

Focus on Heart Attack

in Southeastern Pennsylvania

Berks • Bucks • Carbon • Chester • Delaware • Lehigh • Montgomery
Northampton • Philadelphia • Schuylkill counties



*A 1993 Summary Report for Health Benefits Purchasers,
Health Care Providers, Policy-makers, and Consumers*

Pennsylvania Health Care Cost Containment Council

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Southeastern Pennsylvania

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Principal Findings

Hospitals and physicians in Pennsylvania are doing a good job in treating heart attack patients. In 1993, the year covered by this study, 93.7% of hospitals and 98.2% of reportable physician practice groups had risk-adjusted patient mortality rates that were well within what was expected or better given significant patient risk factors. According to the Pennsylvania Department of Health, the number of heart attack deaths in Pennsylvania declined from 15,476 in 1990 to 14,283 in 1994.

In 1993, there were 35,893 heart attack cases treated in Pennsylvania hospitals. Of those, 33,752 involved Pennsylvania residents and 2,141 involved out of state residents. These cases resulted in 40,684 hospitalizations, including transfers and readmissions for additional heart attacks, of which 39,256 were included in this study.

These individuals were admitted to urban and rural hospitals; teaching facilities and non-teaching facilities; hospitals with advanced cardiac care services such as open heart surgery units and hospitals without these services. They were treated by several physician specialty types: cardiologists, internists, family medicine practitioners, and cardiothoracic surgeons. They were treated by teams of physicians working in practice groups, and they were treated by physicians working in a solo practice.

The majority (62%) of these patients were 65 years of age or older and were insured through the Medicare program. The remainder were insured through the state's Medicaid program, various non-profit Blue Cross plans, for-profit Commercial insurers, and managed care plans like Health Maintenance Organizations (HMOs). A small number received their care through a variety of other plans, were uninsured, or paid for their care themselves.

Consistent with national figures, women were hospitalized for heart attacks at an older age than were men. The average age for women in this report was 72 years of age; the average age for men was 64. The mean age of those that died was 76; the mean age of those that lived was 67 years. The most powerful predictor of mortality was the presence of cardiogenic shock, although it is important to note that this was present in only 4.5% of patients.

Patients were expected to stay in an acute care hospital for an average of 8.1 days (and actually stayed 8.2 days) and were charged on average \$12,847. Patients were expected to stay in an advanced cardiac care service hospital for an average of 7.6 days (and actually stayed 7.5 days) and were charged on average \$31,160.

In 1993, there were 35,893 heart attack cases treated in Pennsylvania hospitals

93.7% of hospitals and 98.2% of reportable physician practice groups had risk-adjusted patient mortality rates that were as expected or better

Eighty-eight percent of heart attack patients were discharged alive; of those, 94.2% were alive at 180 days and 91.8% were alive at 365 days

Women were hospitalized for heart attacks at an older age than were men

Patient Mortality--An Overview

Of all patients treated for heart attack in 1993, 4,249 died in the hospital—a 10.4% in-hospital mortality rate. After exclusions, 3,888 of those deaths were included in this study—an in-hospital mortality rate of 9.9%.

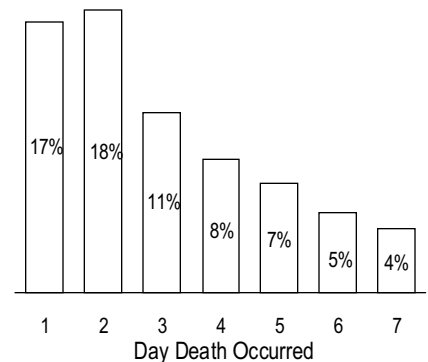
Of those hospitalized for a heart attack, 17.6% died within one year of their heart attack of heart-related causes. This includes those that died in the hospital and those that died after discharge from the hospital.

The first days are critical.

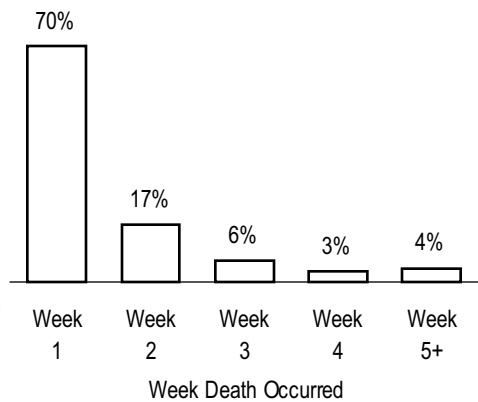
Of those 4,249 patients, 46% died within the first three days of hospitalization, with Day 1 (17%) and Day 2 (18%) being the most critical period. Seventy percent died within the first week of hospitalization. Ninety percent died within two and a half weeks after admission to the hospital.

Of those who survived their heart attack and were discharged from the hospital, 5.8% died within 6 months of their hospital admission and 8.2% died within one year. While 65% of the patients that died were discharged to home, those who were discharged to skilled or intermediate nursing facilities had a much higher mortality rate.

Duration of Stay Before Death Occurred
Week 1



Duration of Stay Before Death Occurred



Counties and Communities

There are geographic differences in hospitalizations and levels of advanced cardiac services.

Counties in Western Pennsylvania had significantly *more* hospitalizations for heart attack, and significantly *more* in-hospital deaths for heart attack than other areas of the state. Of the ten counties with the highest rates for heart attack hospitalizations, seven were in Western Pennsylvania.

RESIDENTS in rural counties had significantly *higher* hospitalization rates for heart attack and significantly higher rates of in-hospital mortality compared to the state rate. Residents in urban counties had significantly lower hospitalization rates for heart attack. In-hospital mortality was not significant. Residents of rural areas were less likely to receive cardiac catheterizations (37% vs. 47%), balloon angioplasties (15.4% vs. 18.1%), and cardiac surgery (7.9% vs. 10.5%) than residents of urban areas.

Pennsylvanians living in areas with the highest median incomes had significantly *lower* hospitalization rates for heart attack. In-hospital mortality by income level was not statistically significant.

HOSPITALS located in rural counties had shorter lengths of stay than expected; hospitals in urban counties had lengths of stay as expected. The in-hospital mortality rates for hospitals located in both urban and rural counties were as expected.

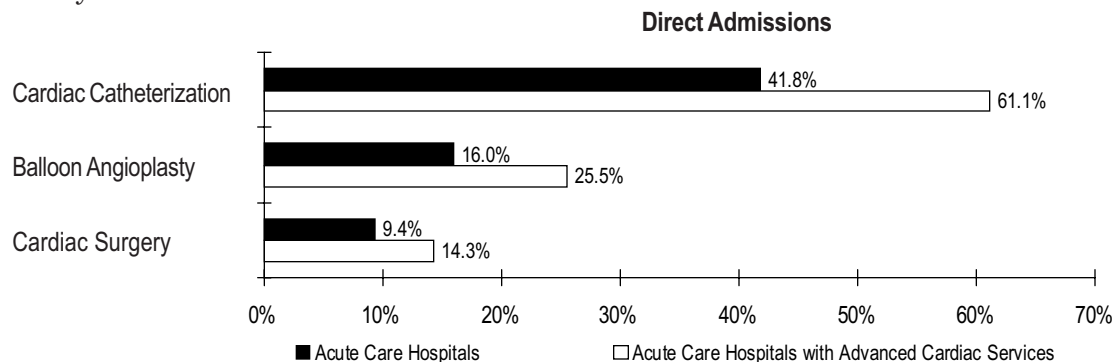
Hospitals

Where did these patients go for care? What was the outcome of that care?

Hospitals with advanced cardiac care services treated 45% of the cases included in this report; 55% of the cases were treated in hospitals without these advanced capabilities. Hospitals with fewer deaths than expected include 7% of 41 hospitals *with* advanced cardiac services and 6% of the 148 hospitals *without* these services. Five percent of the advanced cardiac care hospitals and 7% of hospitals *without* advanced cardiac capabilities had more deaths than expected, after accounting for significant risk factors.

There are differences in who receives advanced cardiac services.

Heart attack patients admitted directly (not including transfers) to a hospital *with* advanced cardiac services are more likely to receive those services during their initial episode of care than those patients admitted directly to a hospital *without* advanced cardiac services. The graph below does not take into account patients who were discharged from the hospital following initial treatment, and then returned later for advanced services. In addition, as a patient's age and/or risk increases, they are less likely to receive advanced cardiac services.



There is greater variation across hospitals in length of stay than in mortality.

Length of stay varies greatly across hospitals independent of patient risk factors, services or treatment received, and type of payor, program or insurer. In fact, 49% of hospitals had significantly longer or shorter than expected hospital stays. This differs from in-hospital mortality in that only 13% of hospitals fell outside the expected mortality range. This suggests that other factors are driving length of stay and may present opportunities for greater efficiency.

There are regional differences in how long a patient stays in the hospital.

CENTRAL & NORTHEASTERN HOSPITALS:

33% of the hospitals had shorter lengths of stay than expected; 18% had longer lengths of stay than expected.

WESTERN HOSPITALS:

23% of the hospitals had shorter lengths of stay than expected; 30% had longer lengths of stay than expected.

SOUTHEASTERN HOSPITALS:

16% of the hospitals had shorter lengths of stay than expected; 27% had longer lengths of stay than expected.

Hospital stays differ according to hospital teaching status.

Non-teaching hospitals had shorter lengths of stay than expected. University hospitals had longer lengths of stay than expected. Teaching hospitals (non-university) had lengths of stay as expected. There were no in-hospital mortality differences by hospital teaching status in 1993.

Physicians

There are differences across physician specialties in treating heart attack patients.

Cardiologists had fewer patient deaths than expected and shorter lengths of stay than expected across all hospitals.

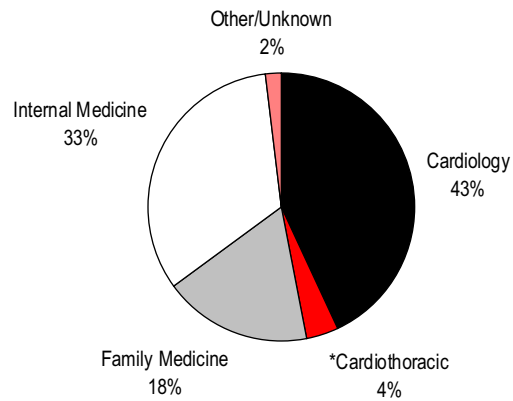
Patients treated by physicians specializing in internal medicine stayed in the hospital longer than expected across all hospitals.

Family medicine physicians practicing in hospitals *without* advanced cardiac services had more patient deaths than expected. Physicians practicing internal medicine in hospitals *with* advanced cardiac services had more deaths than expected.

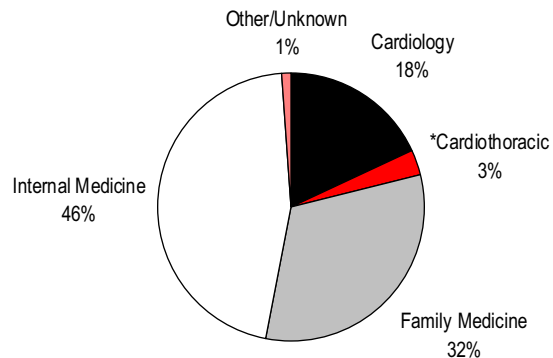
Volume may play a role in patient outcomes.

Physician practice groups that treated 30 cases or more (per group) in 1993 had fewer deaths than expected. Practice groups treating less than 30 cases had more deaths than expected. Only 19 of 2,387 solo practitioners (practicing alone, not in a group) treated 30 or more heart attack cases in 1993. Solo practitioners, overall, had patient mortality rates as expected.

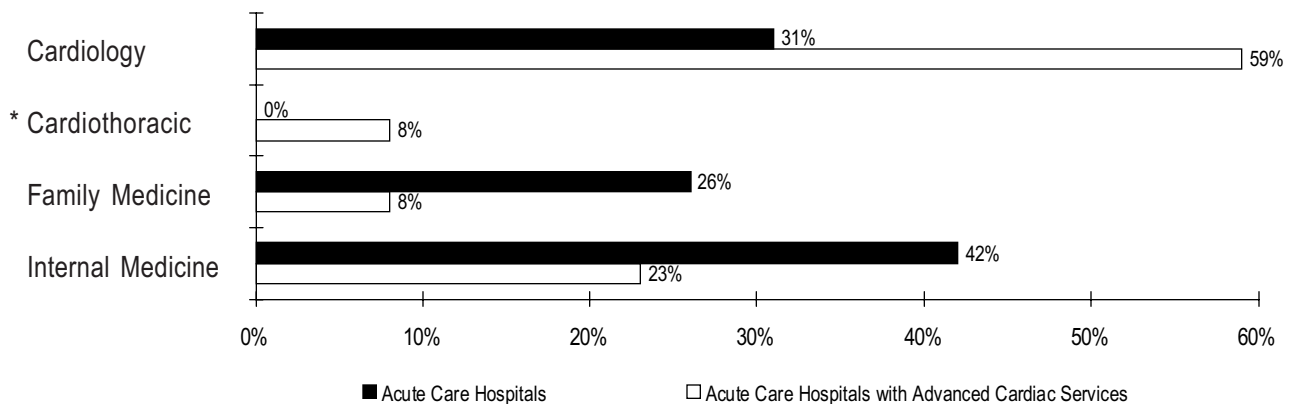
**Physician Specialty
By Percent of Cases**



**Physician Specialty
By Percent of Practicing Physicians**



**Percent of Heart Attack Cases
by Physician Specialty**



* Cardiothoracic surgeons are under represented because identification of physician specialty is based on the attending physician, not the operating physician.

