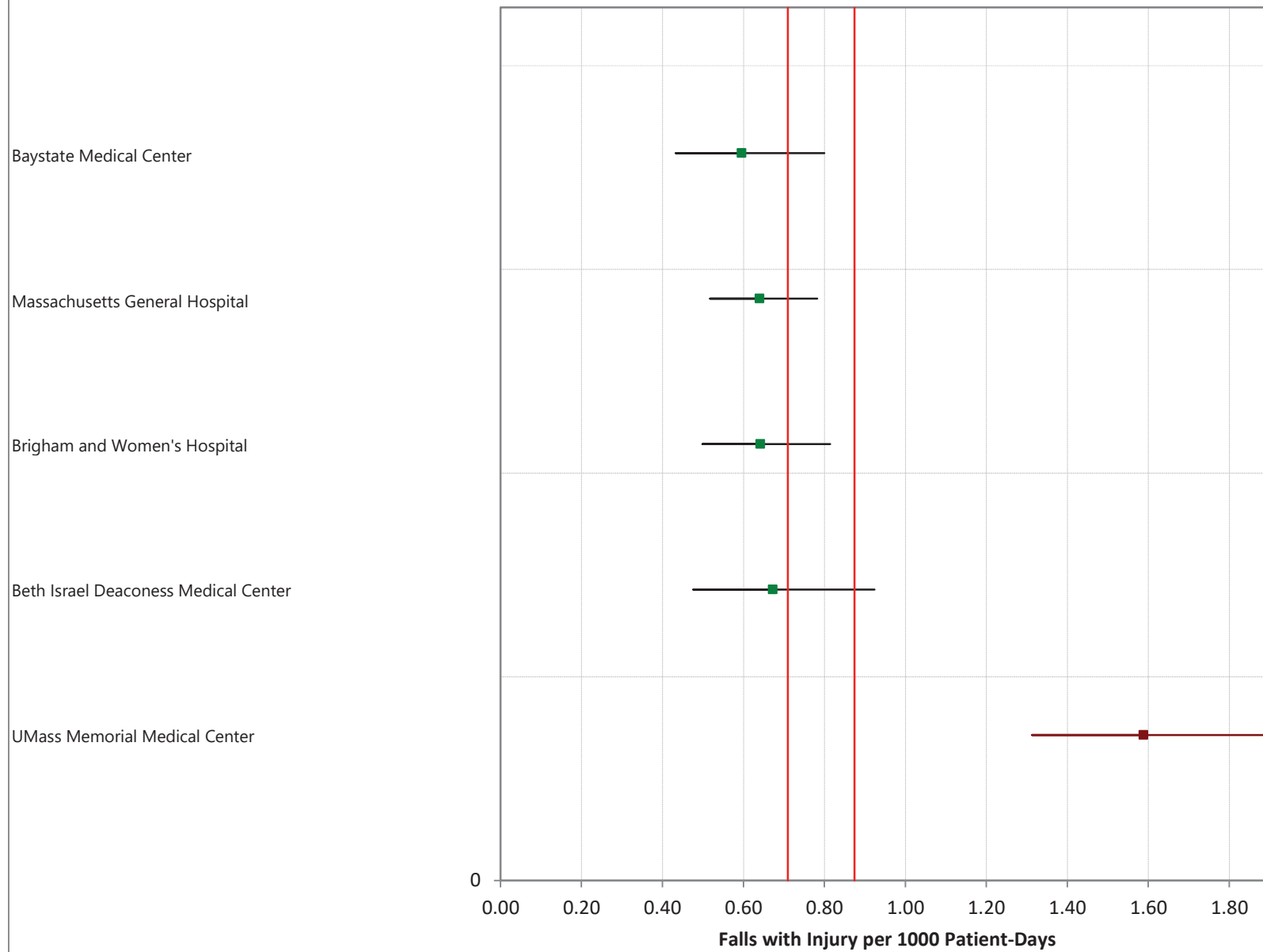
Adult Medical Units, 200-299 beds



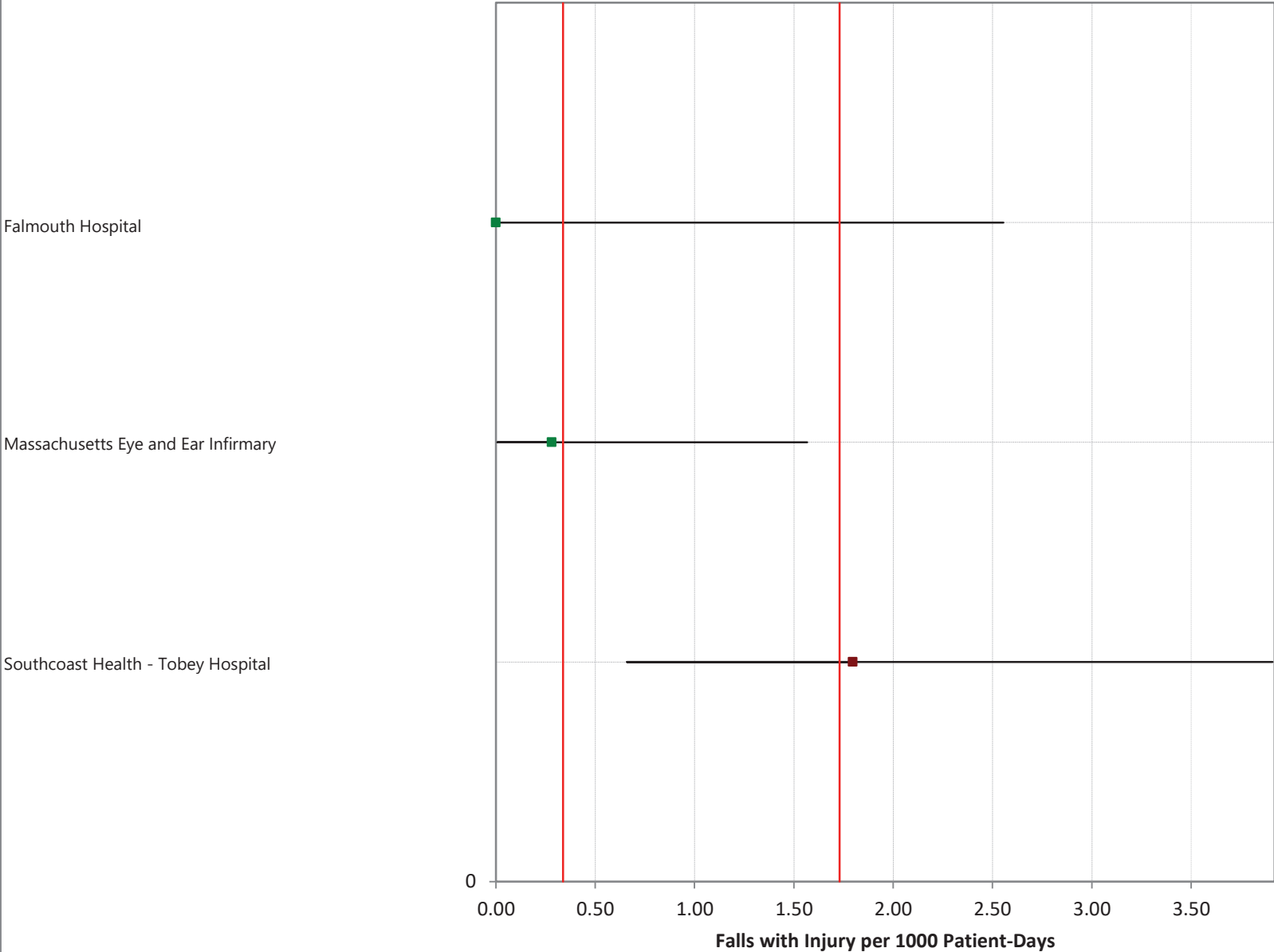
Adult Medical Units, 300-399 beds



