Pennsylvania's Guide to Coronary Artery Bypass Graft Surgery 2003

Information about hospitals and cardiothoracic surgeons

PHC4

Pennsylvania Health Care Cost Containment Council
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Key Findings

- Patient in-hospital mortality and thirty-day mortality following coronary artery bypass graft (CABG) surgery in Pennsylvania hospitals remained steady between 2002 and 2003.
- Readmission rates within seven days following bypass surgery decreased 4.7 percent between 2002 and 2003. Thirty-day readmission rates increased by 5 percent during the same period.
- The top two reasons for patient readmission within 30 days of bypass surgery were infection and heart failure. Readmissions within 30 days for infections amounted to over $16.7 million in hospital charges and over 3,400 hospital days. Readmissions within 30 days for heart failure amounted to over $7.6 million in hospital charges and over 1,700 hospital days.
- Patients with longer post-surgical lengths of stay were more likely to be readmitted within 30 days of CABG surgery.
- The average hospital charge for all CABG surgeries increased by 43 percent from 2000 to 2003, while the average charge for all inpatient discharges increased by 45 percent during the same time period.
- Overall, the number of CABG surgeries decreased by 17 percent from 2000 to 2003, while the number of balloon angioplasty procedures increased by 26 percent during the same time period.
- When examining all open-heart surgeries, the average number of cases per hospital decreased from 408 in 2002 to 390 in 2003 (a decline of 4.4 percent). The average number per surgeon remained relatively the same – about 130 cases per surgeon.
- The risk for CABG patients increased about 4.4 percent from 2000 to 2003 due to the presence of such comorbid conditions as diabetes, obesity, chronic obstructive pulmonary disease, complicated hypertension, etc. The percentage of patients 80 years old and over increased by 12 percent from 2000 to 2003. The in-hospital mortality rate for this age group increased 22 percent during the same time period.
- Surgeons who performed higher numbers of procedures (200-250 procedures) tended to have better results; i.e. lower patient mortality rates. Patients treated by surgeons who performed 200 to 250 surgeries were twice as likely to survive after bypass surgery as patients of surgeons with less than 100 procedures per year.
- In general, patients treated by surgeons with higher volume had shorter post-surgical lengths of stay.

Understanding this Report

What is Coronary Artery Bypass Graft Surgery?

Coronary artery bypass graft (CABG) surgery is a surgical procedure used to treat patients with blockages in the coronary arteries. During the procedure, a surgeon creates an alternate path for blood to flow to the heart muscle by going around, or bypassing, a blocked section of an artery. CABG (pronounced "cabbage") is an invasive surgery that is typically recommended for severe blockages that are not treatable by other methods. The surgeon typically gains access to the heart by cutting the sternum (breast bone). Blood vessels most often are removed from the patient's leg or detached from the chest wall and "grafted" to the blocked artery. Once the grafts have been attached, blood will flow through the new bypass vessel, avoiding the blockage completely.

CABG is performed by a cardiothoracic surgeon under general anesthesia and generally takes between two and six hours depending on the number of bypasses to be completed (patients might have more than one blockage, so several bypasses may be needed). After the procedure is completed, most patients stay in the hospital for several days and face a rehabilitation period of about one to two months.

Why is it important to look at CABG surgery?

CABG surgery is a frequently performed and costly surgery. This report includes information on approximately 15,100 CABG surgeries performed in Pennsylvania hospitals in 2003 at an average charge of over $92,000.

While most CABG patients have an excellent prognosis for survival, results following surgery may vary among hospitals and surgeons. Thus, it is important to monitor the performance of Pennsylvania hospitals and surgeons who perform CABG surgery. There is evidence that the information contained in reports such as this encourages hospitals and surgeons to examine their processes and make changes that can improve quality of care and ultimately save lives.

What is measured in this report and why are these measures important?

This report includes information on the number of surgeries performed, mortality (death) rates during the hospital stay or within 30 days following the surgery, readmission rates within 7 or 30 days, and data on post-surgical lengths of stay. This information is reported for the hospitals and surgeons who performed CABG surgery on adult patients in 2003. In addition, average charge is reported for hospitals. These measures were chosen because they are important components in examining quality of care. Further, they can be reliably measured and compared across hospitals. Other quality of care measures, such as complications following surgery, are important as well, but are more difficult to evaluate.

A particular note is warranted for the 30-day mortality and 30-day readmission measures. While PHC4's Technical Advisory Group voted favorably to include these measures in the report, there were dissenting opinions. It should, therefore, be understood that the inclusion of 30-day mortality and 30-day readmission rates represented the majority, and not the unanimous, vote of the Technical Advisory Group.

Number of cases – This is the number of CABG surgeries analyzed in this report. This figure gives an idea of the experience the hospitals and surgeons have in treating CABG patients. It is important to note, however, that some CABG patients were not counted in this analysis (for example, those that underwent other complex procedures during the same hospital admission as the CABG surgery), so the actual number of cases that a hospital or surgeon treated might be higher.

In-hospital mortality – This measure represents the number of patients who died during the hospital stay in which the CABG surgery was performed.

30-day mortality – This measure represents the number of patients who died within 30 days of the date of their CABG surgery regardless of "where" the patient died. This measure is important because it includes, for example, those patients who may have been discharged from the hospital but died after returning home.

7-day and 30-day hospital readmissions – Some patients are discharged from the hospital following CABG surgery and are then readmitted at a later date. For this analysis, readmissions were counted only if the patient was readmitted for particular reasons (as indicated by the principal diagnosis of the patient during the readmission; examples include infections, other heart-related conditions, etc.). This report examines how often patients were readmitted to a Pennsylvania hospital within 7 days or 30 days of being discharged from the hospital where the CABG surgery was performed. Readmission rates are important from both a quality of care and cost standpoint. While some readmissions will always occur, high quality care may lessen the need for subsequent hospitalizations.

Information on both 7-day and 30-day readmissions is reported because the reasons for readmission may vary across these time periods. 7-day readmissions account for those readmissions that are closer in time to the initial hospitalization and may be more directly tied to the CABG surgery. At the same time, particular complications may occur after the first 7 days, so adding 30-day readmission rates provides a more complete picture. While much of the scientific literature has focused primarily on 30-day readmission rates, readmissions this far away from the discharge may or may not reflect the care a patient received during the CABG surgery (e.g., a health complication unrelated to the surgery could have developed within the 30 days and necessitated hospitalization).

Post-surgical length of stay – This measure represents how long a patient stayed in the hospital after undergoing CABG surgery. How long a patient stays in the hospital may reflect upon the success of the treatment. While complications following surgery were not examined for this report, other analysis has shown that complications following CABG surgery add to the length of time a patient stays in the hospital. At the same time, it is important to note that various approaches to CABG surgery might affect length of stay. For example hospitals that perform an "off-pump" approach to CABG surgery might have different lengths of stay than the hospitals that do not use this approach. Length of stay is reported in average days instead of a statistical rating that indicates whether the length of stay was significantly longer or shorter than expected. Unlike other measures (such as mortality where a lower number of deaths is obviously better than a higher number), it is not clear whether shorter lengths of stay are better than longer lengths of stay or vice versa. Reporting the average length of stay in days, therefore, presents information that can be used to examine differences in lengths of stay without taking a position on what is "best."