Payor Groups

There are differences among payor types.

It is important to note that although there are regional variations among payor groups, there were few consistent patterns statewide. This may be due to the fact that payor populations differ from region to region as do the hospitals and physicians that treat those patients. For example, Medicaid patients had mortality rates as expected in Central/Northeastern and Southeastern Pennsylvania yet higher rates than expected in Western Pennsylvania. Heart attack patients enrolled in HMO/PPOs had lower mortality rates than expected in Central/Northeastern and Western Pennsylvania yet higher rates than expected in Southeastern Pennsylvania.

AGE — Medicare patients were the oldest (95% over 65 years of age), had the most heart attacks, and had the highest heart attack mortality rates. HMO/PPOs in Southeast Pennsylvania had a significantly higher percentage of older patients than did HMO/PPOs in other regions. This is probably due to Medicare-risk contracts and may be responsible for the higher severity of this group compared to HMO/PPOs in other regions. Medicaid recipients were the youngest heart attack victims.

RISK — Aside from Medicare (where advanced age and risk are intertwined) and Other Payors (Other is a heterogeneous group and is difficult to compare with other payor group populations), Medicaid patients were the highest risk group. Those enrolled in HMO/PPOs in Western and Central/Northeastern Pennsylvania were the lowest risk patients of any payor group. This was not the case in Southeastern Pennsylvania where heart attack patients enrolled in HMO/PPOs were at higher risk than those enrolled in Blue Cross-related plans and Commercial insurance plans.

MORTALITY RATES — Despite a population that was at a higher level of risk and severity than other groups (except Medicare), Medicaid patients in Southeastern Pennsylvania and Central/Northeastern Pennsylvania had mortality rates that were as expected. Only in Western Pennsylvania did Medicaid patients have higher mortality rates than expected. It is important to note that the socioeconomic characteristics associated with this group may not be completely accounted for by the Council's risk-adjustment methodology.

Patients enrolled in indemnity Blue Cross plans and Commercial insurance plans had mortality rates within the expected range in all three regions of the state.

Heart attack patients enrolled in HMO/PPOs in Western Pennsylvania and Central/Northeastern Pennsylvania had significantly lower than expected mortality rates. Those patients enrolled in HMO/PPOs in Southeastern Pennsylvania had higher mortality rates than expected.

There are differences in the levels of services patients receive.

Medicare patients received the lowest level of advanced services and were the least likely to be transferred to advanced cardiac care hospitals. This was likely due to the advanced age and illness level of this population.

Aside from Medicare and Other, Medicaid patients had the lowest level of advanced services and the highest risk of dying among the remaining four payor groups. They were less likely to be transferred to hospitals with advanced cardiac services than those in other payor groups, although in the Southeastern Region, this may be balanced by the comparatively higher number of Medicaid patients admitted directly to advanced cardiac care facilities. Risk may be a factor in the level of services among Medicaid patients. Finally, Medicaid recipients in Western Pennsylvania had a much higher level of advanced cardiac services and transfers to advanced cardiac care facilities than Medicaid recipients in other regions.

The Council wishes to note that social, economic, health status, and behavioral characteristics might put some groups at higher risk and may also drive treatment and transfer patterns. These types of risks may not be completely accounted for in the study methodology. For more details, please see the *Technical Report*.

Reader's Guide

More than 70 million Americans suffer from some form of cardiovascular disease. This summary report, *Focus on Heart Attack*, concerns itself with one kind of cardiovascular disease: coronary artery disease and its most serious and potentially lethal manifestation: heart attack.

What Does this Report Include?

This report, which is one of three regional reports, contains information about patients admitted to Pennsylvania hospitals in 1993 for treatment of a heart attack. It is divided into four sections.

First, it discusses the impact of heart attack, what to do in the event of one, how heart attacks are treated, who's at risk for one, and how to prevent a first or subsequent occurrence.

Second, it provides information about each Pennsylvania hospital and physician practice group that treated those patients. That information includes the number of cases treated, average length of hospitalization, and patient mortality rates. (Mortality rates are reported only for hospitals and practice groups with 30 or more cases.) The average hospital charge is also included.

Third, the report examines those Pennsylvania counties and communities whose residents had the highest and lowest hospitalization and mortality rates for heart attack.

Finally, the report compares hospitalization rates, mortality rates, length of hospitalization, and average charges according to the category of the patients' insurance: Medicare, Medicaid, HMO/PPOs, commercial insurance plans, and Blue Cross plans.

INCLUDES

Heart Attack Facts

Mortality Rates

Average Charges

Length of Stay

Community Data

Payor Information

How this Report Can Be Used

It can assist providers of medical care, purchasers of health benefits, and insurers in identifying opportunities for improvement in the quality and cost of treatment for heart attacks.

It can assist policy makers and researchers in pinpointing communities where prevention efforts and access to vital medical services might be improved.

It provides for comparisons of financial and medical outcome data according to the category of patients' insurance.

It can help consumers form intelligent questions about the risk and prevention of heart attacks, as well as their treatment options.

Finally, the report can help to raise public awareness about the issues of heart disease and heart attack.

Scope of this Report

This report examines the issue of heart attack in a comprehensive way. It includes information about 39,256 hospital admissions for the treatment of a heart attack in Pennsylvania in 1993. This includes 8,034 patients who were transferred from a general acute care hospital to a hospital with advanced cardiac services, such as an open heart surgery unit (please see page 14 for more information on transfers). Mortality rates have been adjusted to account for significant risk factors for heart attack cases included in this report. It lists the number of cases treated by 5,033 physicians. (These are statewide figures.) It provides a *snapshot* of the rate of heart attack hospital admissions and mortality in communities throughout the Commonwealth for 1993. It follows the progress of heart attack patients transferred to other hospitals for additional services. It follows the progress of patients after their discharge from the hospital. It reports financial and risk-adjusted outcome data according to category of patient insurance.

LIMITATIONS OF THIS REPORT

Focus on Heart Attack is the most ambitious project undertaken by the Health Care Cost Containment Council. It has produced the most comprehensive database of its kind. It marks the first publicly reported physician-specific patient outcome data about a medical treatment. These are the most accurate data, statistically speaking, that the Council has reported.

This report, nonetheless, has limitations and we want to caution the reader about them.

THE REPORT COVERS A LIMITED PERIOD

Compiling data for this report was a complex, time-consuming process for physicians, hospitals, and the Council. Therefore, only 1993 information is reported. Factors identified in this report may have changed as a result of quality or technological improvements now in place in Pennsylvania hospitals. For example, the increased use in recent years of thrombolytic (blood clot dissolving) medication has had a positive impact on heart attack survival rates. The 1993 data may not uniformly reflect this recent trend. Changes in hospital and physician practice patterns may have occurred since 1993.

MEASURING QUALITY

The mortality rates included in this report are an important indicator of the quality of care, but cannot be considered the only measure of the quality of care. The information is limited and the measurement of quality is complex. Hospital deaths are frequently an unavoidable consequence of a patient's medical condition. Hospitals and physicians may do everything right and the patient may still die. However, after taking most important patient risks into account, differences with respect to mortality rates do exist among hospitals, physicians, communities, and payors.

Why do those differences exist? Do they present opportunities to improve the quality of medical care, access to medical care, and to reduce costs? The *goal* of this report is to provoke hospitals, physicians, policy-makers, researchers, group purchasers, and the interested public to seek out answers to these questions.

The physicians in this report treat many other kinds of patients besides heart attack patients. This report cannot be used to draw conclusions about their overall practices. In addition, many physicians successfully treat coronary artery disease by working with the patient to reduce it. By doing so, they may prevent a heart attack. This report looks only at heart attacks which occurred; it cannot measure those that were prevented through skillful physician management and patient conscientiousness. Those success stories are not captured here.

Finally, the treatment of heart attack patients is a varied and complex process, one that involves many players. Patients are frequently stabilized at one hospital, then transferred to a hospital with advanced cardiac capabilities for additional services such as balloon angioplasty or coronary bypass surgery. Several different kinds of physicians, including cardiologists, internists, cardiac surgeons, and general practitioners, treat heart attack patients.

Often, several different physicians, working together, will care for a patient through the course of treatment. It is very often a team effort, which is one reason why this report focuses on physician practice groups. Given the importance of a quick response to a heart attack, the outcome of rural patients may well depend on the distance to the nearest hospital, or the quality and extent of the local emergency service.

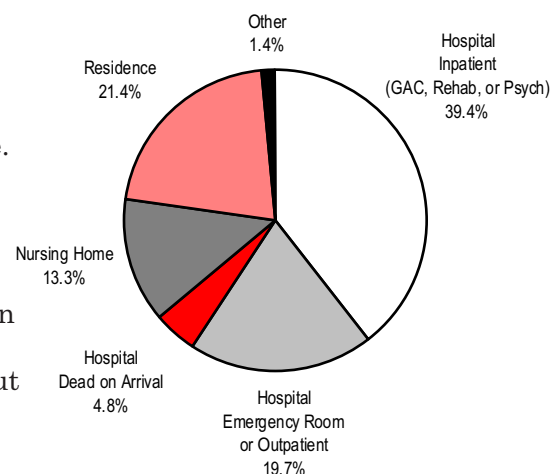
In light of these factors, the Council would like to emphasize that this report is not about assigning blame to particular individuals. It is about pointing out differences in patient outcomes and stimulating a quality improvement dynamic that will attempt to raise and answer appropriate questions about those differences.

THE REPORT IS NOT ALL INCLUSIVE

With the exception of the section on County and Community Information, this report includes only inpatient hospital mortality data. This is because the Council is not able to capture deaths that occurred in hospital emergency rooms, hospice units, nursing homes, outpatient facilities, or at home.

However, by working closely with the Pennsylvania Department of Health, the Council has been able to expand the County and Community section to include Health Department information about the overall rate of mortality (in and outside the hospital setting). The combined data of the two state agencies thus provides a more complete picture about the impact of heart attack in select geographic areas. The chart on the right provides the location where heart attack mortality occurred.

Location of Heart Attack Deaths (Statewide)



Source: Pennsylvania Department of Health

Certain treatment variables, such as a family's desire to avoid extreme measures that merely prolong the act of dying ("do not resuscitate" orders) or treatment with clot-busting thrombolytic medication are not captured directly.

In addition, hospitals and physician practice groups with less than 30 cases were not assigned a mortality rating; the numbers are too small for statistical reliability.

The following hospitals are not included in this report because they treated less than 30 cases in 1993: Barnes-Kasson County Hospital, Columbia Hospital, Elk County Regional Medical Center, Fulton County Medical Center, Mercy Hospital of Nanticoke, Meyersdale Community Hospital, Monsour Medical Center, Neumann Medical Center, Troy Community Hospital, and Union City Memorial Hospital. The following hospitals have closed since 1993 and are also not included in this report because the Council was unable to verify their data: Community Hospital/Chester, Cooper Hospital/Center City, Sacred Heart/Norristown, and Thomas Jefferson University Hospital/Ford Road Campus. Finally, the following hospitals have not been included because they were found noncompliant with the Council's reporting procedures under the law: Kensington Hospital and Bucktail Medical Center.

Hospitals, Practice Groups, and individual physicians may have commented on this report. *These comments are available upon request.*

Why a Report on Heart Attack?

The mission of the Health Care Cost Containment Council is to collect and publish useful information about the charges and patient outcomes for various medical and surgical treatments. Because health care is such a broad subject, the Council often chooses which treatment categories to target, based on the following questions:

- Are significant numbers of people affected?
- Is there a significant cost involved?
- Can significant differences in the charges, patient outcomes, and utilization be identified?

In 1994, the Council created a Task Force on Future Directions. This committee was asked to explore possibilities for the Council's next hospital and physician-specific report. Working closely with the Joint Committee of the Pennsylvania Hospital Association, the Pennsylvania Medical Society, and the Pennsylvania Osteopathic Medical Association, the Task Force recommended that the next comprehensive report focus on heart attack patients in Pennsylvania.