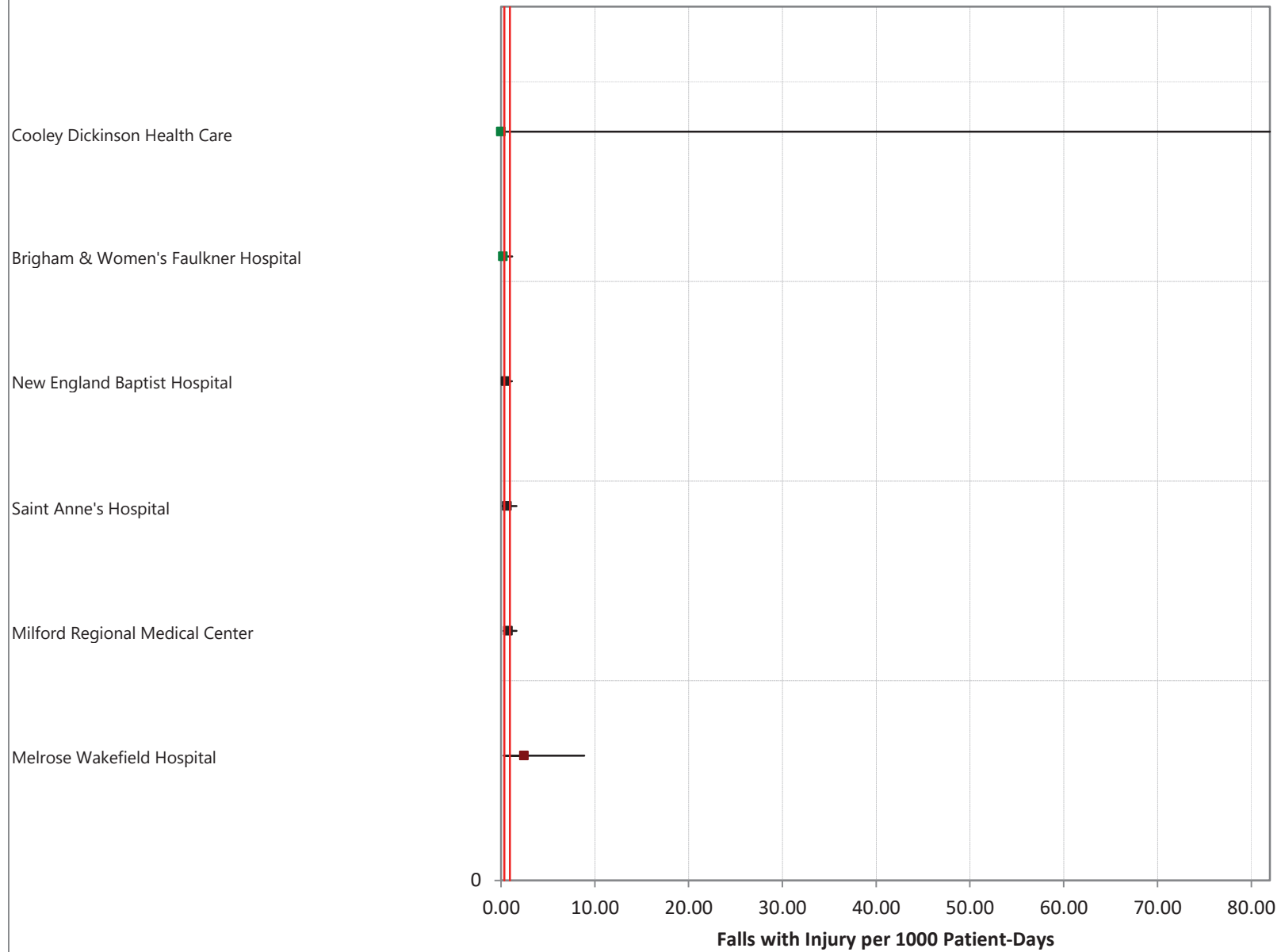
Adult Medical Units, More than 500 beds



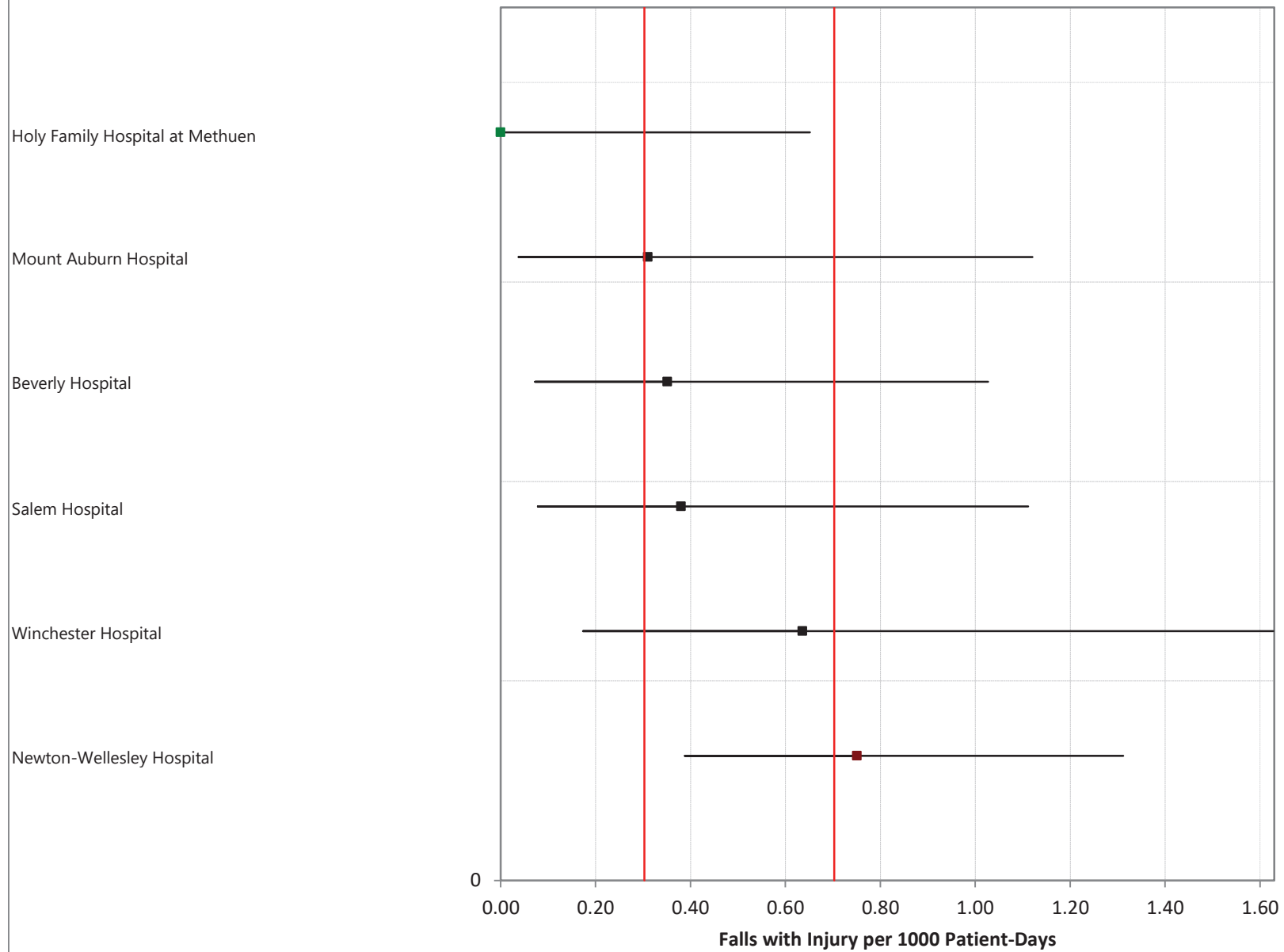
Adult Surgical Units, Less than 100 beds