Hospital charges – The amount a hospital bills for a patient's care is known as the charge. The charges do not include professional fees (e.g., physician fees) or other additional post-discharge costs, such as rehabilitation treatment, long term care and/or home health care. Hospitals generally do not receive full reimbursement of their charges because insurance companies or other large purchasers of health care services generally negotiate discounts with hospitals. The amount collected by the hospital, therefore, may differ substantially from the charge. Hospital charges often vary by regions of

the state. Despite their limitations, charges are a commonly reported surrogate for health care costs.

Uses of the report

This report can be used as a tool to examine hospital and surgeon performance for CABG surgery. It is not intended to be a sole source of information in making decisions about CABG surgery, nor should it be used to generalize about the overall quality of care provided by a hospital or a surgeon. Readers of this report should use it in discussions with their physicians who can answer specific questions and concerns about CABG surgery.

- **Patients/consumers** can use this report to aid in making decisions about where and with whom to seek treatment involving CABG surgery. This report should be used in conjunction with a physician or other health care provider when making decisions about CABG surgery.
- **Group benefits purchasers/ insurers** can use this report as part of a process in determining which hospitals and surgeons provide quality care for employees, subscribers, members, or participants who need CABG surgery.
- **Health care providers** can use this report as an aid in identifying opportunities for quality improvement and cost containment.
- **Policy makers/public officials** can use this report to enhance their understanding of health care issues, to ask insightful questions, to raise public awareness of important issues and to help constituents identify quality health care options.
- **Everyone** can use this information to raise important questions about why differences exist in the quality and efficiency of care.

Where does the data come from?

Pennsylvania hospitals are required by law to submit certain information to PHC4. With the exception of the 30-day mortality measure, the data used for this report was submitted to PHC4 by hospitals in Pennsylvania that perform CABG surgery. It encompasses inpatient hospital discharges from January 1, 2003 to December 31, 2003 in which the patient underwent CABG surgery. The data submitted to PHC4 by the hospitals was subject to verification processes and was verified for accuracy by the hospitals and surgeons.

Data used to analyze the 30-day mortality measure was obtained by the Pennsylvania Department of Health.

Accounting for high-risk patients

Some patients who undergo CABG surgery are more seriously ill than others. Hospitals are required to submit data to PHC4 indicating in simple terms "how sick the patient was on admission." This information is used to make sure that differences in the illness level of patients are accounted for when reporting information on CABG surgery.

In order to report fair comparisons among hospitals and surgeons, PHC4 developed a complex mathematical formula to "risk-adjust" the data, meaning that hospitals and surgeons receive "extra credit" for operating on patients that are more seriously ill or at a greater risk than others. Risk-adjusting the data is important because sicker patients might be more likely to die following CABG surgery, be readmitted, or stay in the hospital longer. A comprehensive description of how these adjustments are made can be found in the Technical Notes document that accompanies this report. It can be found on PHC4's Web site at www.phc4.org.

What do the symbols mean?

The symbols in this report represent the "bottom line" results of hospitals and surgeons who performed CABG surgery. A statistical test is done to determine whether differences in the results are simply due to chance or random variation. A difference is called "statistically significant" when we are 95 percent confident that the difference is not likely to result from chance or random variation. Using in-hospital mortality as an example:

- ○ lower than expected (meaning that the hospital or surgeon had fewer deaths than expected after accounting for how sick the patients were in that hospital)
- ◉ same as expected (meaning that the hospital or surgeon had as many deaths as expected after accounting for how sick the patients were in that hospital)
- ● higher than expected (meaning that the hospital or surgeon had more deaths than expected after accounting for how sick the patients were in that hospital)

Statewide Figures for CABG Surgery

Number of CABG procedures	15,117
In-hospital mortality rate	2.0%
30-day mortality rate	2.4%
7-day readmission rate	5.3%
30-day readmission rate	13.7%
Average post-surgical length of stay	5.9 days
Average hospital charge	$92,242

Acknowledgements

PHC4 wishes to acknowledge and thank the Pennsylvania hospitals and surgeons who participated in the data collection and verification process used for this report.

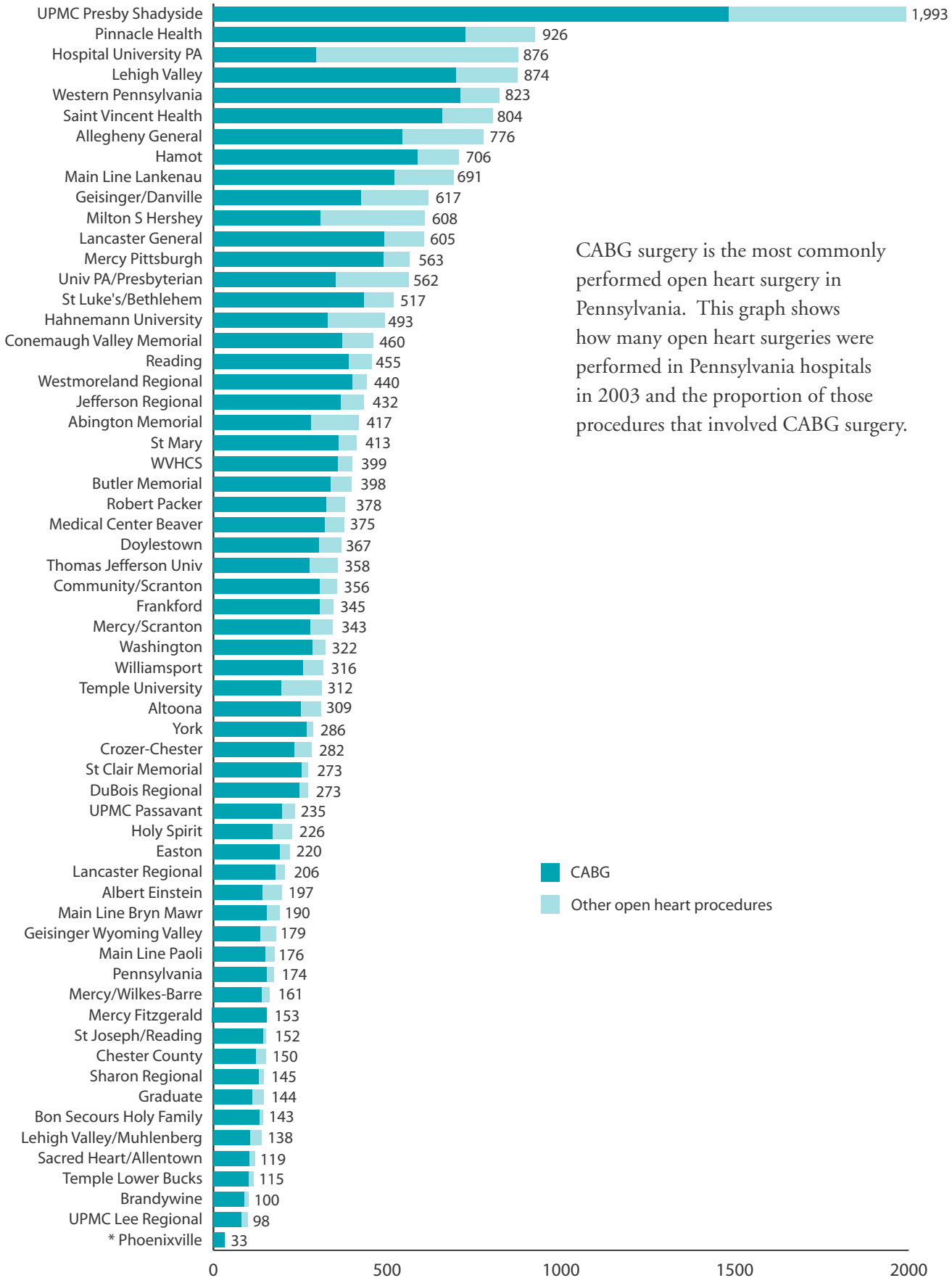
PHC4 also thanks the Pennsylvania Department of Health for supplying information used in the 30-day mortality measure.