THE IMPACT OF HEART ATTACK

Over the years, medical practitioners and researchers have made tremendous advances in fighting coronary artery disease. According to the Pennsylvania Department of Health, the number of Pennsylvanians statewide who died from a heart attack dropped from 15,476 in 1990 to 14,283 in 1994.

Yet, heart disease remains a serious threat. Atherosclerotic heart disease is the leading cause of death in Pennsylvania, as well as throughout the United States. Cardiovascular disease mortalities account for more than 42% of all deaths every year, and claimed more than 954,138 lives in the United States in 1993.

FACTS

This year, as many as 1.5 million Americans will have a heart attack.

About one-third of them will die.

The estimated cost for treatment of heart attack and angina will be \$66 billion in 1996.

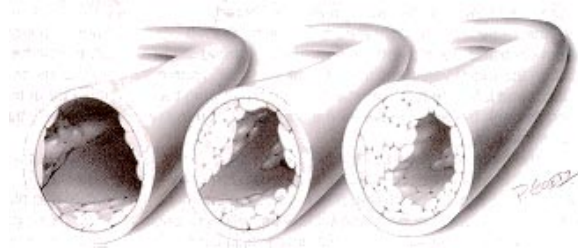
Heart attack is the single largest killer of American men and women. This year, as many as 1.5 million Americans will have a heart attack, and about one-third of them will die. Over 13.5 million people alive today have a history of heart attack, chest pain of heart origin (angina) or both.

The financial impact of heart disease is staggering as well. The American Heart Association estimates the cost of cardiovascular disease in 1996 at \$151.3 billion. This figure includes the cost of physician and nursing services, hospital and nursing home services, the cost of medications and lost productivity resulting from disability. Of this, treatment for coronary artery disease (heart attack and chest pain) cost \$66 billion.

Finally, a number of studies have documented significant variation in the outcomes (survival or mortality) of heart attack patients after differences in patient risk factors have been accounted for.

What is Coronary Artery Disease?

The underlying cause of coronary artery disease is atherosclerosis, which is a build up of fatty deposits, or plaque, along the artery walls. As a result, the arteries narrow, reducing or blocking the flow of blood to the heart. This can cause heart pain (angina) or a heart attack.



How plaque builds up

What is a Heart Attack?

A heart attack (Acute Myocardial Infarction or AMI) occurs when there is sudden insufficient blood supply to an area of heart muscle.

Normally, the body supplies blood to the heart through vessels known as coronary arteries. A heart attack occurs when an obstruction in one of the coronary arteries blocks the blood supply to part of the heart muscle. Most often, the cause of the blockage is a blood clot that has formed in a coronary artery already narrowed by atherosclerosis. Heart muscle cells may suffer irreversible damage and die if the blood supply is cut off drastically. This can result in disability or death of the individual, depending on the extent of damage.

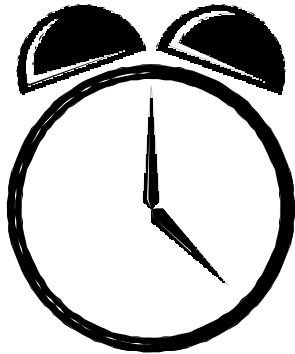
The Warning Signs of a Heart Attack

The symptoms of a heart attack vary greatly in their intensity. The most common symptom is an uncomfortable pressure, tightness, fullness, squeezing or burning pain in the center of the chest or in the upper abdomen that lasts for more than 10 minutes. It can also result in pain or numbness in the arms and jaw. The initial pain — sometimes described as a crushing feeling or pressure ("like an elephant sitting on my chest") — is often intense. Sometimes, however, the pain is merely a persistent, dull ache.

Many persons with coronary artery disease suffer from angina — a discomfort in the chest caused by a temporary lack of oxygen to the heart muscle. For these people, the pain of a heart attack may feel like a severe episode of angina. A heart attack is likely for angina sufferers if several nitroglycerin tablets do not relieve their pain after 10 to 15 minutes. Many people will develop angina days to weeks prior to suffering a heart attack.

A heart attack often develops over hours as a lack of oxygen destroys or disables the heart's tissue. In addition, about half of all victims have warning symptoms hours or weeks in advance. On the other hand, a heart attack can strike swiftly and without warning. A significant percentage (20%) of acute heart attacks are silent or unrecognized by patients.

How are Heart Attacks Treated?



ACT QUICKLY — EVERY SECOND COUNTS!

When it comes to a heart attack, time is of the essence. Each year, at least 250,000 Americans die of a heart attack within one hour of the beginning of symptoms and before they reach a hospital. Fifty percent of heart attack deaths occur within three to four hours of the onset of symptoms. Therefore, the first few hours of management are critical. A heart attack can also cause cardiac arrest, a reversible condition in victims if treated within a few minutes. Most of the permanent damage done to the heart occurs in the first hour.

The major factor causing delay of treatment is the patient's denial that the symptoms represent a serious, life-threatening situation. The ideal early treatment includes rapid diagnosis, alleviation of pain and apprehension, stabilization of heart rhythm and blood pressure, and transportation to a hospital with a cardiac care unit as soon as possible.

GET TO A HOSPITAL FAST

Time is crucial. When a coronary artery becomes blocked, the heart muscle doesn't die immediately. However, the damage increases the longer an artery remains blocked. If a victim gets to an emergency room fast enough, thrombolytic (clot-dissolving) drugs, such as tPA (tissue plasminogen activator), streptokinase, or urokinase, can be given to dissolve the clot and restore blood flow. These drugs must be used within 6-12 hours of a heart attack, and work best when administered within the first two hours. An emergency angioplasty can also be performed to widen or open blocked arteries and restore blood flow. As time passes without treatment, damage to the heart tissue may become irreversible even if blood supply is restored.

KNOW WHAT TO DO IN AN EMERGENCY

- Get help immediately;
- Find out which area hospitals have 24 hour emergency cardiac care;
- Keep a list of emergency rescue service numbers next to the telephone, and on your person;
- If you have chest discomfort that lasts more than five minutes, call the emergency rescue service. Describe your symptoms to ensure a priority dispatch of paramedics trained in cardiac life support;
- If you're with someone who you think is experiencing the signs of a heart attack, insist on taking prompt action. Call 911 immediately. Give CPR (mouth-to-mouth breathing and compression) if necessary. (You should be properly trained. A recent study found that CPR done incorrectly can do more harm than good.)

Hospital Treatment

Once the patient has been stabilized, the physician must treat the underlying heart disease which caused the heart attack. The following is a brief summary of the three main treatment areas: medication, balloon angioplasty, and coronary artery bypass surgery. (There are other methods but these are the most common.) Determining which of these treatments is the best course of action is a complicated decision based on many possible factors. The patient should make this choice based on the advice of a qualified physician.

MEDICATION

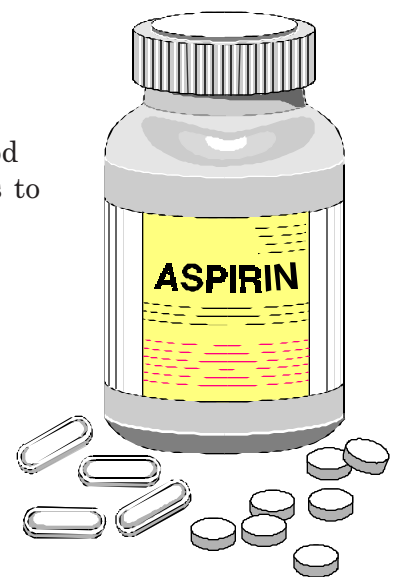
There is a wide array of medication used to treat coronary artery disease and their use isn't standard for all patients. (A qualified physician can discuss the pros and cons of each.)

Once a heart attack has occurred, most patients, unless otherwise indicated, show improved survival rates when treated with aspirin and beta blockers.

Aspirin is an anticoagulant; in other words, it reduces the formation of blood clots in a coronary artery already narrowed by atherosclerosis. Not everyone can or should take aspirin; this should be discussed with a physician.

Beta blockers slow the heart rate, lower blood pressure, and decrease the heart's force of contraction. This decreases the heart's workload and oxygen consumption. The slowed heart rate allows more time for blood to circulate through the coronary arteries to the oxygen-deprived areas of the heart. They are often prescribed to help prevent a second heart attack.

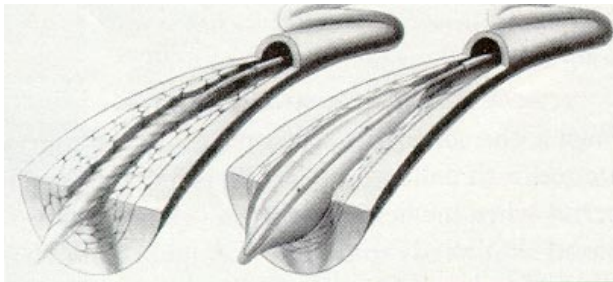
A third commonly used class of medications known as ACE inhibitors are used to treat patients whose heart function has become impaired. These drugs decrease blood pressure by inhibiting the formation of angiotensin, a substance in the blood that constricts blood vessels and stimulates the adrenal glands to release the sodium retaining hormone aldosterone.



In 1993, 41 Pennsylvania hospitals offered advanced cardiac care services such as coronary bypass surgery and balloon angioplasty.

BALLOON ANGIOPLASTY

In this procedure, a physician inserts a catheter (a long thin tube) into an artery in an arm or leg and guides it to the obstructed coronary artery. A second tube with a deflated balloon on its tip is passed inside the first, and the balloon is inflated where the artery is blocked. This enlarges the artery's diameter by compressing the plaque.



How angioplasty works

The American Heart Association recommends that a patient have angioplasty at a hospital that performs at least 200 of these procedures a year. The hospital should also be equipped to perform emergency bypass operations if the angioplasty fails. In addition, a physician doing the angioplasty should perform at least 75 angioplasties annually.

The risks associated with angioplasty are low; less than 1% of patients die. However, in some cases, complications can occur which may lead to a heart attack or necessitate bypass surgery. In about 25% of the people who have had angioplasty, the artery narrows again within six months.

CORONARY ARTERY BYPASS GRAFT SURGERY (CABG)

Physicians usually recommend this procedure for patients with severe blockages of two or more of the major arteries to the heart. The cardiac surgeon bypasses the blocked part of the coronary artery using a piece of blood vessel taken from another part of the body (usually a leg vein or an artery from the chest). This restores the blood supply to the heart. As with any open heart surgery, there are risks associated with CABG surgery although the mortality rate associated with this procedure appears to be declining. In 1993, Pennsylvanians who had CABG surgery had a 2.9% mortality rate, a decline from 3.9% in 1990.

What Happens After a Heart Attack?

It's important to continue working to reduce your risk even after successful treatment of a heart attack. Once a heart attack has occurred, the chances of another immediate or future attack are substantial. During the first four years after a heart attack, the rate of having a second attack is 20% for women and 16% for men. Within six years, this increases to 31% of women and 23% of men. In addition, 27% of men and 44% of women will die within one year after having a heart attack. About two-thirds of heart attack patients don't make a full recovery, but 88% of those under age 65 are able to return to work.

The odds of having a first or subsequent heart attack can be lessened through conscientious lifestyle changes.

Lifestyle Treatments for Coronary Artery Disease

– Reducing your risk now and in the future

The best way to prevent progressive damage to the heart is to prevent a heart attack in the first place.

Coronary artery disease is a progressive illness. Once it develops, it cannot be cured. Fortunately, lifestyle changes can have a greater impact on coronary artery disease than on practically any other disease. These actions can control the progression of atherosclerosis, lowering blood pressure, and can prevent a first or subsequent heart attack.

A heart-healthy lifestyle is a must even for those who are taking medication to lower cholesterol, reduce blood pressure, control chest pain, and in those who have undergone bypass surgery or angioplasty. This involves reducing your risk factors for developing coronary artery disease.

Risk Factors

We can divide the risk factors for coronary artery disease into two groups: those that cannot be changed and those that can. The more risk factors a person has, the greater the chance of developing coronary artery disease.

Risk factors that cannot be changed

AGE — Men older than 45 and women older than 55 have a higher risk. More than half the people with heart attacks, and four out of five who die of a heart attack, are over the age of 65.

FAMILY HISTORY — The risk increases if a parent or sibling has had a premature heart attack (before age 55 in men and age 65 in women).

GENDER — Coronary artery disease is more common in young men than young women, but the rates rise dramatically among women after menopause, when estrogen levels drop. This is also true for women who undergo premature menopause. The risk for such women is equal to that of men of the same age.

Some studies have indicated that estrogen replacement can provide protection for older women. This therapy may increase the risk of breast cancer in some women, and should be discussed with a physician.