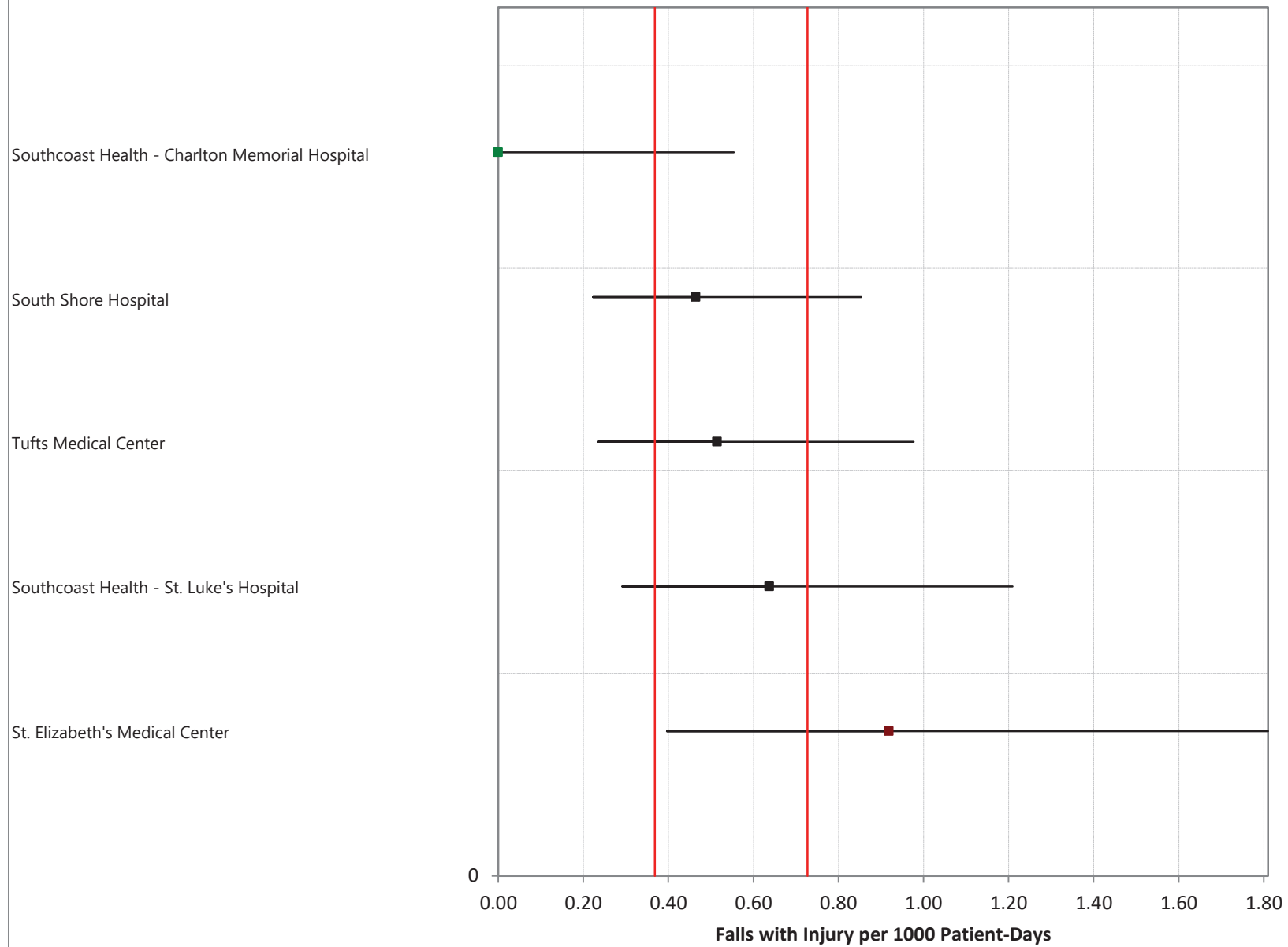
Adult Surgical Units, 100-199 beds



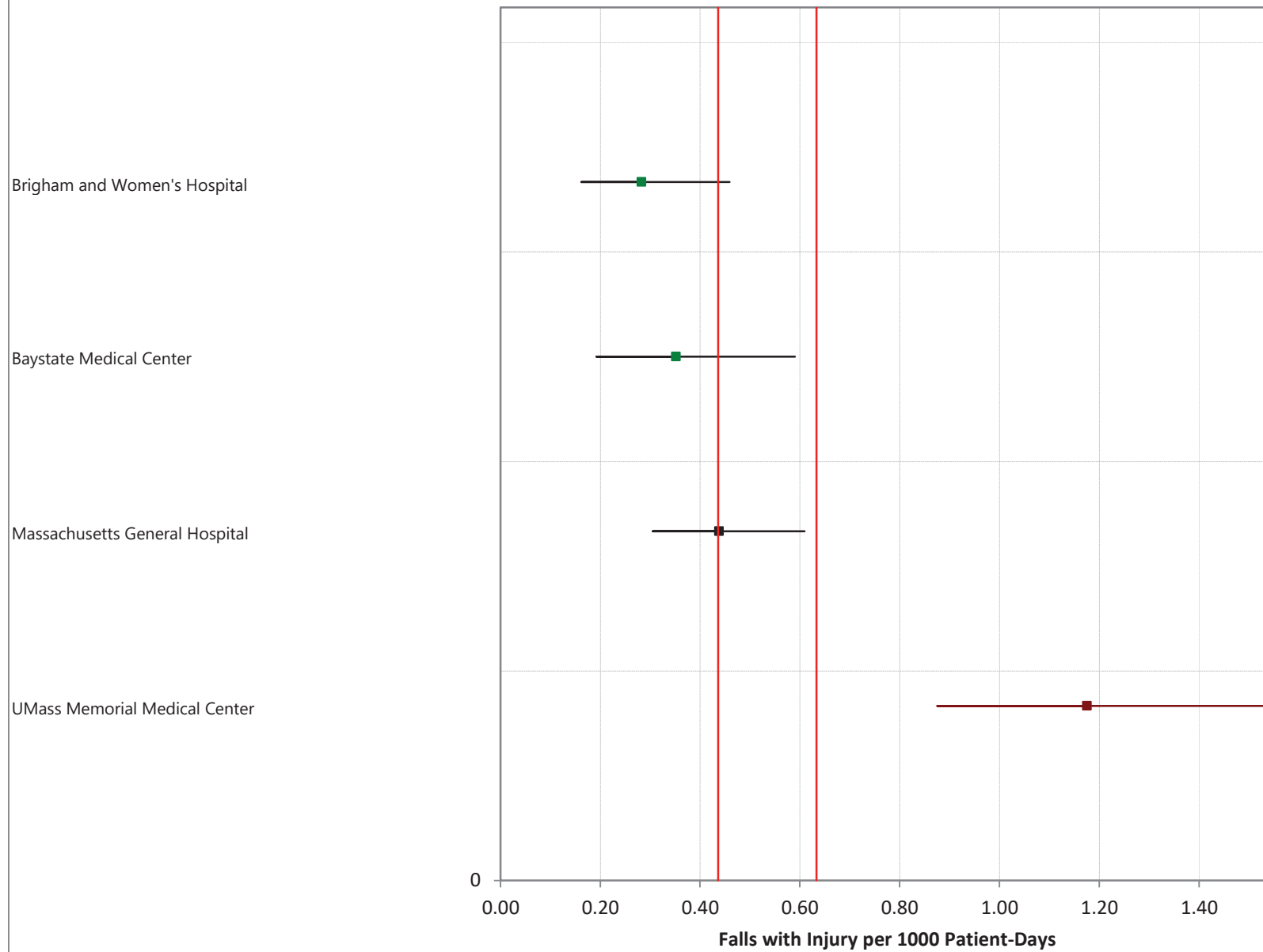
Adult Surgical Units, 200-299 beds