More Data on PHC4's Web Site

Additional information is posted on the PHC4 Web site at www.phc4.org:

- **Numbers behind the outcome figures and symbols**
- **Technical Notes**

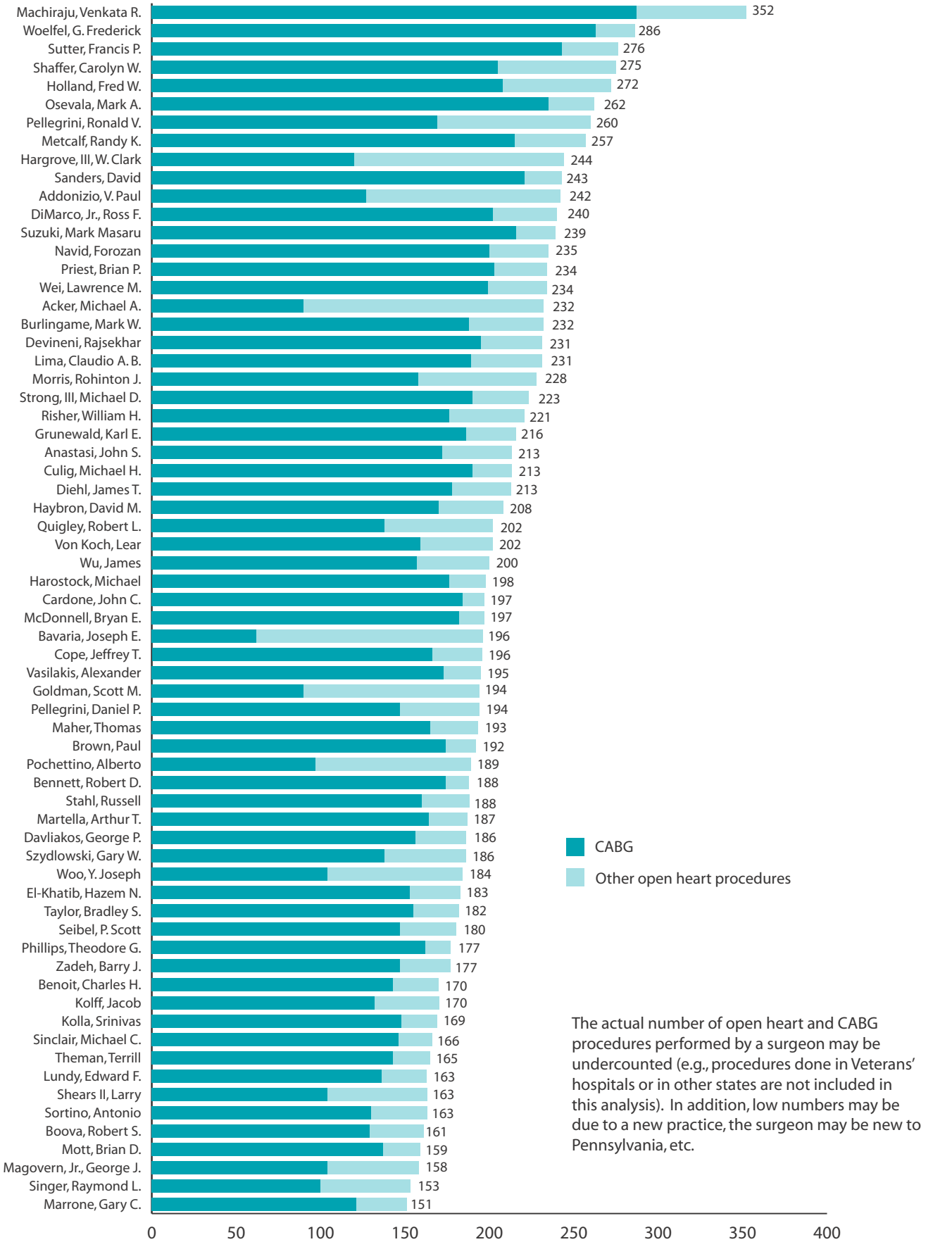
Total Number of Open Heart and CABG Procedures by Hospital - 2003



CABG surgery is the most commonly performed open heart surgery in Pennsylvania. This graph shows how many open heart surgeries were performed in Pennsylvania hospitals in 2003 and the proportion of those procedures that involved CABG surgery.

* Began performing CABG surgery during 2003.

Total Number of Open Heart and CABG Procedures by Surgeon - 2003



The actual number of open heart and CABG procedures performed by a surgeon may be undercounted (e.g., procedures done in Veterans' hospitals or in other states are not included in this analysis). In addition, low numbers may be due to a new practice, the surgeon may be new to Pennsylvania, etc.