RISK FACTORS (you can't change)

Age

Family
History

Gender



Risk factors that can be changed

CIGARETTE SMOKING — Cigarette smoking is the most dangerous risk factor for coronary artery disease, twice that for non-smokers. It is the greatest risk factor for sudden cardiac death. Much can be gained, however, by quitting. When people stop smoking, regardless of how long or how much they’ve smoked, their risk of death from heart attack and stroke rapidly declines. Three years after quitting smoking, the risk of heart attack for people who smoked up to a pack per day is almost the same as for people who never smoked.

RISK FACTORS
(you can change)

Cigarette Smoking

HIGH BLOOD PRESSURE (HYPERTENSION) — High blood pressure killed 37,520 Americans in 1993 and contributed to the death of thousands more through heart attack, stroke, and heart failure.

Anyone with hypertension increases their risk of coronary artery disease. Men are at greater risk than women until ages 55-75 when the risk is the same. After that, the risk for women is higher. African-Americans have moderate high blood pressure twice as often as whites and severe hypertension three times as often, which greatly increases their risk of stroke as well. The mortality rate for African-American women is significantly higher than for Caucasian women.

High Blood Pressure

High blood pressure can usually be controlled by proper diet, including salt restrictions, weight loss, exercise, and medication.

High Blood Cholesterol

HIGH BLOOD CHOLESTEROL — The risk of heart attack rises as blood cholesterol levels increase, especially if other risk factors such as smoking or high blood pressure are present. There are two types of cholesterol: LDL (known as the “bad cholesterol”) and HDL (the “good” kind). LDL is “bad” because it can be deposited in the arteries. This begins and contributes to the process of atherosclerosis. HDL is “good” because it protects against atherosclerosis by removing cholesterol from artery walls. Current guidelines from the National Cholesterol Education Program recommend that a person with coronary artery disease should have an LDL cholesterol reading of less than 100.

Diabetes

Physical Inactivity

Individuals with known coronary artery disease can slow the advance of atherosclerotic plaque by aggressively lowering their blood cholesterol for as little as two years. This can also reduce the formation of new plaque, reverse narrowing due to atherosclerosis, and reduce the frequency of heart attacks. This can be accomplished through a low fat, low cholesterol diet, moderate exercise and medication.

DIABETES — Diabetes developing during childhood and in the young adult years can substantially shorten life unless treated aggressively. More than 80% of people with diabetes die of cardiovascular disease. Diabetes tends to accelerate heart vessel disease, increasing the risk of heart attack. Individuals can usually control diabetes by strictly following proper eating habits, through exercise and weight control, and by medication prescribed by a doctor. However, lowering blood sugar levels through diet and medication does not appear to eliminate the increased risk of coronary artery disease associated with diabetes. Therefore, it is particularly important for people with diabetes to control other risk factors, such as smoking and high blood cholesterol levels.

PHYSICAL INACTIVITY — Lack of exercise can lead to excess weight and higher blood cholesterol levels. People who are more than 30% over their ideal body weight are more likely to develop heart disease, even with no other risk factors. Coronary artery disease is twice as likely to develop in inactive people than in active people, independent of other risk factors. A number of studies have shown an association between exercise and reduced heart disease. A common recommendation is 30 minutes of moderate exercise at least three times per week.

Multiple Risk Factors

Having several risk factors for coronary artery disease multiplies the odds of developing the disease. For example, the respected Framingham Heart study predicts that 31 out of 1,000 men with no risk factors will have a heart attack within eight years. The number jumps to 46 among male cigarette smokers, 64 among male smokers with high cholesterol levels, and 95 among male smokers with high cholesterol who also have high blood pressure. Fortunately, reducing several risk factors simultaneously reduces the overall risk at a greater rate than reducing only one risk.

A Final Word

Focus on Heart Attack is an important contribution to the research and reporting of hospital, physician, community and payor-related information. Health care providers, health care purchasers, insurers, researchers, consumers and policy makers can now explore how to use the information in understanding the differences in cost, rates and patient outcomes of heart attacks in Pennsylvania.



A Word Of Caution:

Do not use the statistics in this report during an emergency situation. The best decision in the event of a heart attack, or even a suspected one, is to get treatment as quickly as possible at the nearest hospital.

The treatment of a heart attack is complex. Each case is unique. Only qualified physicians should diagnose and prescribe treatment.

This report *should not* be used as the sole basis for making provider decisions.

Understanding Hospital and Practice Group Information

ACTUAL TO EXPECTED PATIENT MORTALITY (DEATH) RATES

The Council uses a complex methodology to measure mortality. First, the Council identifies a list of significant health factors which have an impact upon patients' risk of dying from a heart attack. In compiling this list, the Council conducts a thorough examination of the scientific literature, and solicits feedback from medical providers. The Council also receives technical advice from its Technical Advisory Group, a committee of physicians and health researchers, as well as from a Clinical Advisory Panel, newly formed specifically for this project.

The next step is to determine which risk factors had a significant overall impact on those patients hospitalized for a heart attack in 1993. The rating system gives a certain weight (or importance) to key health facts for each patient hospitalized for a heart attack in 1993. All these risk factors are taken into consideration to create a risk profile for each patient.

By looking at all the individual patient data together, the Council is able to calculate an expected mortality rate for each hospital and physician practice group. The statistics are adjusted for the higher or lower risk of the patients of each provider. This provides a fair basis for comparison. By adjusting for risk, hospitals and physicians are given extra credit for having treated "sicker" patients or patients with more risk factors. The higher the risk, the more deaths to be expected.

The graphs in Figures A and D allow you to compare the actual mortality rate with the expected mortality rate. These are expressed as percentage points. The expected mortality rate is expressed as a range of percentages representing the lowest mortality rate you could expect to the highest. The expected range is based on a calculation that takes into account the risk factors of the patients treated at each hospital. The horizontal bar represents the expected range for that calculation. The length of the bar is based on a combination of patient volume and patient risk factors. There are two factors that can affect the length of the expected (horizontal) bar: 1) the number of cases at each hospital and 2) the predicted probability of death for those patients based on their risk factors. Generally, the more patients a hospital treats and/or the greater the likelihood of death or survival, the smaller the bar will be.

HOW TO INTERPRET THE RESULTS

If the point falls within the bar, it means that the difference between the actual mortality rate and the expected rate was not statistically significant. If the point falls to the left of the bar, the actual rate was significantly lower statistically than what was expected. This is highlighted by an open bullet (°) next to the hospital or practice group name. If the point falls to the right, the actual rate was significantly higher than the expected rate. This is highlighted by a single asterisk (*) next to the hospital or practice group name. A point that is statistically significant will always fall *clearly* outside the bar.



WHAT WE MEAN BY STATISTICAL SIGNIFICANCE

Scientists use the term “statistical significance” to indicate when a measurement or calculation is certain enough to be caused by something other than chance or random variation. If the actual mortality rate falls outside the expected bar, we can conclude with 95% certainty that the difference between what was expected and what actually occurred was not because of chance or random variation. If the actual mortality rate falls inside the bar, the difference may have been due to chance or random variation.

ABOUT FIGURE D

Figure D lists all the physician practice groups and individual physicians that practiced at a given hospital under that hospital name. Many physicians practiced at more than one hospital so they will be listed more than once. Only physician practice groups who treated 30 or more cases in 1993 have received a mortality rate. For those groups, the rate is interpreted in the same way as the hospitals’ rate: the actual mortality compared to the expected mortality with symbols to highlight mortality rates which were higher or lower than expected given patient risk factors. These groups are listed first. The individual physicians who belong to these groups are listed under the appropriate group along with the number of cases they treated.

Next, the practice groups with less than 30 cases are listed. No mortality rate is reported. Their individual physicians are also listed along with their case numbers.

Finally, solo practitioners (physicians not affiliated with a group practice) are listed with their case numbers. No mortality rate is reported.

RISK ADJUSTED AVERAGE LENGTH OF STAY

The length of hospital stay has also been adjusted to take patient risk factors into account. The length of stay graphs (Figure B) are interpreted in the same way as the mortality graphs. An expected length of hospitalization is calculated and can be compared to the actual length of stay. These figures are expressed in number of days in the hospital. An asterisk next to the hospital name means that a hospital’s actual length of stay was significantly greater than expected. An open bullet next to the hospital name means the length of stay was significantly less than expected.

THE RELEVANCE OF PRACTICE GROUP REPORTING

The physicians who treat patients for heart attack are generally cardiologists, internists, cardiac surgeons, or family/general practitioners. More than 5,000 physicians statewide treated at least one heart attack case in 1993. (Physicians may no longer be affiliated with the hospitals and practice groups listed in this report.)

Feedback from physicians indicates that the care of a heart attack patient is generally not provided by one physician; that, in fact, several physicians, affiliated together in what is known as a physician practice group, are often involved in the course of treatment. While the number of cases treated by individual physicians was, for the most part, too small for reliable statistics, 191 physician practice groups, who treated 44% of the heart attack patients included in this report, did treat enough cases so that their statistics could be reported with statistical confidence.

CHARGES VS. REVENUES

The amount a hospital bills for a patient's care is known as the charge. What the hospital actually receives is known as revenue. This report lists the average charges billed by hospitals for the treatment of heart attack. The charges are derived from hospital billing forms, which list the actual charges for each patient. However, hospitals generally do not receive full reimbursement of their charges. Hospitals frequently negotiate discounts with insurance companies or other large purchasers of health care services. The amount collected by the hospital may differ substantially from the amount billed.

An analogy can be made to the purchase of an automobile. Each automobile has a manufacturer's suggested list price (the charge). But the amount the buyer actually pays depends upon his or her ability to negotiate a discount from that charge. Purchasers of fleet vehicles have greater clout in negotiating discounts than do the buyers of a single vehicle. In the same way, large group purchasers have greater purchasing power when buying insurance or negotiating health care discounts than do privately or self-insured individuals.

37% of patients hospitalized for heart attack in Pennsylvania are transferred from general acute care hospitals to hospitals with advanced cardiac services

TRANSFERS FROM HOSPITAL TO HOSPITAL

The treatment and management of a heart attack involve a number of clinical decisions. When a patient has a heart attack, they are usually taken immediately to the nearest hospital where the first course of action is to stabilize the patient, and prevent further damage to the heart. This is done by clearing the blocked artery and restoring blood flow.

Once the heart attack is treated, the patient must be diagnosed and treated for the underlying obstructive coronary artery disease which caused the attack, and is likely to cause future attacks if not corrected. In addition to medication, the patient can undergo cardiac catheterization, followed by balloon angioplasty or coronary bypass surgery.

Some hospitals have the capability of providing all these services while others have more limited technical capability. This does not mean that patients will necessarily receive better treatment for a heart attack at hospitals with advanced cardiac facilities than at acute care hospitals, only that additional services are available. As a result, a patient may receive initial treatment in one hospital, be stabilized there, and then be transferred to another hospital for diagnosis of the coronary disease and further treatment. In general, hospitals with advanced cardiac services treat a high percentage of heart attack patients which are stabilized at another facility and then transferred for additional treatment.

Decisions with respect to whether, when, and where to transfer a patient will vary across hospitals and physicians.

While the Council's methodology accounts for transfers in calculating risk-adjusted mortality rates and risk-adjusted lengths of stay, it is difficult to compare the statistics of hospitals that provide advanced cardiac services such as catheterizations, balloon angioplasty, and open heart surgery with those of hospitals that do not provide these services, but transfer many of their patients to advanced cardiac care hospitals for additional treatment.

For these reasons, the Council has reported the **Acute Care Hospitals with Advanced Cardiac Services** (advanced catheterization, balloon angioplasty, coronary bypass surgery) separately from the **Acute Care Hospitals** (those without these additional services). The Council has also provided a *Technical Report*, which contains more detailed information about the patterns and outcomes of the transferred patients and the differences among hospitals. Interested parties who wish to further explore the transfer issue in more detail should consult the *Technical Report*.

The number of cases used in this report varies from section to section for methodology reasons. For additional detail, please refer to the *Technical Report*.