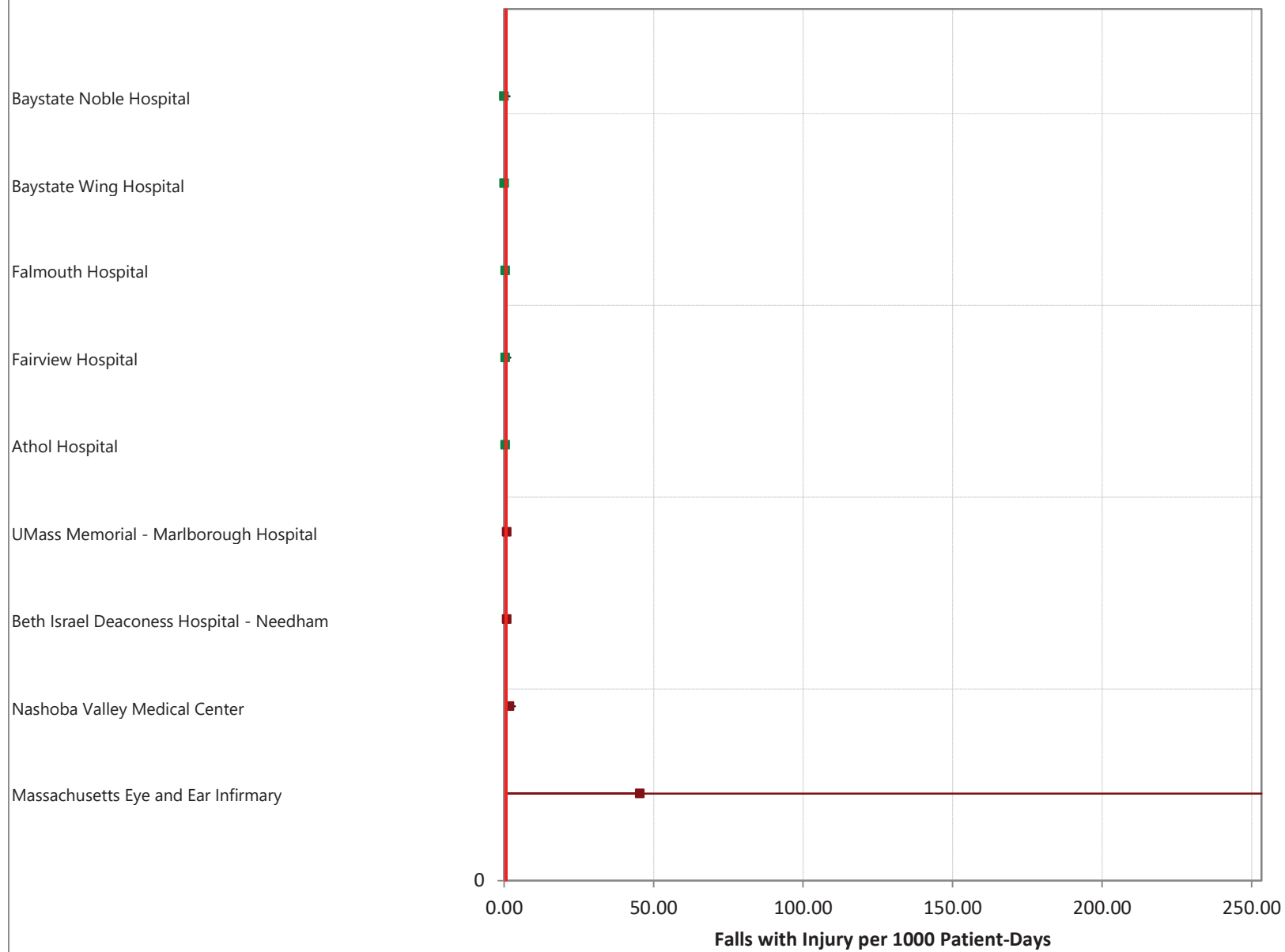
Adult Surgical Units, 300-399 beds



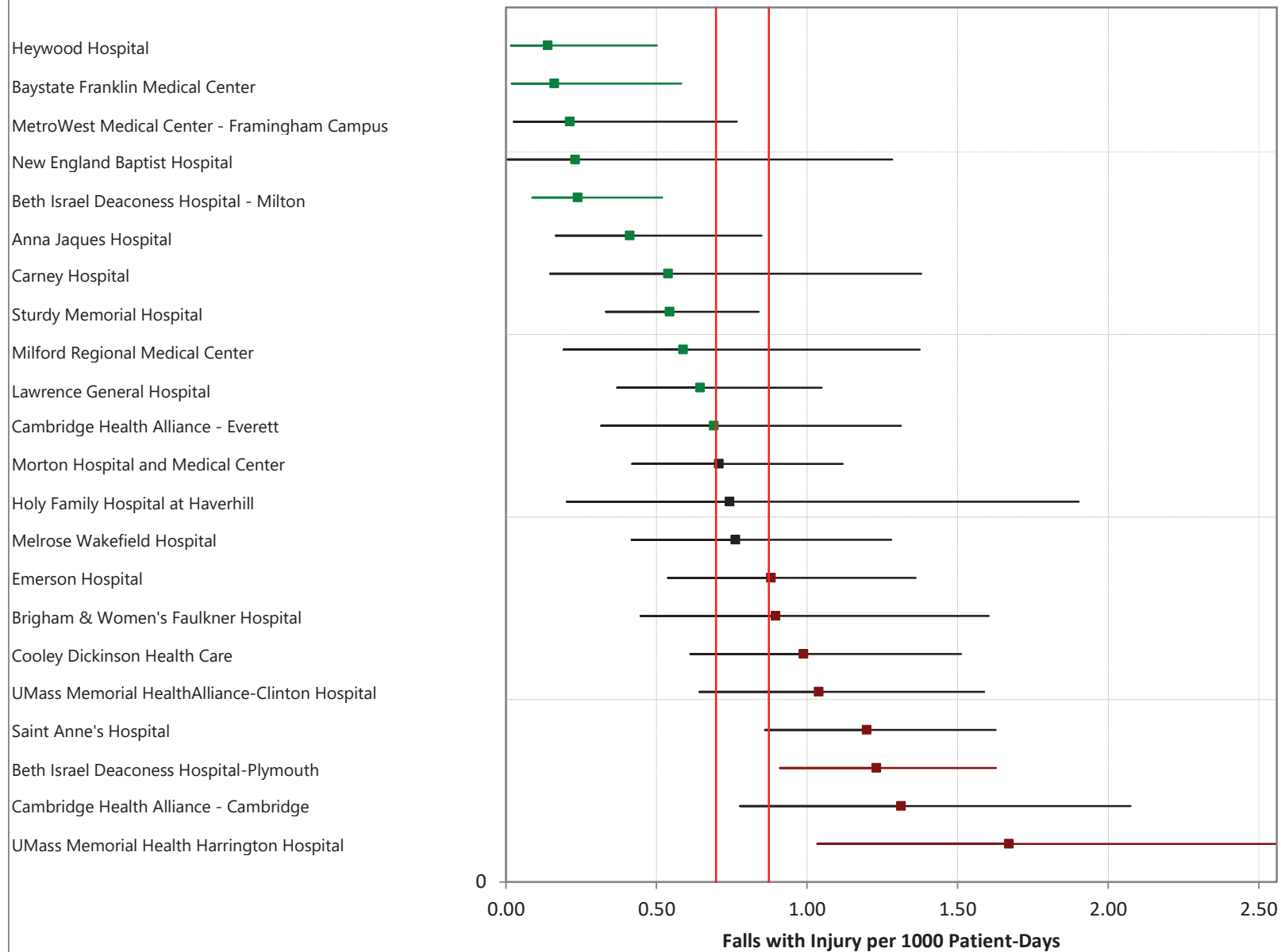
Adult Surgical Units, More than 500 beds