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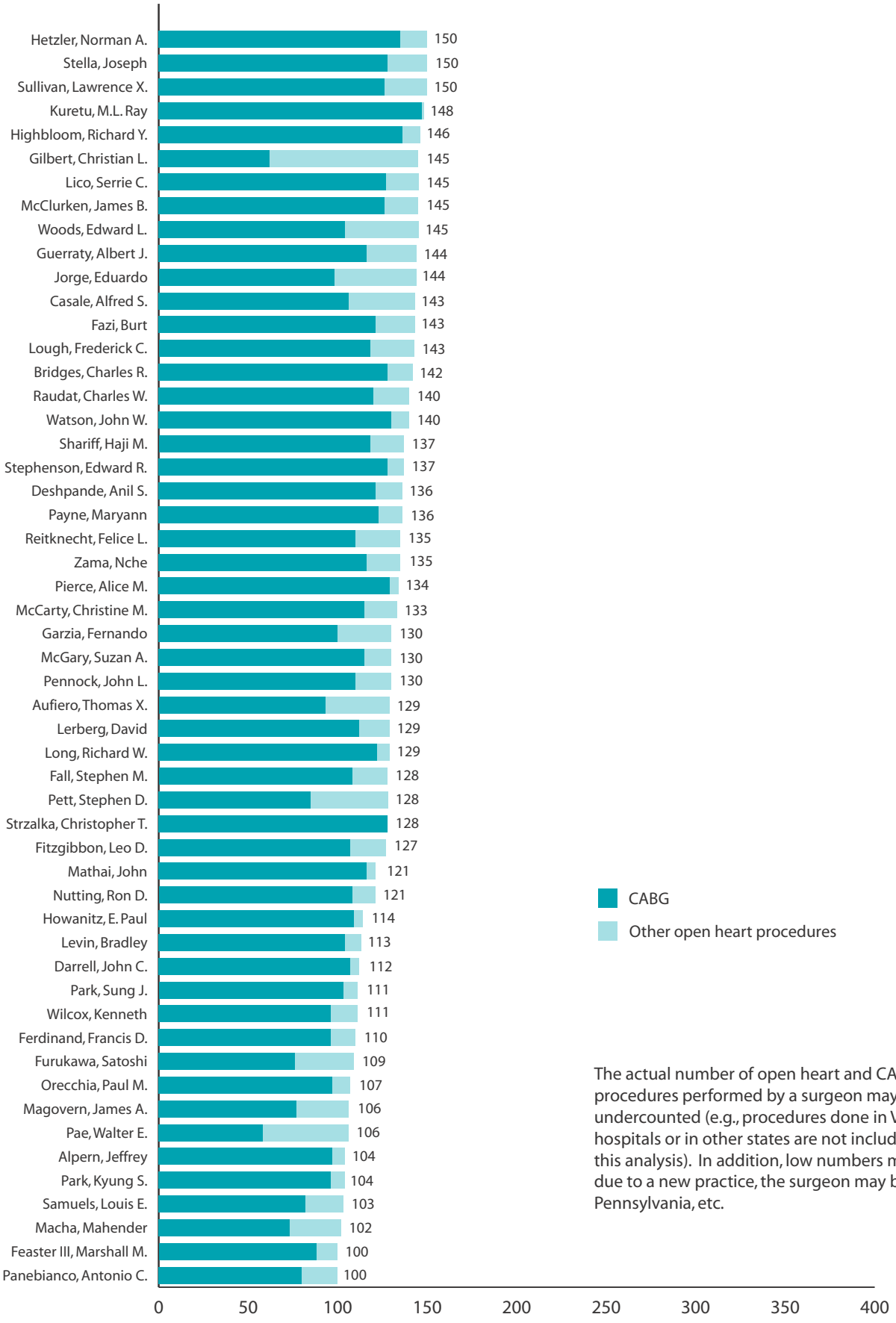
Total Number of Open Heart and CABG Procedures by Surgeon - 2003



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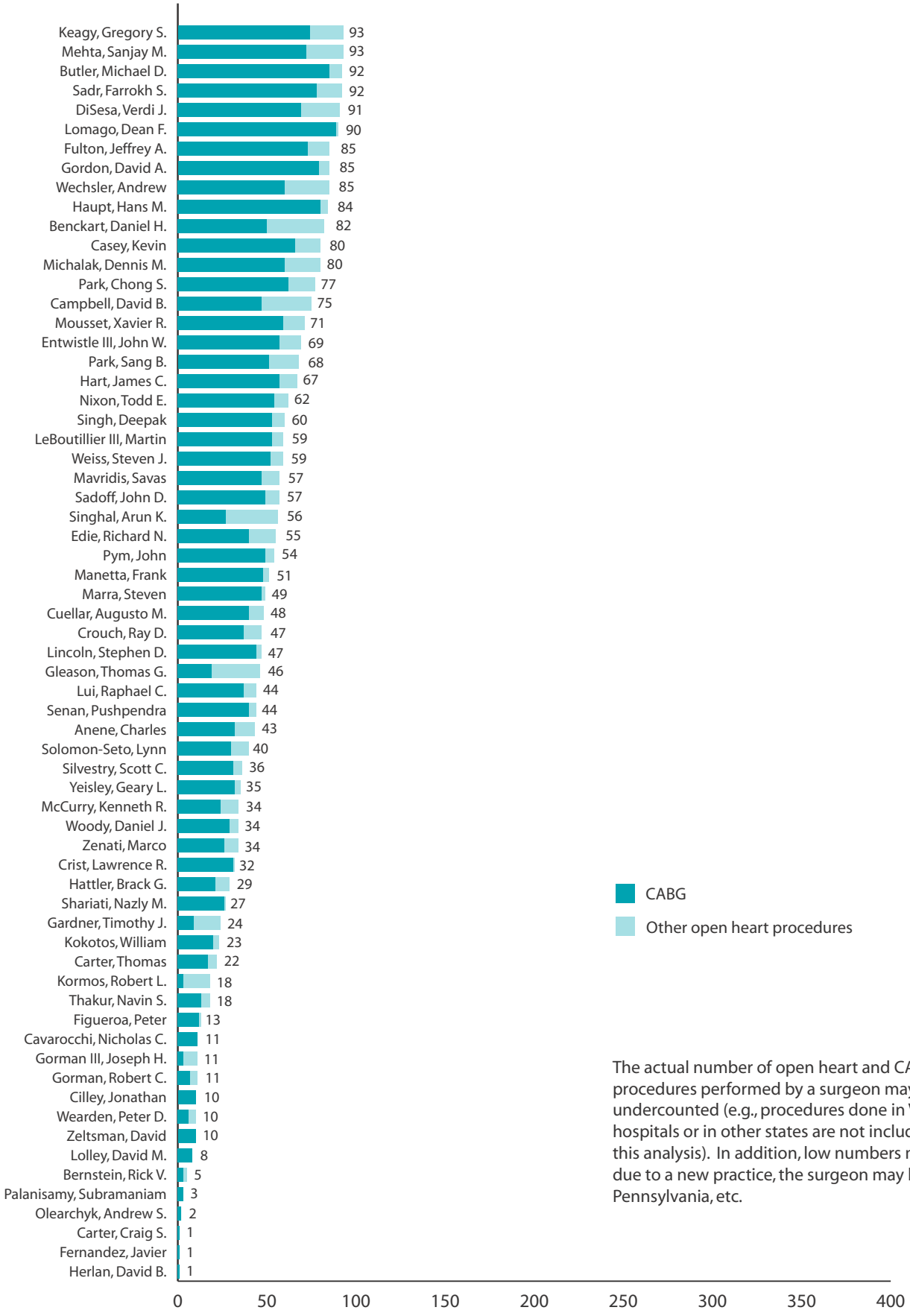
Total Number of Open Heart and CABG Procedures by Surgeon - 2003



The actual number of open heart and CABG procedures performed by a surgeon may be undercounted (e.g., procedures done in Veterans' hospitals or in other states are not included in this analysis). In addition, low numbers may be due to a new practice, the surgeon may be new to Pennsylvania, etc.