How to Read Figures A and B

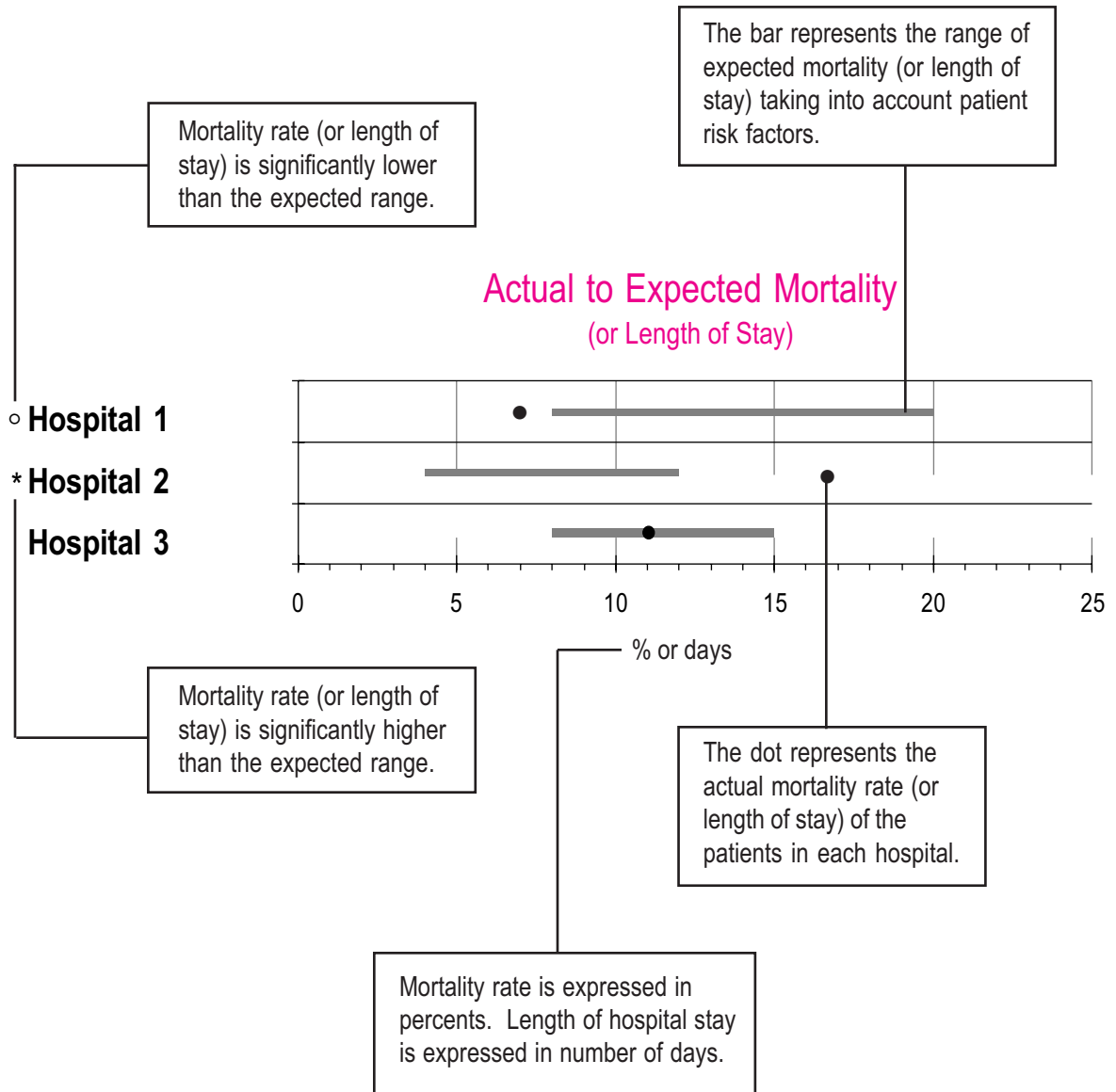
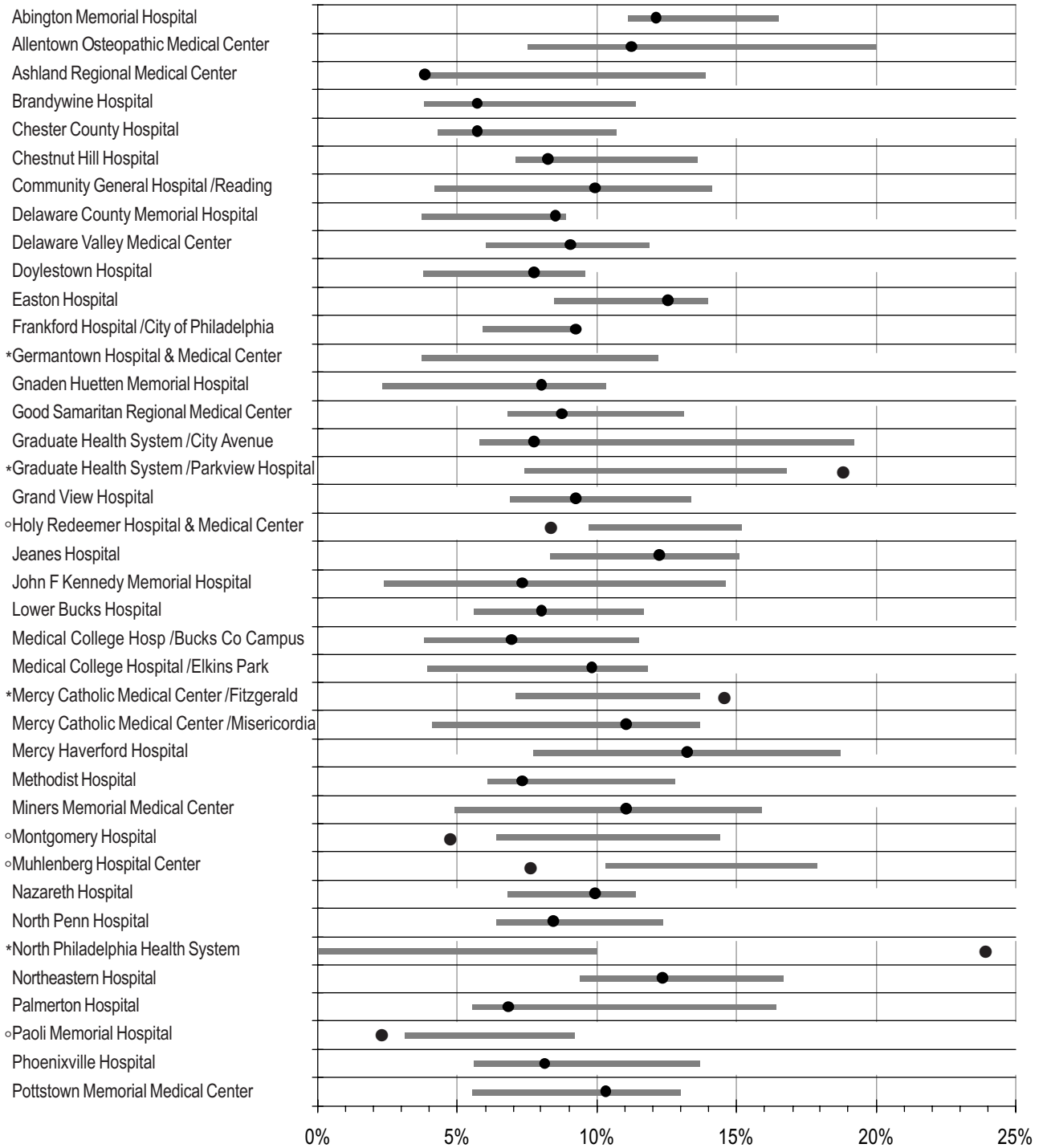


Figure A Actual to Expected Mortality
Heart Attack

ACUTE CARE HOSPITALS

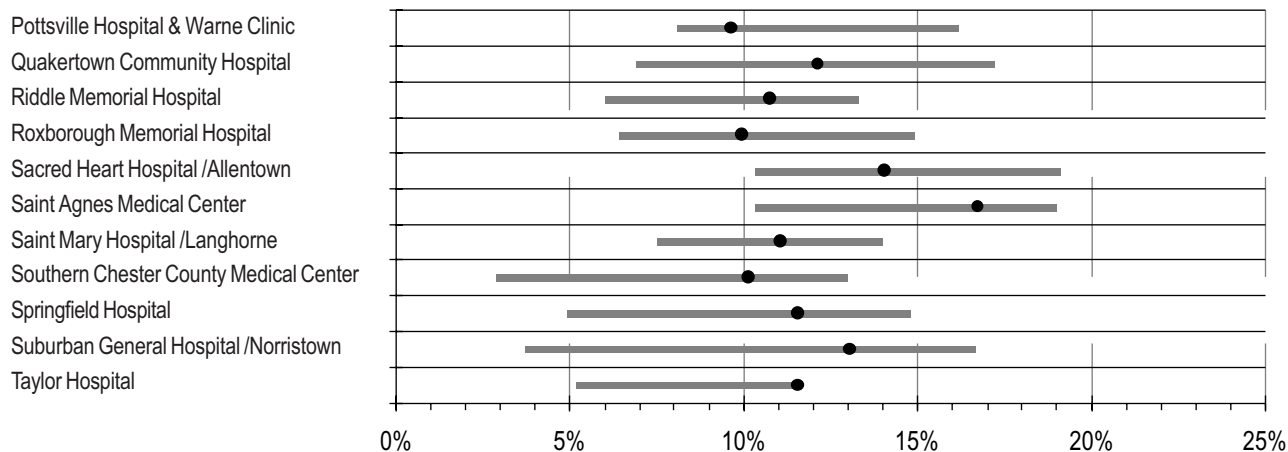


KEY

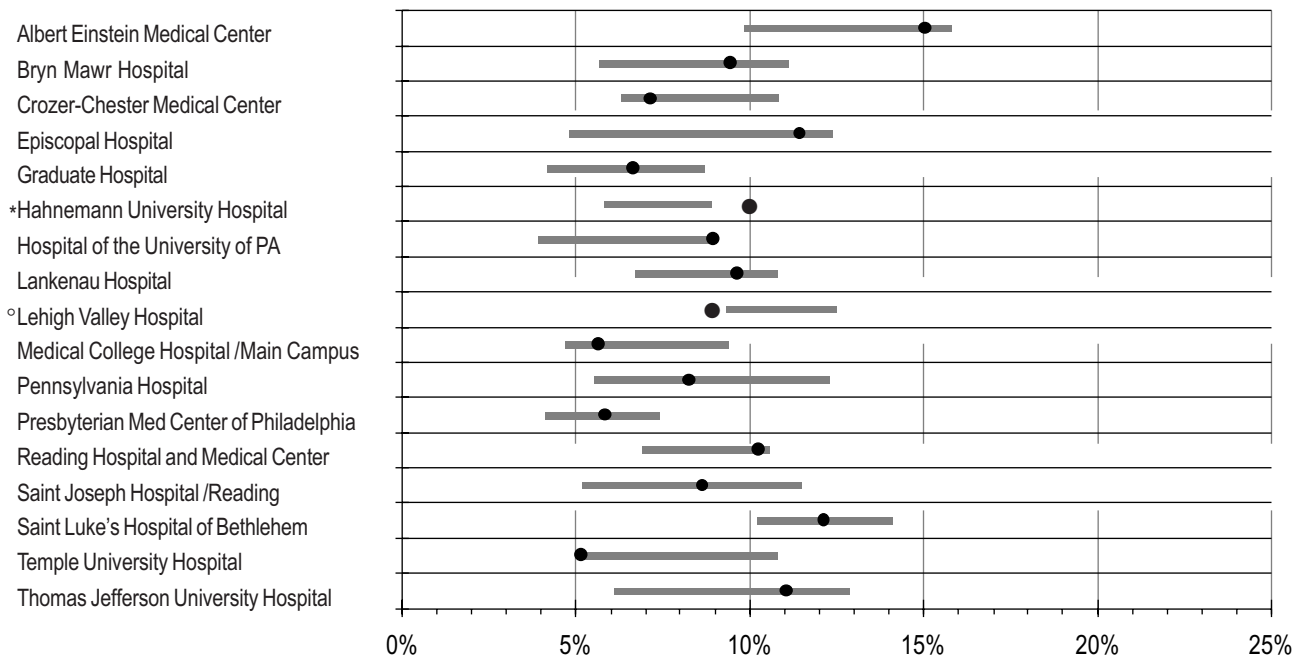
- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Figure A Actual to Expected Mortality
Heart Attack