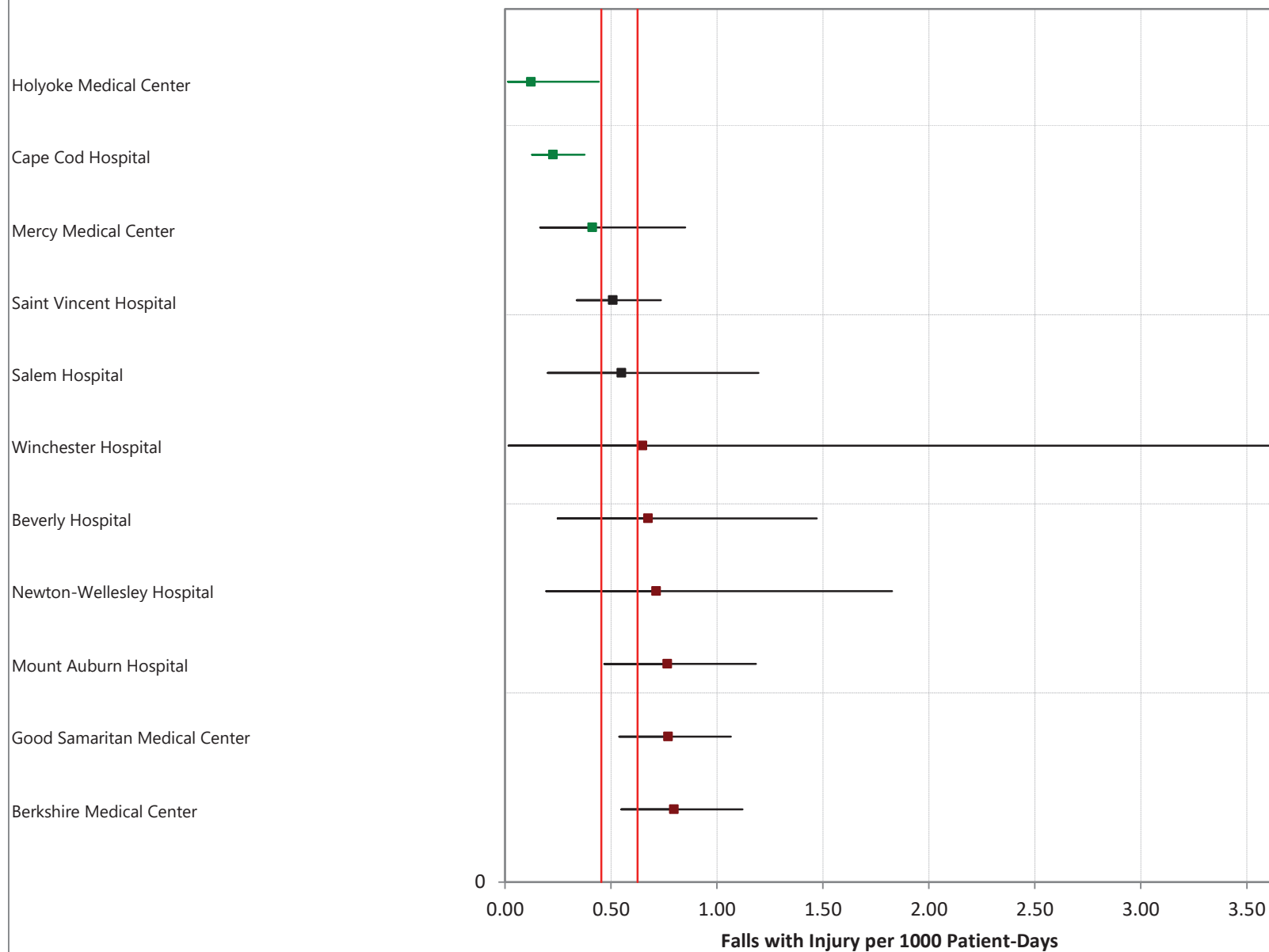
Adult Medical-Surgical Units, Less than 100 beds



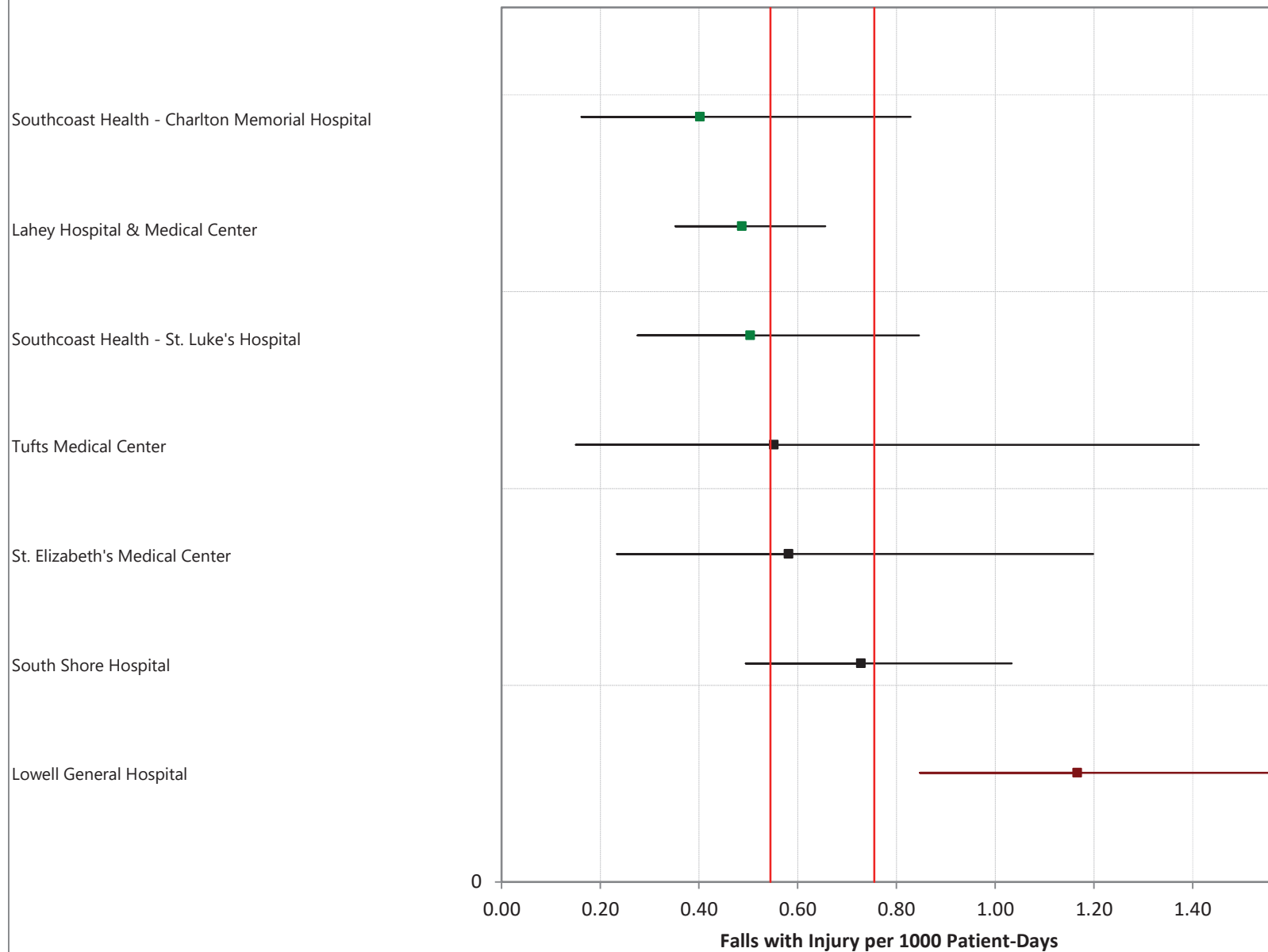
Adult Medical-Surgical Units, 100-199 beds