Hospital Data

Hospital	Number of Cases	Mortality		Readmissions		Length of Stay	Average Charges
		In-Hospital	30-Day	7-Day	30-Day		
Abington Memorial	220	⊙	⊙	⊙	⊙	7.2	$198,516
Albert Einstein	133	⊙	⊙	⊙	⊙	6.0	$138,891
Allegheny General	413	⊙	○	⊙	⊙	7.2	$74,227
Altoona	185	⊙	⊙	⊙	⊙	4.8	$51,181
Bon Secours Holy Family	109	⊙	⊙	⊙	⊙	5.5	$51,073
Brandywine	70	⊙	⊙	⊙	⊙	6.6	$191,416
Butler Memorial	270	⊙	⊙	⊙	⊙	6.3	$40,491
Chester County	95	⊙	⊙	⊙	⊙	5.7	$64,836
Community/Scranton	228	⊙	⊙	⊙	⊙	5.8	$64,429
Conemaugh Valley Memorial	283	⊙	⊙	⊙	⊙	4.9	$58,096
Crozer-Chester	196	⊙	⊙	⊙	⊙	5.6	$178,599
Doylestown	240	⊙	⊙	⊙	⊙	5.3	$73,729
DuBois Regional	204	⊙	●	⊙	●	4.4	$52,205
Easton	155	⊙	⊙	⊙	⊙	5.8	$163,697
Frankford	260	⊙	⊙	⊙	●	6.3	$97,455
Geisinger Wyoming Valley	105	⊙	⊙	⊙	○	5.2	$65,633
Geisinger/Danville	328	⊙	⊙	⊙	⊙	4.9	$71,375
Graduate	95	⊙	NR	NR	NR	5.4	$222,511
Hahnemann University	265	⊙	⊙	⊙	⊙	8.0	$265,193
Hamot	499	⊙	⊙	⊙	⊙	5.8	$59,236
Holy Spirit	144	⊙	⊙	⊙	⊙	5.7	$58,652
Hospital University PA	151	⊙	⊙	⊙	⊙	5.6	$144,780
Jefferson Regional	273	⊙	⊙	⊙	⊙	6.3	$38,895
Lancaster General	347	⊙	⊙	⊙	⊙	5.4	$44,928
Lancaster Regional	127	⊙	⊙	⊙	●	6.8	$86,440
Lehigh Valley	561	○	○	○	○	5.6	$95,377
Lehigh Valley/Muhlenberg	94	⊙	⊙	⊙	⊙	3.5	$88,712
Main Line Bryn Mawr	122	⊙	⊙	●	⊙	5.5	$109,286
Main Line Lankenau	429	⊙	⊙	⊙	⊙	6.1	$107,526
Main Line Paoli	127	⊙	⊙	⊙	○	5.8	$116,028
Medical Center Beaver	282	⊙	⊙	⊙	⊙	5.6	$48,219
Medical College PA *	44	⊙	⊙	⊙	⊙	5.2	$178,167

* Closed in 2004.

The mortality, length of stay, and readmission figures account for varying illness levels among patients. Length of stay is the average number of days spent in the hospital following CABG surgery.

○ Lower than expected
⊙ Same as expected
● Higher than expected
NR Not rated (too few cases)

Hospital Data

Hospital	Number of Cases	Mortality		Readmissions		Length of Stay	Average Charges
		In-Hospital	30-Day	7-Day	30-Day		
Mercy Fitzgerald	135	⊙	⊙	⊙	●	6.9	$197,096
Mercy Pittsburgh	399	⊙	⊙	⊙	⊙	7.3	$77,813
Mercy/Scranton	211	⊙	⊙	⊙	⊙	6.0	$70,038
Mercy/Wilkes-Barre	123	⊙	⊙	⊙	⊙	4.9	$79,384
Milton S Hershey	224	⊙	⊙	⊙	○	5.4	$46,762
Pennsylvania	122	⊙	⊙	⊙	⊙	6.9	$133,993
Phoenixville *	31	⊙	⊙	⊙	⊙	5.7	$118,851
Pinnacle Health	583	●	●	⊙	⊙	6.3	$62,231
Reading	324	⊙	●	○	○	6.1	$56,895
Robert Packer	273	●	⊙	⊙	●	5.1	$38,687
Sacred Heart/Allentown	80	⊙	⊙	⊙	⊙	5.7	$83,425
Saint Vincent Health	567	⊙	⊙	●	●	4.4	$113,323
Sharon Regional	118	⊙	⊙	⊙	⊙	6.4	$56,693
St Clair Memorial	218	⊙	⊙	⊙	⊙	6.0	$45,930
St Joseph/Reading	130	⊙	⊙	⊙	⊙	6.3	$63,929
St Luke's/Bethlehem	332	⊙	⊙	⊙	⊙	5.8	$82,175
St Mary	312	⊙	⊙	⊙	⊙	6.2	$82,284
Temple Lower Bucks	84	⊙	●	⊙	⊙	7.3	$179,381
Temple University	167	⊙	⊙	⊙	⊙	7.9	$369,069
Thomas Jefferson Univ	226	⊙	⊙	●	●	6.9	$153,366
Univ PA/Presbyterian	239	⊙	⊙	⊙	⊙	6.4	$106,433
UPMC Lee Regional	74	⊙	⊙	⊙	⊙	4.7	$51,559
UPMC Passavant	165	⊙	⊙	⊙	⊙	6.2	$71,149
UPMC Presby Shadyside	1,073	⊙	⊙	⊙	⊙	6.1	$120,780
Washington	213	⊙	⊙	⊙	⊙	6.4	$65,797
Western Pennsylvania	559	⊙	⊙	⊙	⊙	5.7	$83,948
Westmoreland Regional	348	⊙	⊙	⊙	⊙	5.2	$41,002
Williamsport	199	⊙	⊙	⊙	⊙	5.1	$60,625
WVHCS	292	⊙	⊙	⊙	⊙	6.3	$43,780
York	242	●	●	⊙	○	6.3	$50,571
Statewide	15,117					5.9	$92,242

* Began performing CABG surgery during 2003.

The mortality, length of stay, and readmission figures account for varying illness levels among patients. Length of stay is the average number of days spent in the hospital following CABG surgery.