ACUTE CARE HOSPITALS



ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES

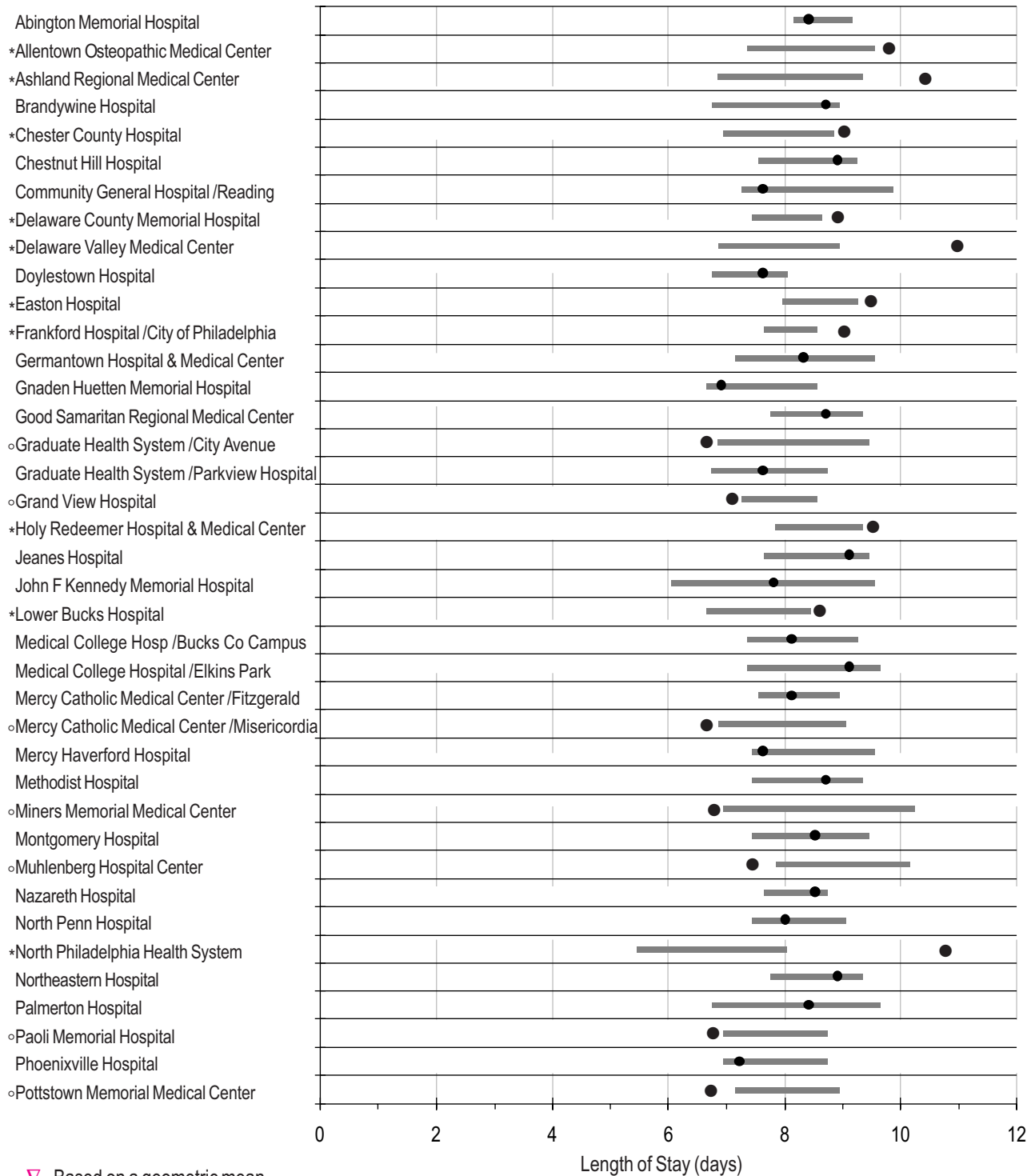


KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- ° Actual Mortality significantly lower than Expected Range

Figure B Actual to Expected Length of Stay, 1993[▽]
Heart Attack

ACUTE CARE HOSPITALS



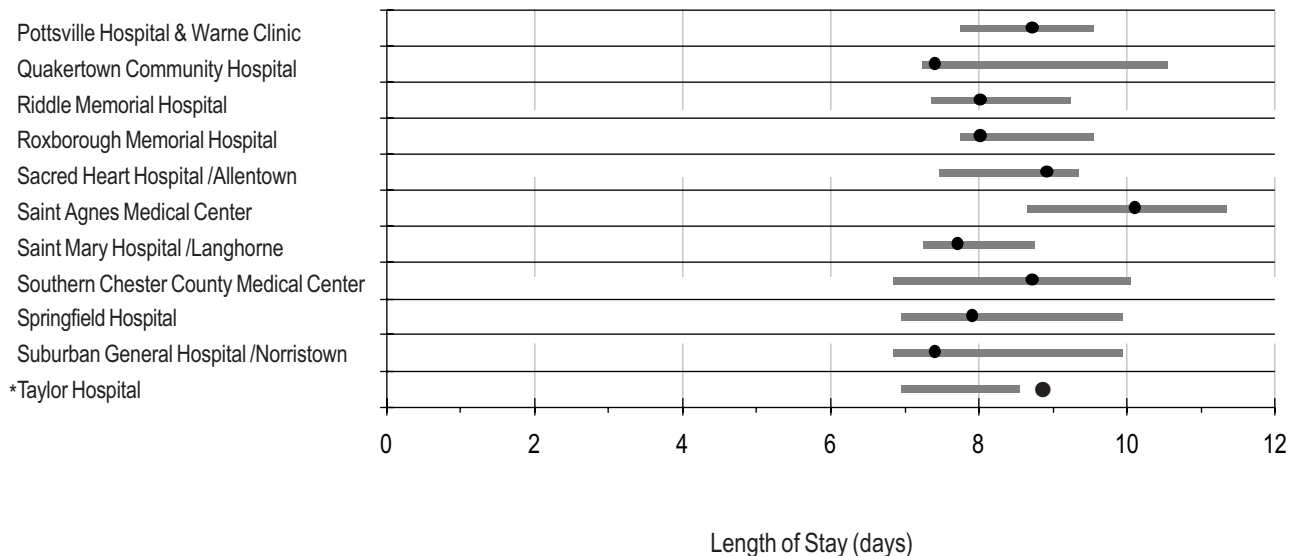
▽ Based on a geometric mean

KEY

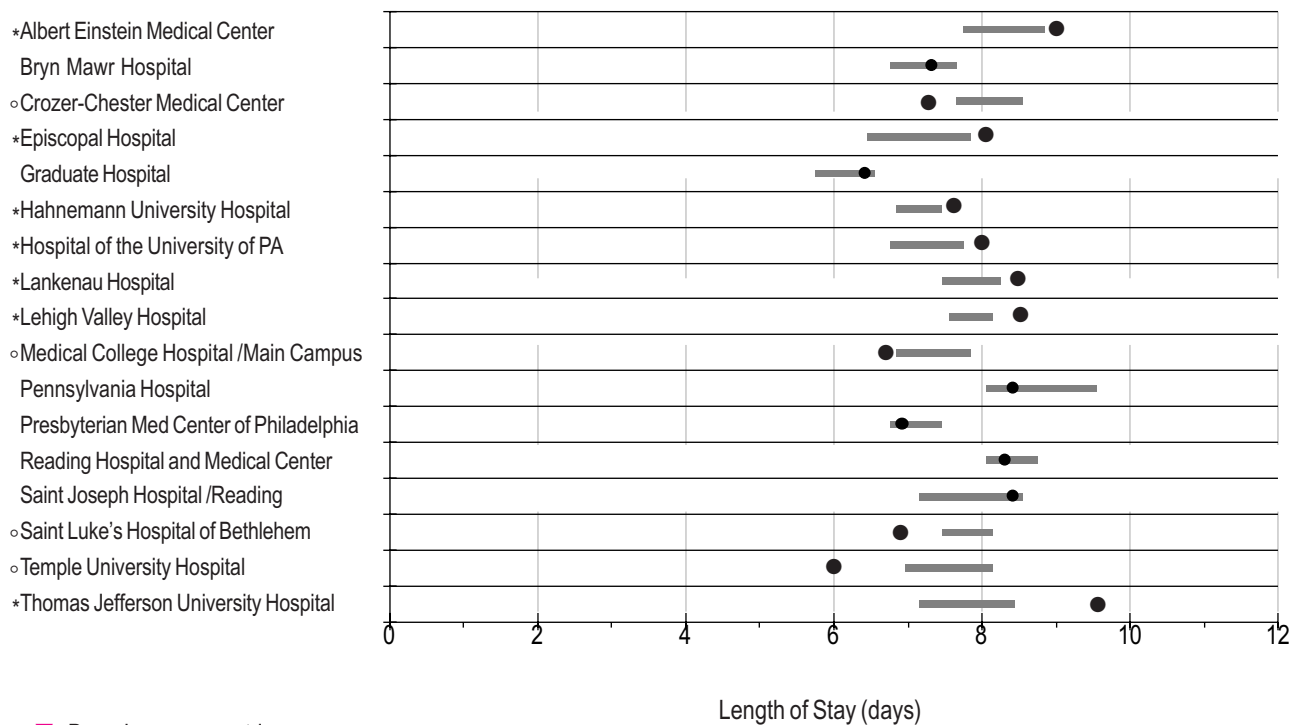
- Actual Length of Stay, 1993
- Range of Expected Length of Stay
- * Actual Length of Stay significantly higher than Expected Range
- o Actual Length of Stay significantly lower than Expected Range

Figure B Actual to Expected Length of Stay, 1993[▽]
Heart Attack

ACUTE CARE HOSPITALS



ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES



▽ Based on a geometric mean

KEY

- Actual Length of Stay, 1993
- Range of Expected Length of Stay
- * Actual Length of Stay significantly higher than Expected Range
- o Actual Length of Stay significantly lower than Expected Range

Figure C **Average Charges, 1993**
Heart Attack

ACUTE CARE HOSPITALS

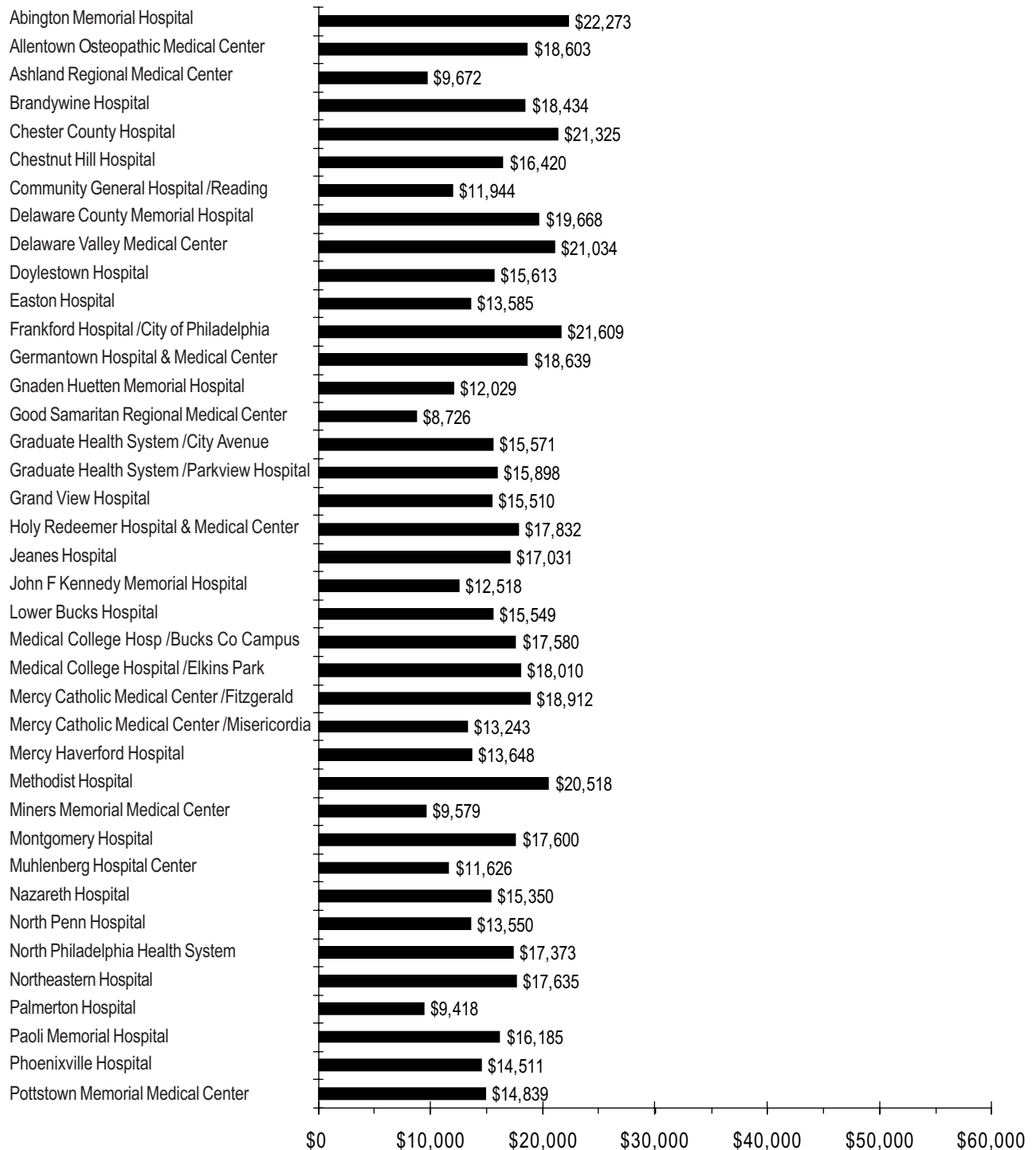
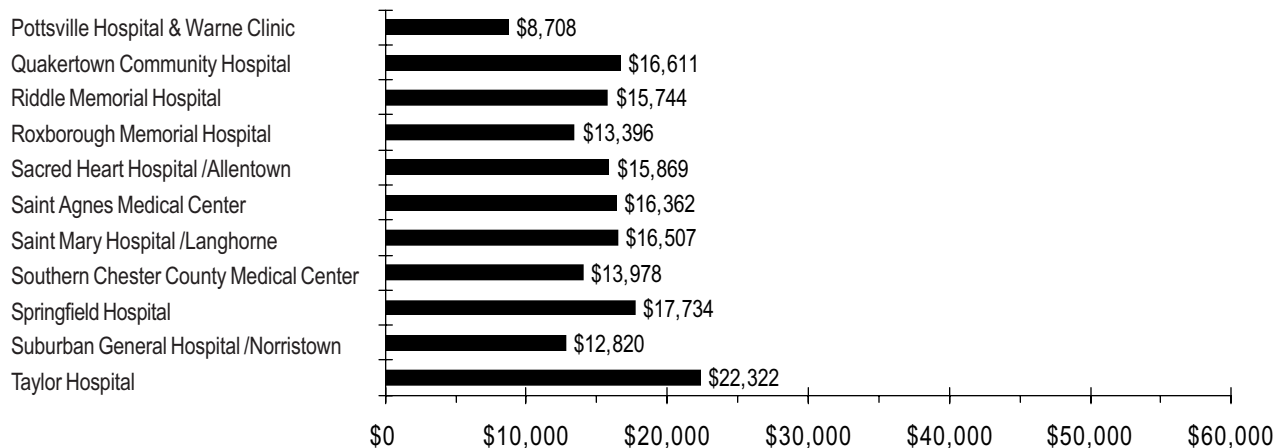