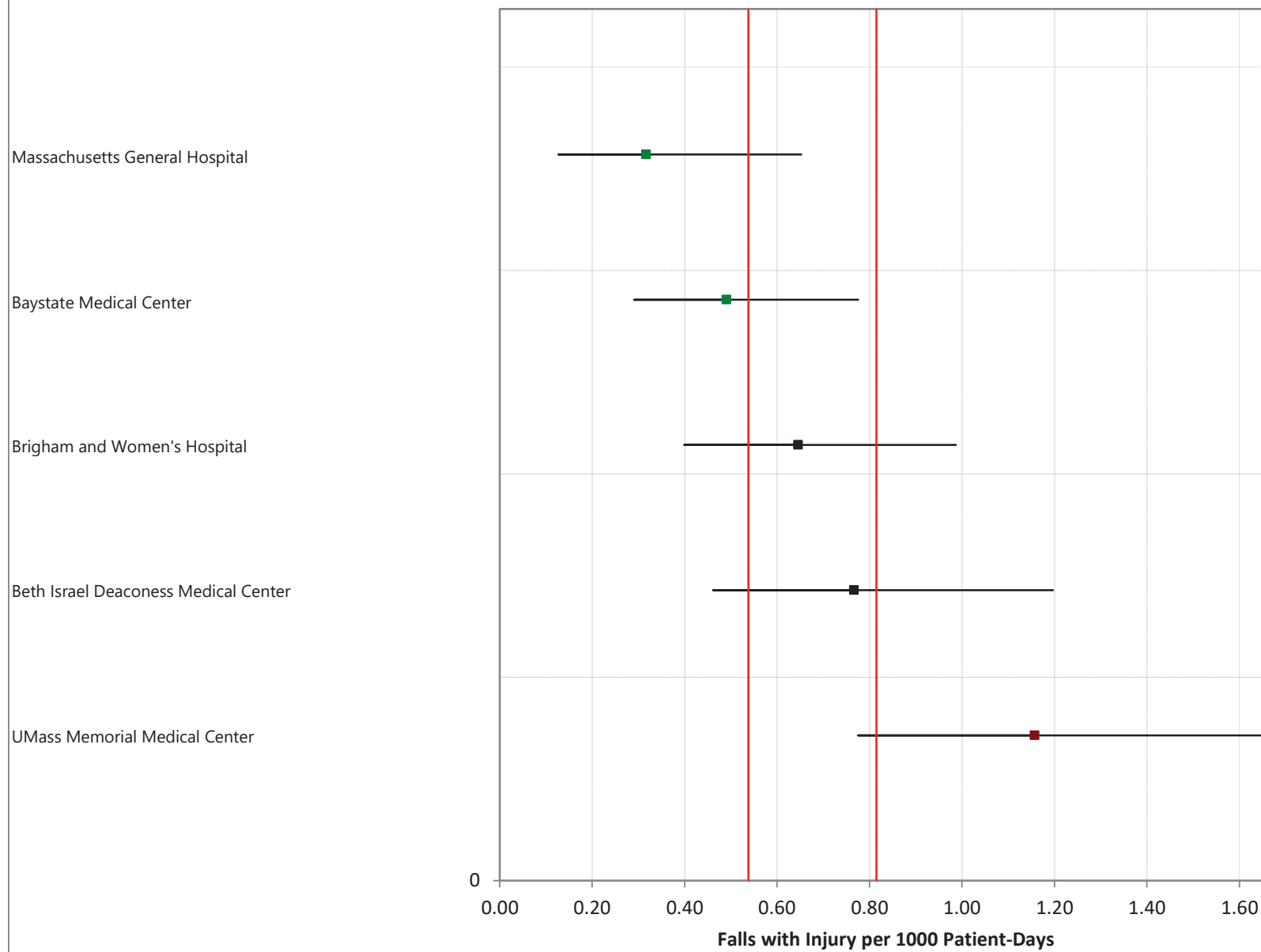
Adult Medical-Surgical Units, 200-299 beds