○ Lower than expected
⊙ Same as expected
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NR Not rated (too few cases)

Surgeon Data

Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Acker, Michael A.*	36	⊙	NR	NR	NR	6.9
Addonizio, V. Paul						
Abington Memorial	87	⊙	⊙	⊙	⊙	7.8
Alpern, Jeffrey						
St Luke's/Bethlehem	92	⊙	⊙	⊙	⊙	5.1
Anastasi, John S.*	121	⊙	⊙	⊙	⊙	4.7
Altoona	96	⊙	⊙	⊙	⊙	4.7
Aufiero, Thomas X.						
Williamsport	61	⊙	⊙	⊙	⊙	5.0
Benckart, Daniel H.						
Allegheny General	43	⊙	⊙	⊙	⊙	6.1
Bennett, Robert D.*	134	⊙	⊙	⊙	⊙	6.7
UPMC Presby Shadyside	64	⊙	⊙	⊙	⊙	7.0
Western Pennsylvania	53	⊙	⊙	⊙	●	6.5
Benoit, Charles H.*	110	⊙	⊙	⊙	⊙	4.9
Geisinger/Danville	104	⊙	⊙	⊙	⊙	4.8
Boova, Robert S.*	102	⊙	⊙	⊙	⊙	5.3
Main Line Bryn Mawr	101	⊙	⊙	⊙	⊙	5.3
Bridges, Charles R.*	104	⊙	⊙	⊙	⊙	7.1
Pennsylvania	102	⊙	⊙	⊙	⊙	7.0
Brown, Paul						
Saint Vincent Health	168	⊙	⊙	⊙	⊙	4.8
Burlingame, Mark W.*	108	⊙	⊙	⊙	⊙	5.3
Lancaster General	100	⊙	⊙	⊙	⊙	5.2

* Had cases at multiple hospitals. Only those hospitals in which the surgeon performed 30 or more cases are listed here. Additional information can be found at www.phc4.org.

Surgeons may have had more cases than reported here. See pages 7-9 for total figures on open heart and CABG procedures.

The mortality, length of stay, and readmission figures account for varying illness levels among patients. Length of stay is the average number of days spent in the hospital following CABG surgery.

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Surgeon Data

Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Butler, Michael D.						
Hamot	73	⊙	⊙	⊙	⊙	6.0
Campbell, David B.						
Milton S Hershey	32	⊙	⊙	⊙	⊙	5.5
Cardone, John C.						
Westmoreland Regional	158	⊙	⊙	⊙	⊙	5.3
Casale, Alfred S.						
Geisinger Wyoming Valley	79	⊙	⊙	⊙	○	5.1
Casey, Kevin *	58	⊙	⊙	⊙	⊙	7.2
Main Line Lankenau	33	⊙	⊙	⊙	⊙	7.5
Cope, Jeffrey T. *	128	⊙	⊙	⊙	⊙	5.6
Lancaster General	114	⊙	⊙	⊙	⊙	5.5
Cuellar, Augusto M. *	33	⊙	NR	NR	NR	7.2
Culig, Michael H.	143	⊙	⊙	⊙	⊙	5.6
Western Pennsylvania	109	⊙	⊙	⊙	⊙	5.6
UPMC Presby Shadyside	34	●	⊙	⊙	⊙	5.6
Darrell, John C. *	97	⊙	⊙	⊙	⊙	6.7
Washington	59	⊙	⊙	⊙	⊙	6.7
Davliakos, George P.						
Butler Memorial	120	⊙	⊙	⊙	⊙	6.4
Deshpande, Anil S.						
St Mary	98	⊙	⊙	⊙	⊙	6.5
Devineni, Rajsekhar *	152	⊙	⊙	⊙	⊙	4.7
Conemaugh Valley Memorial	149	⊙	⊙	⊙	⊙	4.7

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Surgeon Data

Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Diehl, James T.						
Thomas Jefferson Univ	147	⊙	⊙	●	●	6.7
DiMarco, Jr., Ross F. *	151	⊙	⊙	⊙	⊙	6.9
Mercy Pittsburgh	150	⊙	⊙	⊙	⊙	6.9
DiSesa, Verdi J.						
Chester County	50	⊙	⊙	⊙	⊙	6.0
Edie, Richard N.						
Thomas Jefferson Univ	35	⊙	NR	NR	NR	6.8
El Khatib, Hazem N. *	125	⊙	⊙	⊙	⊙	6.3
Butler Memorial	124	⊙	⊙	⊙	⊙	6.3
Entwistle III, John W. *	50	●	⊙	⊙	⊙	8.3
Hahnemann University	47	●	⊙	⊙	⊙	8.5
Fall, Stephen M.						
Reading	93	●	⊙	⊙	⊙	6.1
Fazi, Burt *	100	⊙	⊙	⊙	⊙	4.9
Altoona	80	⊙	⊙	⊙	⊙	5.0
Feaster III, Marshall M.	73	⊙	⊙	⊙	○	6.5
Reading	43	⊙	⊙	⊙	○	6.3
St Joseph/Reading	30	⊙	⊙	⊙	⊙	6.7
Ferdinand, Francis D. *	79	⊙	⊙	⊙	⊙	6.5
Main Line Lankenau	78	⊙	⊙	⊙	⊙	6.5
Fitzgibbon, Leo D.						
Hamot	98	⊙	⊙	⊙	⊙	5.8
Fulton, Jeffrey A.						
Jefferson Regional	64	⊙	⊙	⊙	⊙	6.9

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Surgeon Data

Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Furukawa, Satoshi						
Temple University	60	⊙	⊙	⊙	⊙	7.4
Garzia, Fernando						
Lehigh Valley/Muhlenberg	89	⊙	⊙	⊙	⊙	3.4
Gilbert, Christian L.						
Geisinger/Danville	43	⊙	⊙	⊙	⊙	5.4
Goldman, Scott M. *	52	⊙	⊙	⊙	⊙	5.8
Main Line Lankenau	50	⊙	⊙	⊙	⊙	5.8
Gordon, David A.						
Easton	76	⊙	⊙	⊙	⊙	6.2
Grunewald, Karl E. *	160	⊙	⊙	⊙	⊙	5.7
Crozer Chester	159	⊙	⊙	⊙	⊙	5.7
Guerraty, Albert J. *	100	⊙	⊙	⊙	⊙	5.7
Graduate	86	⊙	NR	NR	NR	5.4
Hargrove, III, W. Clark *	72	⊙	NR	NR	NR	6.1
Univ PA/Presbyterian	70	⊙	NR	NR	NR	6.1
Harostock, Michael						
WVHCS	132	⊙	⊙	⊙	⊙	6.5
Hart, James C. *	53	⊙	⊙	⊙	⊙	6.1
Pinnacle Health	52	⊙	⊙	⊙	⊙	6.1
Haupt, Hans M.	75	⊙	⊙	⊙	⊙	5.9
York	44	⊙	⊙	⊙	⊙	6.0
Phoenixville	31	⊙	⊙	⊙	⊙	5.7
Haybron, David M. *	138	⊙	⊙	⊙	⊙	5.5
Western Pennsylvania	125	⊙	⊙	⊙	⊙	5.5

