



December 15, 2016

Joseph Martin, Executive Director
Pennsylvania Health Care Cost Containment Council
225 Market Street, Suite 400
Harrisburg, PA 17101

Dear Mr. Martin,

We appreciate having the opportunity to discuss with you and the citizens of Pennsylvania and the surrounding states, the 2014 – 2016q1 PHC4 Open Heart Surgery Report.

The Hospital of the University of Pennsylvania (HUP) is recognized as a world-class quaternary-care academic medical center. Our cardiovascular surgery program is known for its willingness to provide the sickest patients with an opportunity for cutting edge treatment, as well as for its high volume of cases. The program is consistently rated as a top performer not only in the mid-Atlantic region, but across the United States. Penn Medicine (The Hospital of the University of Pennsylvania and Penn Presbyterian Medical Center) ranked #13 in this year's US News and World Report in a comparison of top heart and heart hospitals.

The mission statement for Penn Medicine's Cardiovascular Surgery Program sets the standard for the care and services that are provided and will be the nation's best by:

- Providing state-of-the-art cutting edge critical care surgical therapies with rigorous attention to quality outcomes for the entire spectrum of cardiovascular disease and to provide them to even the sickest of patients.
- Developing and pursuing through the combination of translational and clinical research groundbreaking new surgical techniques, devices, operations and therapies.
- Providing the best graduate and postgraduate training for the next generation of cardiac surgeons, advanced practice professionals, nurses, critical care anesthesiologists, and other professionals who contribute to the care of our patients; and
- Leading the specialty with a national presence, professionalism and integrity.

Penn Medicine participates in the Society for Thoracic Surgery Registry, NCDR registries and UHC / Vizient that allows for comparative benchmarking against other academic medical centers. This participation gives us the capability to assess the acuity and volume of our patient population and compare to those who are similar (academic) and those hospitals and health systems with in the Philadelphia area. In a comparison of the similar time frame of area hospitals Penn Medicine has a higher volume of more complex cases.

During the time period covered by this report, January 2014 through March 2016:

- **Our surgeons performed 3,444 cardiovascular surgery cases at HUP(STS source)**
 - 2,535 of those cases included CABG and/or valve procedures.
 - 361 cases of those were isolated CABG only
 - 643 cases were transferred from other hospitals, and of those-
 - 317 cases (49.3%) came from other hospitals that perform cardiac surgery
- **1326 cases were included in the hospital mortality analysis from PHC4**
 - Of the total 3,444 cases; 2118 cases were excluded from PHC4 report secondary to level of complexity

Below is the CMI for Pennsylvania's CV Surgery programs for the same period as the PHC4 report, January 2014 – March 2016 that was pulled from our benchmarking and comparative capabilities from UHC/ Vizient.

In the state of Pennsylvania, only 4 university hospitals did more than 1,000 cases in the time period covered by this PHC4 report. Of those, HUP did 1,000 more cases than the next highest facility. Of those, our facility has the highest Case Mix Index (CMI) a widely

accepted quantitative measure of patient acuity and complexity. In the same comparative group, the mortality index at HUP indicates that patients had a greater survival rate than expected, reflected by a mortality index less than 1 (HUP .89).

In November 2015, the leadership of the Penn cardiovascular surgery program identified an opportunity for improvement in cardiovascular surgery that resulted in an external review of the program. As a result of that review, clinical leadership, along with a health system wide leadership team, has put together a comprehensive action plan to transform the program to ensure that we continue to deliver the highest level of quality while providing care to the sickest patients. In the ten months since the end of data capture for the PHC4 report, HUP has had two CABG deaths compared to fifteen in the prior twenty five month measurement period. In clinical review of our lead surgeon's cases, half of these cases presented (preoperative) in cardiogenic shock, with ejection fractions of less than 20%, with balloon pumps. This represents the transfer patient population from the other area hospitals that HUP routinely receives.

We appreciate the opportunity to share with you the comprehensive complex cardiovascular surgical program at Penn Medicine. Given the significant volume of our program and that only 10% of our patient population fall into the area that was considered significantly higher than expected for CABG mortality. We would sincerely appreciate your considerations for a foot note that reflects the complexity and depth of care that we provide that has a significant survival rate and we welcome any feedback or opportunity for further discussion.

Sincerely,

A handwritten signature in black ink, appearing to read "P.J. Brennan". The signature is fluid and cursive, with a long horizontal stroke at the end.

PJ Brennan, MD
Chief Medical Officer and Senior Vice President
Penn Medicine