Adult Medical-Surgical Units, 300-399 beds



Adult Medical-Surgical Units, More than 500 beds



Post-Acute Care Hospitals



NSC-2 Pressure Ulcer Prevalence

December 2022*

March 2023

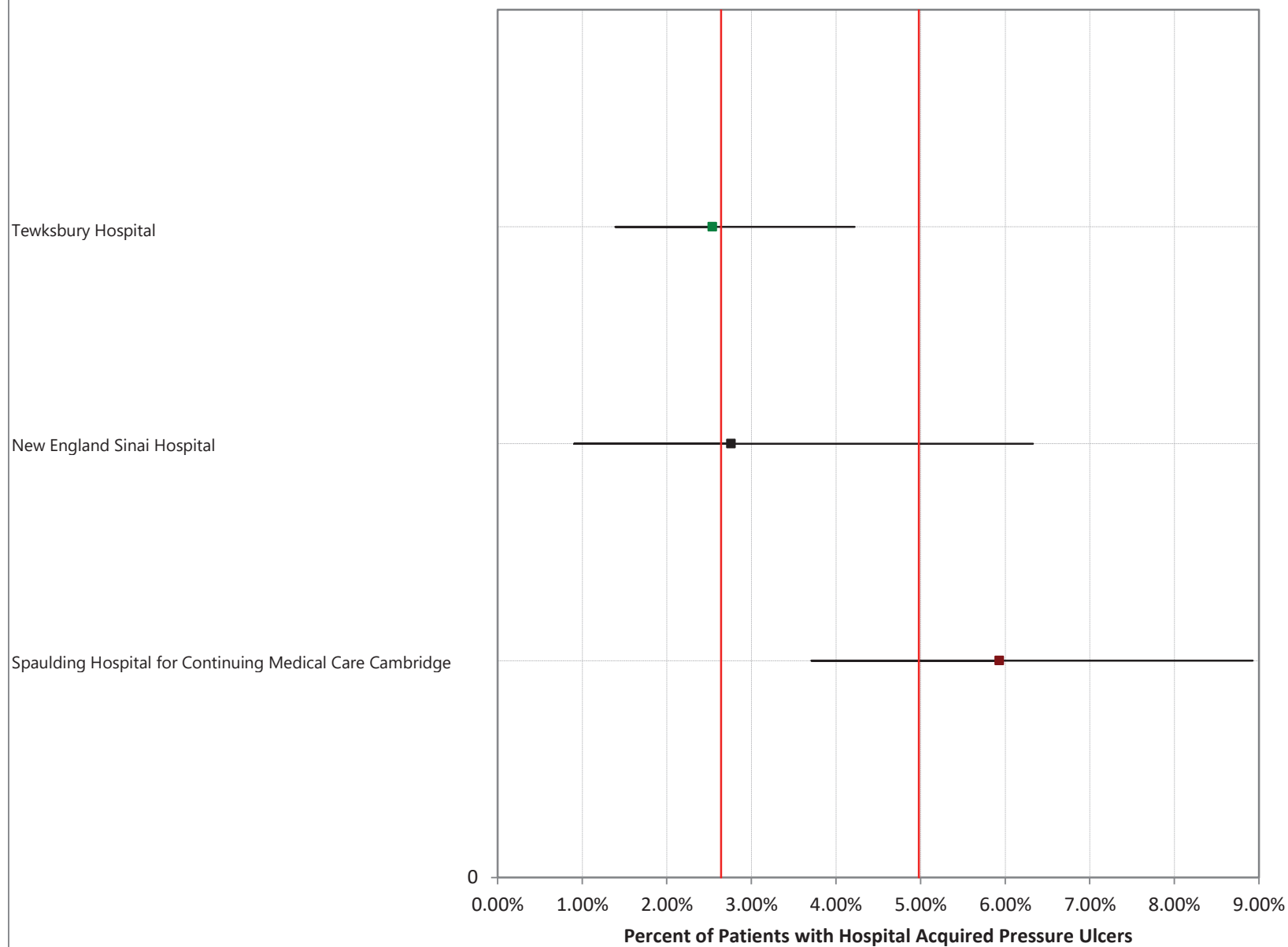
June 2023*

September 2023

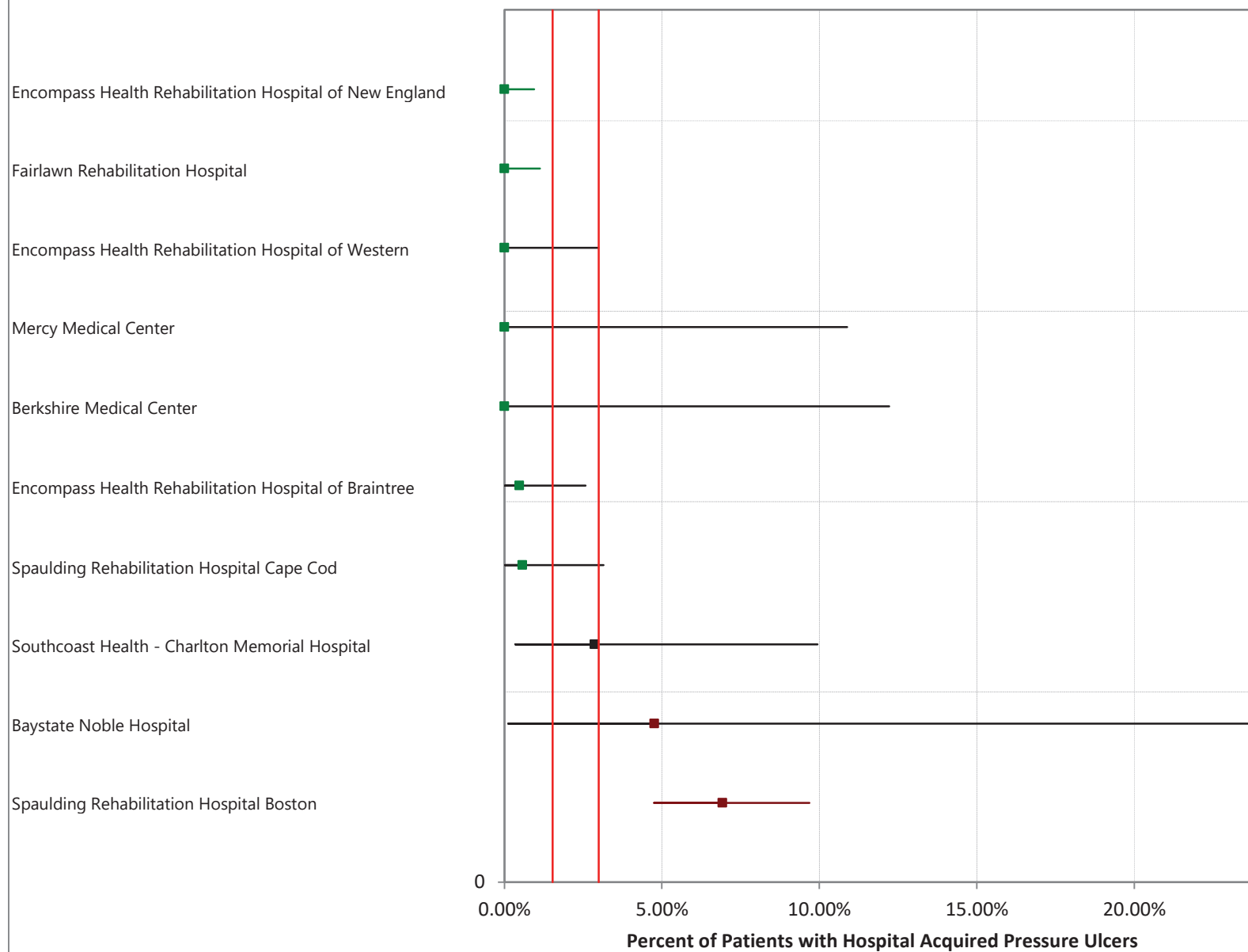
*** Optional studies**

December 2023

Long-Term Acute Care Hospital, Medical Unit



Rehabilitation Hospitals, Rehabilitation Unit



NSC-3 Patient Falls

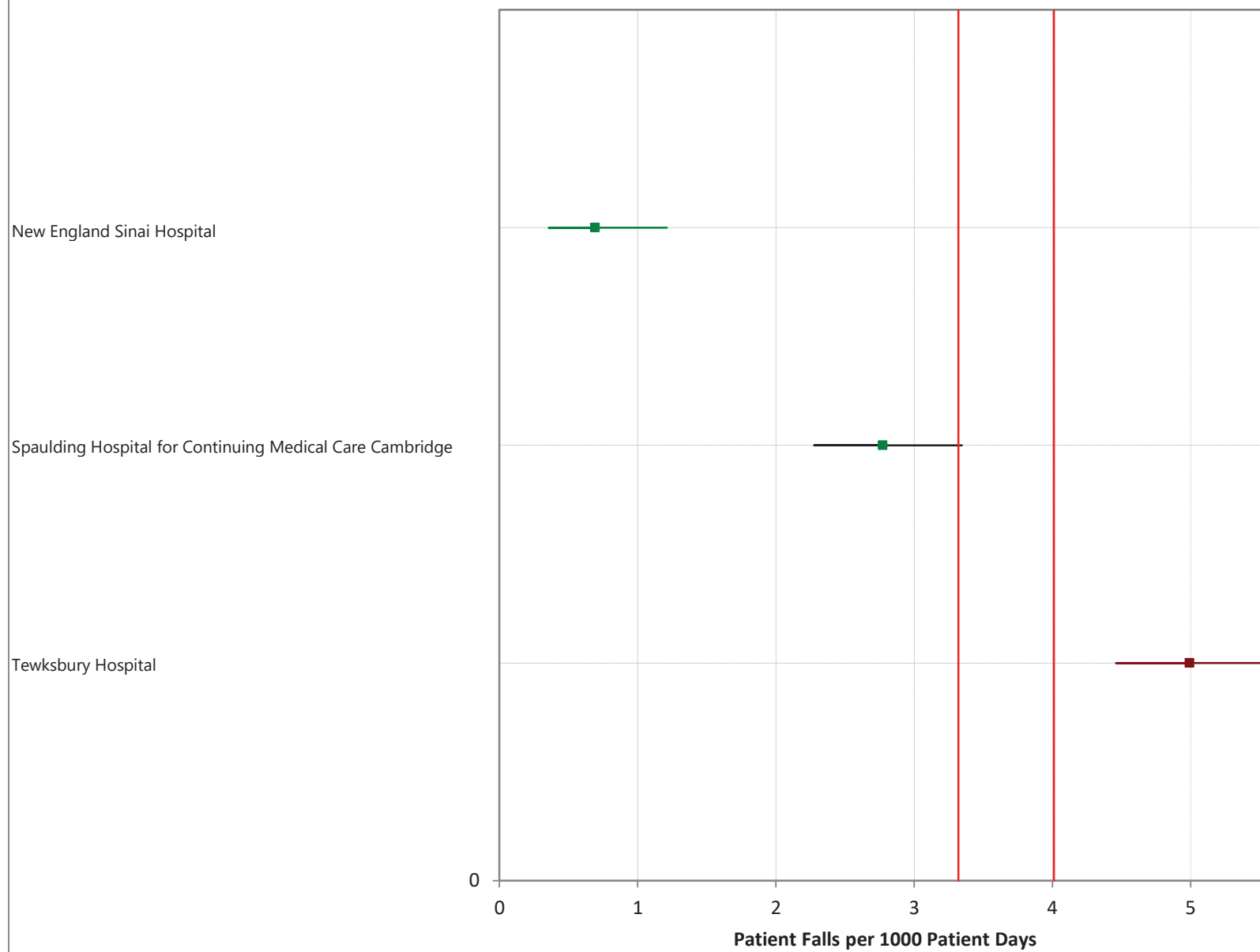