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		In-Hospital	30-Day	7-Day	30-Day	
Hetzler, Norman A.						
DuBois Regional	110	●	●	⊙	⊙	4.2
Highbloom, Richard Y.	129	⊙	⊙	⊙	⊙	6.2
Albert Einstein	94	⊙	⊙	⊙	⊙	6.1
Frankford	35	⊙	⊙	⊙	⊙	6.6
Holland, Fred W.						
Saint Vincent Health	151	⊙	⊙	⊙	⊙	4.0
Howanitz, E. Paul						
St Joseph/Reading	100	⊙	⊙	⊙	⊙	6.2
Jorge, Eduardo *	58	⊙	⊙	⊙	⊙	6.1
Pinnacle Health	52	⊙	⊙	⊙	⊙	6.2
Keagy, Gregory S. *	56	⊙	⊙	⊙	⊙	5.8
Pinnacle Health	45	●	●	⊙	⊙	5.7
Kolff, Jacob						
Conemaugh Valley Memorial	94	⊙	⊙	⊙	⊙	5.1
Kolla, Srinivas *	122	⊙	⊙	⊙	⊙	7.3
Mercy Pittsburgh	121	⊙	⊙	⊙	⊙	7.2
Kuretu, M.L. Ray *	128	⊙	⊙	⊙	⊙	7.2
Mercy Fitzgerald	124	⊙	⊙	⊙	●	7.2
LeBoutillier III, Martin						
Chester County	45	⊙	⊙	⊙	⊙	5.4
Lerberg, David	90	⊙	⊙	⊙	⊙	5.6
Western Pennsylvania	58	⊙	⊙	⊙	⊙	5.3
UPMC Presby Shadyside	32	⊙	⊙	⊙	⊙	6.1

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Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Levin, Bradley						
York	93	●	●	⊙	⊙	6.0
Lico, Serrie C. *	108	⊙	⊙	⊙	⊙	4.3
Geisinger/Danville	105	⊙	⊙	⊙	⊙	4.2
Lima, Claudio A. B. *	131	⊙	⊙	⊙	⊙	6.3
UPMC Presby Shadyside	106	⊙	⊙	⊙	⊙	6.4
Lincoln, Stephen D. *	36	⊙	⊙	⊙	⊙	7.7
Lomago, Dean F.						
Washington	80	⊙	⊙	⊙	⊙	6.3
Long, Richard W.						
Hamot	108	●	●	⊙	⊙	6.3
Lough, Frederick C.						
Reading	95	⊙	⊙	⊙	⊙	5.9
Lui, Raphael C. *	36	⊙	⊙	⊙	●	5.0
Lundy, Edward F. *	102	⊙	⊙	⊙	⊙	5.7
Lancaster General	97	⊙	⊙	⊙	⊙	5.6
Macha, Mahender						
Temple University	67	⊙	⊙	⊙	⊙	7.9
Machiraju, Venkata R. *	182	⊙	⊙	⊙	⊙	6.4
UPMC Presby Shadyside	125	⊙	⊙	⊙	⊙	6.4
Jefferson Regional	41	⊙	⊙	⊙	⊙	6.3
Magovern, James A.						
Allegheny General	52	⊙	⊙	⊙	⊙	7.3
Magovern, Jr., George J. *	85	⊙	⊙	⊙	⊙	7.5
Allegheny General	83	⊙	⊙	⊙	⊙	7.5

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		In-Hospital	30-Day	7-Day	30-Day	
Maher, Thomas *	133	⊙	⊙	⊙	⊙	6.9
Allegheny General	131	⊙	⊙	⊙	⊙	6.9
Manetta, Frank *	42	⊙	⊙	⊙	⊙	5.5
Marra, Steven						
Temple Lower Bucks	41	⊙	⊙	●	⊙	7.0
Marrone, Gary C. *	78	⊙	⊙	⊙	⊙	8.1
Allegheny General	77	⊙	⊙	⊙	⊙	8.1
Martella, Arthur T. *	143	⊙	⊙	⊙	⊙	5.9
Main Line Paoli	122	⊙	⊙	⊙	⊙	5.8
Mathai, John						
York	105	⊙	⊙	⊙	⊙	6.7
Mavridis, Savas						
Conemaugh Valley Memorial	40	⊙	●	⊙	⊙	5.2
McCarty, Christine M. *	106	⊙	⊙	⊙	⊙	6.2
Pinnacle Health	90	⊙	⊙	⊙	⊙	6.4
McClurken, James B. *	107	⊙	⊙	⊙	⊙	6.9
Abington Memorial	95	⊙	⊙	⊙	⊙	6.7
McDonnell, Bryan E.						
WVHCS	160	⊙	⊙	⊙	⊙	6.2
McGary, Suzan A.						
Williamsport	95	⊙	⊙	⊙	⊙	4.8
Mehta, Sanjay M.						
Milton S Hershey	53	⊙	⊙	⊙	⊙	5.1

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		In-Hospital	30-Day	7-Day	30-Day	
Metcalf, Randy K.	181	⊙	⊙	⊙	⊙	5.5
Doylestown	142	⊙	⊙	⊙	⊙	5.4
Frankford	39	⊙	⊙	⊙	⊙	5.9
Michalak, Dennis M.						
Hamot	45	⊙	NR	NR	NR	5.5
Morris, Rohinton J.*	121	⊙	⊙	⊙	⊙	6.5
Univ PA/Presbyterian	115	⊙	⊙	⊙	⊙	6.6
Mott, Brian D.						
Community/Scranton	108	⊙	⊙	⊙	⊙	5.6
Mousset, Xavier R.*	44	⊙	⊙	⊙	⊙	4.8
Saint Vincent Health	42	⊙	⊙	⊙	⊙	4.9
Navid, Forozan *	136	⊙	⊙	⊙	⊙	6.4
UPMC Presby Shadyside	107	⊙	⊙	⊙	⊙	6.5
Nixon, Todd E.*	50	⊙	⊙	⊙	⊙	5.2
Medical College PA	40	⊙	⊙	⊙	⊙	5.2
Nutting, Ron D.						
Reading	93	⊙	⊙	⊙	○	6.2
Orecchia, Paul M.						
Robert Packer	88	●	⊙	⊙	●	6.3
Osevala, Mark A.	200	⊙	⊙	⊙	⊙	6.1
Pinnacle Health	160	⊙	⊙	⊙	⊙	6.2
Holy Spirit	40	⊙	⊙	⊙	⊙	5.8
Panebianco, Antonio C.						
Easton	52	⊙	⊙	⊙	⊙	5.5