Figure C

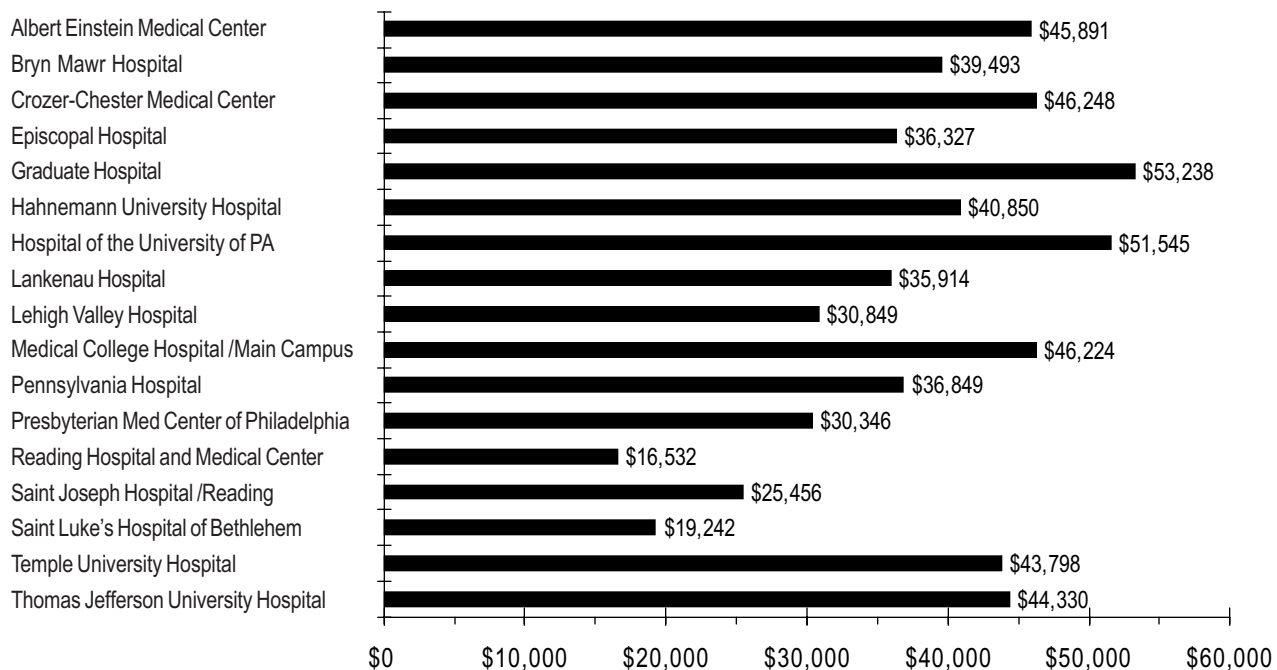
Average Charges, 1993

Heart Attack

ACUTE CARE HOSPITALS



ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES



Acute Care Hospitals, by County, 1993

Heart Attack

Hospitals	Cases		Mortality Rate %		Length of Stay	
	#	Transfer Out %	Actual	Expected Range	Actual	Expected Range
Berks County						
Community General Hospital /Reading	71	35.2	9.9	4.2 - 14.1	7.6	7.3 - 9.8
Bucks County						
Delaware Valley Medical Center	134	54.5	9.0	6.0 - 11.9	*11.1	6.9 - 8.9
Doylestown Hospital	209	33.5	7.7	3.8 - 9.6	7.6	6.8 - 8.0
Grand View Hospital	217	31.3	9.2	6.9 - 13.4	°7.2	7.3 - 8.5
Lower Bucks Hospital	162	54.3	8.0	5.6 - 11.7	*8.5	6.7 - 8.4
Medical College Hospital /Bucks County Campus	130	46.2	6.9	3.8 - 11.5	8.1	7.4 - 9.2
Quakertown Community Hospital	58	46.6	12.1	6.9 - 17.2	7.4	7.3 - 10.5
Saint Mary Hospital /Langhorne	200	36.5	11.0	7.5 - 14.0	7.7	7.3 - 8.7
Carbon County						
Gnaden Huetten Memorial Hospital	87	28.7	8.0	2.3 - 10.3	6.9	6.7 - 8.5
Palmerton Hospital	73	56.2	6.8	5.5 - 16.4	8.4	6.8 - 9.6
Chester County						
Brandywine Hospital	105	49.5	5.7	3.8 - 11.4	8.7	6.8 - 8.9
Chester County Hospital	140	51.4	5.7	4.3 - 10.7	*9.0	7.0 - 8.8
Paoli Memorial Hospital	131	47.3	°2.3	3.1 - 9.2	°6.8	7.0 - 8.7
Phoenixville Hospital	124	37.9	8.1	5.6 - 13.7	7.2	7.0 - 8.7
Southern Chester County Medical Center	69	56.5	10.1	2.9 - 13.0	8.7	6.9 - 10.0
Delaware County						
Delaware County Memorial Hospital	246	27.2	8.5	3.7 - 8.9	*8.9	7.5 - 8.6
Mercy Catholic Medical Center /Fitzgerald	212	21.7	*14.6	7.1 - 13.7	8.1	7.6 - 8.9
Mercy Haverford Hospital	91	28.6	13.2	7.7 - 18.7	7.6	7.5 - 9.5
Riddle Memorial Hospital	150	44.7	10.7	6.0 - 13.3	8.0	7.4 - 9.2
Springfield Hospital	61	47.5	11.5	4.9 - 14.8	7.9	7.0 - 9.9
Taylor Hospital	174	42.0	11.5	5.2 - 11.5	*8.8	7.0 - 8.5
Lehigh County						
Allentown Osteopathic Medical Center	80	26.3	11.2	7.5 - 20.0	*9.8	7.4 - 9.5
Muhlenberg Hospital Center	117	49.6	°7.7	10.3 - 17.9	°7.4	7.9 - 10.1
Sacred Heart Hospital /Allentown	136	31.6	14.0	10.3 - 19.1	8.9	7.5 - 9.3

* Actual is significantly higher than the Expected Range

° Actual is significantly lower than the Expected Range

The hospital names in this report are listed as they were licensed in 1993. These hospital names may have changed since 1993.

Acute Care Hospitals, by County, 1993

Heart Attack

Hospitals	Cases		Mortality Rate %		Length of Stay	
	#	Transfer Out %	Actual	Expected Range	Actual	Expected Range
Montgomery County						
Abington Memorial Hospital	413	25.2	12.1	11.1 - 16.5	8.4	8.2 - 9.1
Holy Redeemer Hospital & Medical Center	290	50.0	^o 8.3	9.7 - 15.2	[*] 9.5	7.9 - 9.3
Medical College Hospital /Elkins Park	102	42.2	9.8	3.9 - 11.8	9.1	7.4 - 9.6
Montgomery Hospital	125	46.4	^o 4.8	6.4 - 14.4	8.5	7.5 - 9.4
North Penn Hospital	202	44.6	8.4	6.4 - 12.4	8.0	7.5 - 9.0
Pottstown Memorial Medical Center	146	42.5	10.3	5.5 - 13.0	^o 6.7	7.2 - 8.9
Suburban General Hospital /Norristown	54	42.6	13.0	3.7 - 16.7	7.4	6.9 - 9.9
Northampton County						
Easton Hospital	272	27.6	12.5	8.5 - 14.0	[*] 9.5	8.0 - 9.2
Philadelphia County						
Chestnut Hill Hospital	184	41.8	8.2	7.1 - 13.6	8.9	7.6 - 9.2
Frankford Hospital /City of Philadelphia	610	42.5	9.2	5.9 - 9.3	[*] 9.0	7.7 - 8.5
Germantown Hospital & Medical Center	82	31.7	[*] 14.6	3.7 - 12.2	8.3	7.2 - 9.5
Graduate Health System /City Avenue	52	26.9	7.7	5.8 - 19.2	^o 6.8	6.9 - 9.4
Graduate Health System /Parkview Hospital	95	31.6	[*] 18.9	7.4 - 16.8	7.6	6.8 - 8.7
Jeanes Hospital	205	49.3	12.2	8.3 - 15.1	9.1	7.7 - 9.4
John F Kennedy Memorial Hospital	41	53.7	7.3	2.4 - 14.6	7.8	6.1 - 9.5
Mercy Catholic Medical Center /Misericordia	73	27.4	11.0	4.1 - 13.7	^o 6.8	6.9 - 9.0
Methodist Hospital	164	53.0	7.3	6.1 - 12.8	8.7	7.5 - 9.3
Nazareth Hospital	395	38.0	9.9	6.8 - 11.4	8.5	7.7 - 8.7
North Philadelphia Health System	50	30.0	[*] 24.0	0.0 - 10.0	[*] 10.9	5.5 - 8.0
Northeastern Hospital	203	37.9	12.3	9.4 - 16.7	8.9	7.8 - 9.3
Roxborough Memorial Hospital	141	28.4	9.9	6.4 - 14.9	8.0	7.8 - 9.5
Saint Agnes Medical Center	126	47.6	16.7	10.3 - 19.0	10.1	8.7 - 11.3
Schuylkill County						
Ashland Regional Medical Center	79	50.6	3.8	3.8 - 13.9	[*] 10.5	6.9 - 9.3
Good Samaritan Regional Medical Center	206	44.7	8.7	6.8 - 13.1	8.7	7.8 - 9.3
Miners Memorial Medical Center	82	61.0	11.0	4.9 - 15.9	^o 6.9	7.0 - 10.2
Pottsville Hospital & Warne Clinic	136	30.9	9.6	8.1 - 16.2	8.7	7.8 - 9.5