October – December 2022

January – March 2023

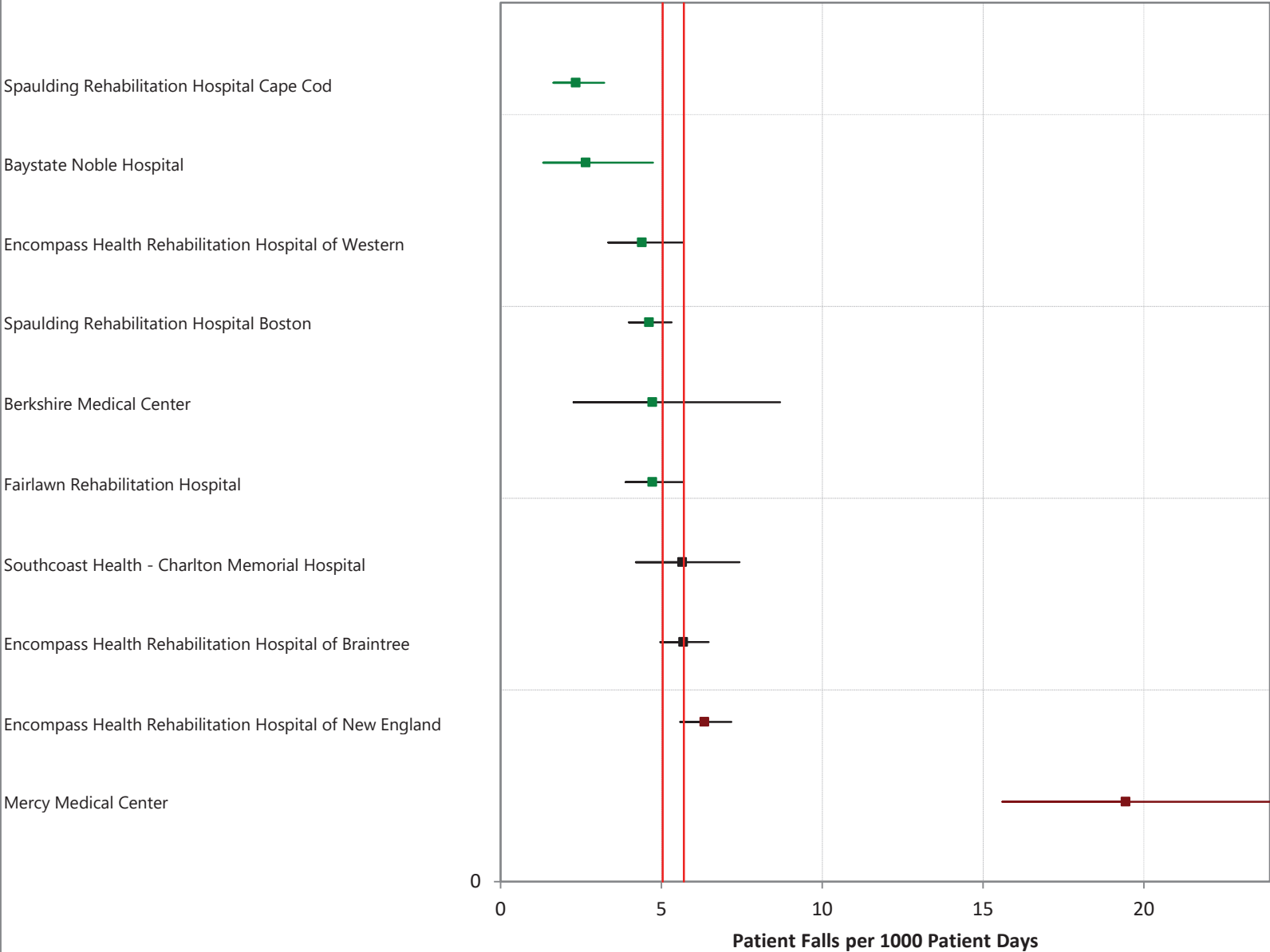
April – June 2023

July – September 2023

Long-Term Acute Care Hospital, Medical Unit



Rehabilitation Hospitals, Rehabilitation Unit



NSC-4 Falls with Injury

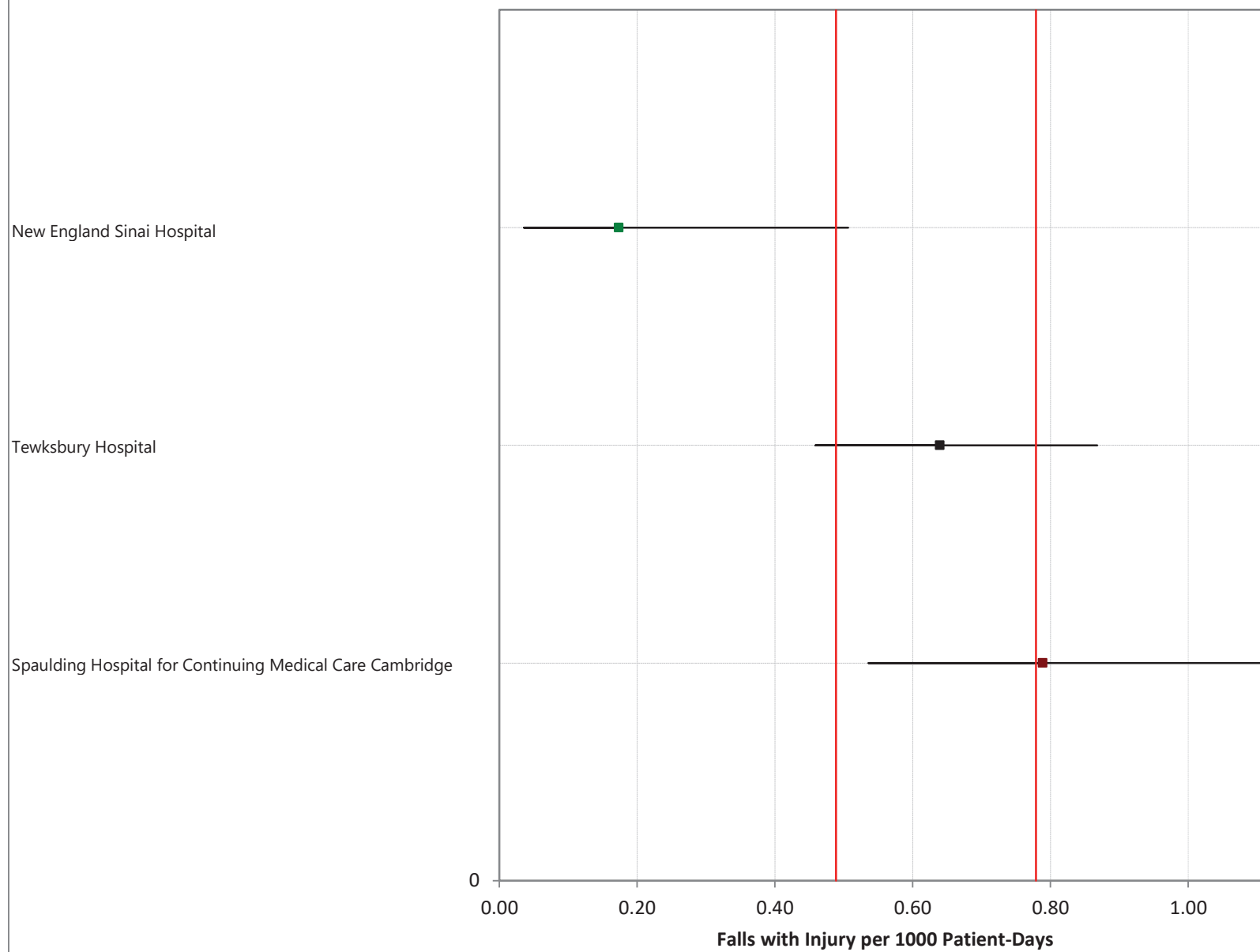
October – December 2022

January – March 2023

April – June 2023

July – September 2023

Long-Term Acute Care Hospital, Medical Unit



Rehabilitation Hospitals, Rehabilitation Unit