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		In-Hospital	30-Day	7-Day	30-Day	
Park, Chong S. *	48	⊙	⊙	⊙	⊙	6.2
Jefferson Regional	46	⊙	⊙	⊙	⊙	6.1
Park, Kyung S.						
Jefferson Regional	75	⊙	⊙	●	⊙	6.0
Park, Sung J.						
DuBois Regional	88	⊙	⊙	⊙	●	4.5
Payne, Maryann						
Sharon Regional	110	⊙	⊙	⊙	⊙	6.4
Pellegrini, Daniel P.						
UPMC Presby Shadyside	117	⊙	⊙	⊙	⊙	5.8
Pellegrini, Ronald V.						
UPMC Presby Shadyside	118	⊙	⊙	⊙	⊙	5.9
Pennock, John L. *	102	⊙	●	⊙	⊙	6.0
Pinnacle Health	89	⊙	●	⊙	⊙	6.1
Pett, Stephen D.						
Hamot	58	⊙	⊙	⊙	⊙	6.8
Phillips, Theodore G. *	141	⊙	⊙	○	○	5.5
Lehigh Valley	138	⊙	⊙	○	○	5.5
Pierce, Alice M. *	118	⊙	⊙	⊙	⊙	7.8
Mercy Pittsburgh	107	⊙	⊙	⊙	⊙	7.7
Pochettino, Alberto *	60	⊙	NR	NR	NR	6.4
Univ PA/Presbyterian	35	⊙	NR	NR	NR	6.3
Priest, Brian P.	164	⊙	⊙	⊙	⊙	5.6
Doylestown	98	⊙	⊙	⊙	⊙	5.3
Frankford	66	⊙	⊙	⊙	⊙	6.2

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		In-Hospital	30-Day	7-Day	30-Day	
Pym, John *	41	⊙	⊙	●	⊙	6.4
Frankford	38	⊙	⊙	⊙	⊙	6.6
Quigley, Robert L.	112	⊙	⊙	⊙	⊙	6.2
Frankford	75	⊙	⊙	⊙	⊙	6.5
Albert Einstein	37	⊙	⊙	⊙	⊙	5.7
Raudat, Charles W.						
St Mary	109	⊙	⊙	⊙	●	6.1
Reitknecht, Felice L.						
Robert Packer	95	⊙	⊙	⊙	●	4.4
Risher, William H.						
St Luke's/Bethlehem	111	⊙	⊙	⊙	⊙	6.8
Sadoff, John D.						
Williamsport	43	⊙	⊙	⊙	⊙	5.7
Sadr, Farrokh S.						
Sacred Heart/Allentown	55	⊙	⊙	⊙	⊙	6.0
Samuels, Louis E. *	66	⊙	⊙	⊙	⊙	5.7
Main Line Lankenau	50	⊙	⊙	⊙	⊙	5.1
Sanders, David						
Saint Vincent Health	206	⊙	⊙	⊙	⊙	4.5
Seibel, P. Scott						
Medical Center Beaver	132	⊙	⊙	⊙	⊙	5.7
Senan, Pushpendra *	32	⊙	NR	NR	NR	6.0
Shaffer, Carolyn W.	152	●	●	⊙	⊙	6.6
Pinnacle Health	95	●	●	⊙	⊙	7.0
Holy Spirit	57	⊙	⊙	⊙	⊙	5.9

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		In-Hospital	30-Day	7-Day	30-Day	
Shariff, Haji M.						
St Mary	105	⊙	⊙	⊙	⊙	5.9
Shears II, Larry *	72	⊙	⊙	⊙	⊙	6.0
UPMC Presby Shadyside	46	⊙	⊙	⊙	⊙	6.0
Sinclair, Michael C.						
Lehigh Valley	105	⊙	⊙	⊙	⊙	5.8
Singer, Raymond L.						
Lehigh Valley	78	⊙	⊙	⊙	⊙	5.5
Singh, Deepak *	47	⊙	⊙	⊙	⊙	6.8
Sortino, Antonio						
Washington	74	⊙	⊙	⊙	⊙	6.4
Stahl, Russell						
Community/Scranton	115	⊙	⊙	⊙	⊙	5.8
Stella, Joseph						
Mercy/Wilkes Barre	112	⊙	⊙	⊙	⊙	5.0
Stephenson, Edward R.						
Milton S Hershey	116	⊙	⊙	⊙	○	5.5
Strong, III, Michael D. *	151	⊙	⊙	⊙	⊙	7.7
Hahnemann University	141	⊙	⊙	⊙	⊙	8.0
Strzalka, Christopher T.						
Hamot	117	⊙	⊙	⊙	⊙	4.9
Sullivan, Lawrence X.	111	⊙	⊙	⊙	⊙	5.7
Western Pennsylvania	67	⊙	⊙	⊙	⊙	5.4
UPMC Presby Shadyside	44	●	⊙	⊙	⊙	6.1

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Surgeon/Hospital	Number of Cases	Mortality		Readmissions		Length of Stay
		In-Hospital	30-Day	7-Day	30-Day	
Sutter, Francis P.						
Main Line Lankenau	217	⊙	⊙	⊙	⊙	6.0
Suzuki, Mark Masaru						
Westmoreland Regional	190	⊙	⊙	⊙	⊙	5.2
Szydlowski, Gary W. *	111	⊙	⊙	⊙	⊙	5.6
Lehigh Valley	110	⊙	⊙	⊙	⊙	5.6
Taylor, Bradley S.						
UPMC Passavant	126	⊙	⊙	⊙	⊙	6.1
Theman, Terrill						
St Luke's/Bethlehem	112	⊙	⊙	⊙	⊙	5.7
Vasilakis, Alexander						
Medical Center Beaver	150	⊙	⊙	⊙	⊙	5.6
Von Koch, Lear *	115	⊙	⊙	⊙	⊙	5.9
Mercy/Scranton	111	⊙	⊙	⊙	⊙	5.9
Watson, John W.						
Bon Secours Holy Family	106	⊙	⊙	⊙	⊙	5.5
Wechsler, Andrew						
Hahnemann University	47	⊙	⊙	⊙	⊙	7.8
Wei, Lawrence M.						
UPMC Presby Shadyside	163	⊙	⊙	⊙	⊙	5.5
Weiss, Steven J. *	45	●	⊙	⊙	⊙	7.4
Abington Memorial	38	⊙	⊙	⊙	⊙	7.4
Wilcox, Kenneth *	75	⊙	⊙	⊙	⊙	6.0
Mercy/Scranton	74	⊙	⊙	⊙	⊙	5.9

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		In-Hospital	30-Day	7-Day	30-Day	
Woelfel, G. Frederick *	226	⊙	⊙	⊙	⊙	6.1
St Clair Memorial	205	⊙	⊙	⊙	⊙	5.9
Woo, Y. Joseph *	76	⊙	⊙	⊙	⊙	4.9
Hospital University PA	75	⊙	⊙	⊙	⊙	4.9
Woods, Edward L.						
Geisinger/Danville	76	⊙	⊙	⊙	⊙	5.7
Wu, James *	131	⊙	⊙	⊙	⊙	5.4
Lehigh Valley	130	⊙	⊙	⊙	⊙	5.5
Zadeh, Barry J.*	100	⊙	⊙	⊙	⊙	6.6
Lancaster Regional	71	⊙	⊙	⊙	⊙	6.7
Zama, Nche						
Robert Packer	89	⊙	⊙	⊙	⊙	4.9

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