Acute Care Hospitals with Advanced Cardiac Services, by County, 1993

Heart Attack

Hospitals	Cases			Mortality Rate %		Length of Stay	
	#	Transfer In % A [▽]	Transfer In % B [▽]	Actual	Expected Range	Actual	Expected Range
Berks County							
Reading Hospital and Medical Center	620	16.8	24.6	10.2	6.9 - 10.6	8.3	8.1 - 8.7
<input checked="" type="checkbox"/> Saint Joseph Hospital /Reading	174	18.4	23.2	8.6	5.2 - 11.5	8.4	7.2 - 8.5
Delaware County							
<input checked="" type="checkbox"/> Crozer-Chester Medical Center	352	17.6	21.0	7.1	6.3 - 10.8	°7.4	7.7 - 8.5
Lehigh County							
Lehigh Valley Hospital	826	46.9	52.0	°9.0	9.3 - 12.5	*8.5	7.6 - 8.1
Saint Luke's Hospital of Bethlehem	512	40.6	47.5	12.1	10.2 - 14.1	°6.9	7.5 - 8.1
Montgomery County							
Bryn Mawr Hospital	297	32.0	42.3	9.4	5.7 - 11.1	7.3	6.8 - 7.6
Lankenau Hospital	417	39.6	55.2	9.6	6.7 - 10.8	*8.4	7.5 - 8.2
Philadelphia County							
Albert Einstein Medical Center	234	12.4	61.2	15.0	9.8 - 15.8	*9.0	7.8 - 8.8
Episcopal Hospital	105	29.5	60.6	11.4	4.8 - 12.4	*8.1	6.5 - 7.8
Graduate Hospital	288	69.8	71.8	6.6	4.2 - 8.7	6.4	5.8 - 6.5
Hahnemann University Hospital	718	84.7	86.8	*10.0	5.8 - 8.9	*7.5	6.9 - 7.4
Hospital of the University of PA	258	57.4	58.5	8.9	3.9 - 8.9	*8.0	6.8 - 7.7
Medical College Hospital /Main Campus	213	58.7	62.4	5.6	4.7 - 9.4	°6.8	6.9 - 7.8
Pennsylvania Hospital	146	27.4	30.7	8.2	5.5 - 12.3	8.4	8.1 - 9.5
Presbyterian Medical Center of Philadelphia	462	77.5	78.6	5.8	4.1 - 7.4	6.9	6.8 - 7.4
Temple University Hospital	158	43.7	64.7	5.1	5.1 - 10.8	°6.0	7.0 - 8.1
Thomas Jefferson University Hospital	163	23.9	51.2	11.0	6.1 - 12.9	*9.6	7.2 - 8.4

[▽] Transfer In %-A represents the percent of an advanced cardiac care hospital's heart attack patients that were transferred in from another hospital, where the heart attack is listed as the principal reason for admission. (They are the transfer patients in the study population.) Many patients are diagnosed with a heart attack at the first hospital, then transferred to an advanced cardiac care hospital where they may be diagnosed for treatment not of the heart attack itself, but for the underlying problem(s), such as atherosclerosis or coronary artery disease, which led to the heart attack. These cases are not included in Transfer In %-A's percentages, and so in some hospitals, the true percent of heart attack patients transferred in for advanced treatment may be under represented due to differences in hospital coding practices. Transfer In %-B, however, does include these patients and so more uniformly represents the percentage of heart attack patients transferred to hospitals for advanced cardiac care services. For more detail, see the *Technical Report*.

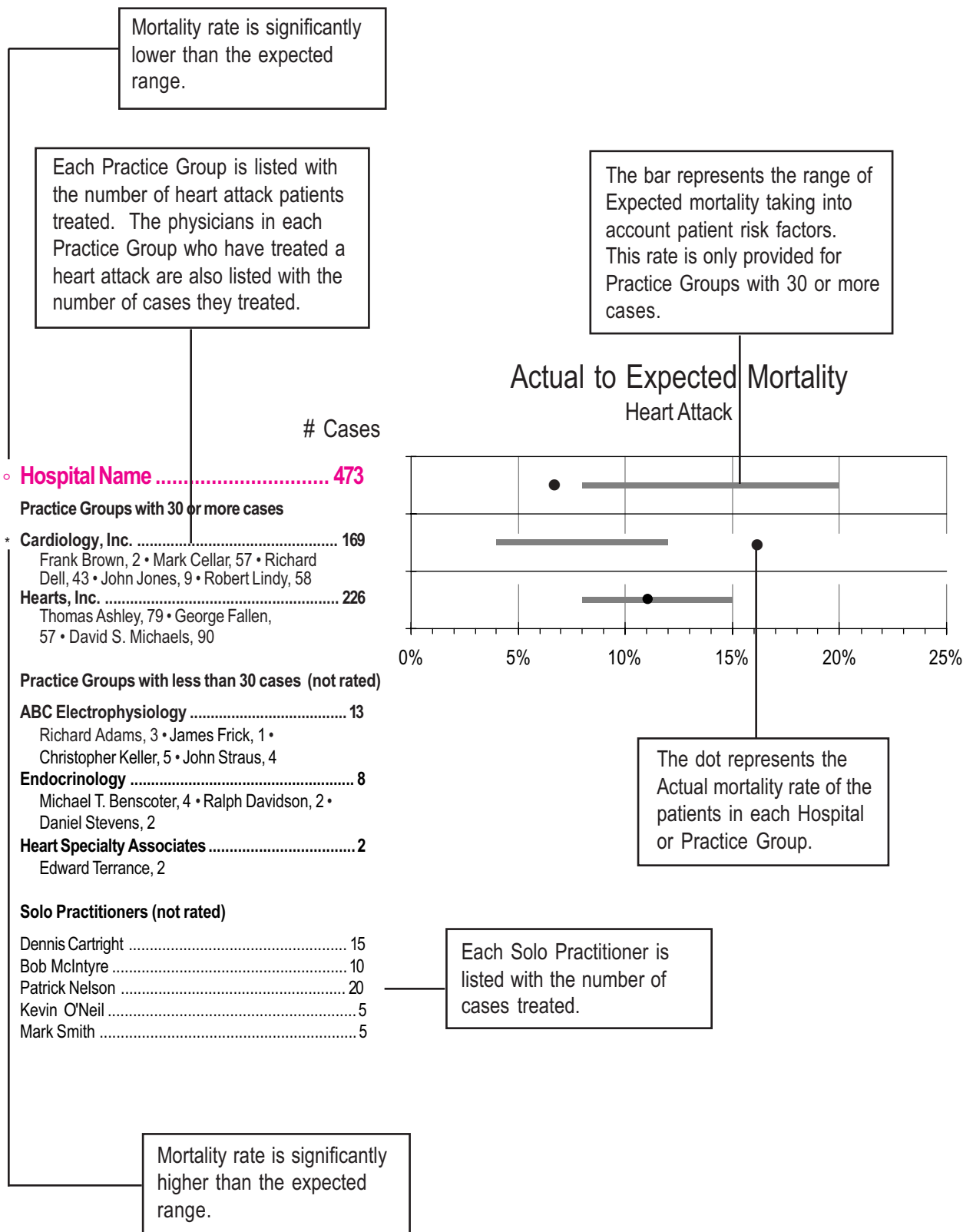
* Actual is significantly higher than the Expected Range ° Actual is significantly lower than the Expected Range

Low percentage of patients transferred in may be due to 1992 opening of open heart surgery unit

Low percentage of patients transferred in may be due to 1993 opening of open heart surgery unit

The hospital names in this report are listed as they were licensed in 1993. These hospital names may have changed since 1993.

How to Read Figure D



ACUTE CARE HOSPITALS

Figure D

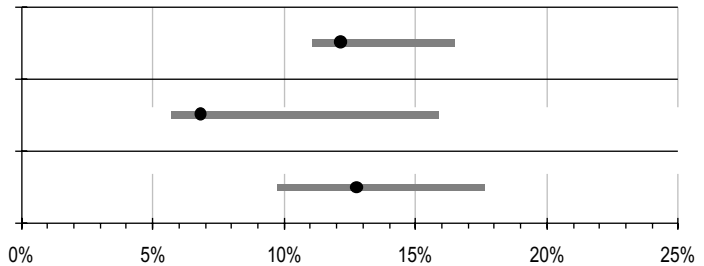
Cases Actual to Expected Mortality Heart Attack

Abington Memorial Hospital 413

Practice Groups with 30 or more cases

Abington Cardiology Associates, Ltd. 88
 James John Delgiorno, 23 • Martin N. Frank, 13 •
 Stephen M. Teich, 31 • Robert A. Watson, III, 21

Abington Medical Specialists 165
 Marc C. Cohen, 32 • William K. Levy, 43 •
 James F. Robertson, 44 • Mark Eric Rosenthal, 46



Practice Groups with less than 30 cases (not rated)

Abington Internal Medicine, PC 5
 Michael A. Musho, 3 • Lenore Roberts Plotkin, 2

Abington Memorial Hospital - Department of Medicine 2
 J. Craig Longenecker, 1 • David Gary Smith, 1

Abington Pulmonary Associates, Ltd. 2
 George C. Christensen, III, 1 • Richard W. Snyder, 1

Arthur B. Lintgen, PC 15
 Paula A. Bononi, 7 • Arthur B. Lintgen, 8

B J Kravitz, P M Roediger and Associates 21
 Hal S. Hockfield, 9 • Bernard J. Kravitz, 8 • Paul
 M. Roediger, 4

Brecher and Knapp, MD's 1
 Michael Allan Knapp, 1

Cooperman/Azarva 4
 Harvey Azarva, 2 • Michael Cooperman, 2

Family Medical Associates of Abington 1
 Joseph F. Mambu, 1

Family Practice Associates of Upper Dublin 1
 Sam C. Masarachia, 1

Hypertension-Nephrology Associates 1
 Harold D. Stein, 1

Jenkintown Internal Medicine 18
 Joseph A. Rigotti, 10 • Keith Ward Sweigard,
 3 • Martin Drew Trichtinger, 5

Jenkintown Medical Associates 1
 David Ling, 1

Leonard Winegrad, DO, Ltd. 2
 Stephen D. Wiener, 2

M J Horman and S P Silverman, Ltd. 6
 Marc J. Horman, 3 • Michael Aaron Pomerantz, 2
 • Stanley P. Silverman, 1

Medical Associates of Southampton 1
 Alexa Faith Malis, 1

North Willow Grove Family Medicine 1
 Seth C. Sands, 1

Petrucci and Horner, MDs 29
 Daniel W. Horner, 6 • William G. Petrucci, 23

Rosenthal/Brecher/Tiger/Dornstein 3
 Perry I. Dornstein, 1 • Melvyn E. Tiger, 2

Seymour Siegel, MD Associates 1
 Seymour Siegel, 1

Skowronski-Mallon 3
 Joseph L. Mallon, Jr., 2 • Theodore J.
 Skowronski, 1

Surgical Associates 1
 Peter R. McCombs, 1

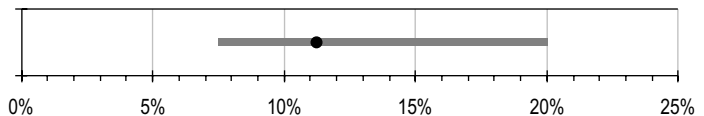
Willow Grove Internal Medicine Associates 2
 Thomas Edward Voyer, 2

Solo Practitioners (not rated)

Jeffrey C. Bado 4
 Elliott Brownstein 2
 Barry R. Cooper 7
 Steven Ira Cowan 1
 Bennett H. Cozen 4
 Fred D. Jacks, Jr. 1
 Marc Mitchell Kress 1
 Stephen E. Litman 6
 Michael Lyons 2
 Warren B. Matthews 2
 Theodore Michael Onifer 2
 Stephen Gary Opsasnick 2
 Joyce Ann Schofield 5

Cases Actual to Expected Mortality Heart Attack

Allentown Osteopathic Medical Center 80



Practice Groups with less than 30 cases (not rated)

Lehigh Internal Medicine Associates 28
 Jonathan W. Bortz, 3 • Thomas V. Brislin, 1 • Robert
 P. Oristaglio, Jr., 1 • Harvey T. Starr, 23

Lehigh Valley Cardiology Associates 9
 Robert H. Biggs, 2 • Ian Chan, 1 • John A. Mannisi,
 5 • Kenneth P. Skorinko, 1

Lehigh Valley Medical Associates 16
 Michael R. Goldner, 6 • James T. McNelis, 8 •
 Margaret S. Tretter, 2

Macungie Medical Group 1
 Hal S. Bendit, 1

Solo Practitioners (not rated)

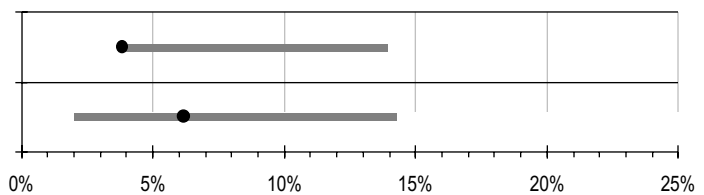
John E. Connelly 3
 Janis E. Fegley 1
 Frank P. Matrone 1
 John B. Paulus 7
 Colin J. Petz 4
 David M. Stein 10

Cases Actual to Expected Mortality Heart Attack

Ashland Regional Medical Center 79

Practice Group with 30 or more cases

Ashland Medical Group 49
 Richard Arthur Best, 19 • Joseph A. Weber, 30



Practice Group with less than 30 cases (not rated)

Phoenix Health Service 3
 Houssam Abdul-Al, 3

James W.T. Hu 2
 Vincent Mirarchi 1
 David C. Scicchitano 13
 Gursharan Singh 7
 Yung Wen Wang 4

Cases Actual to Expected Mortality Heart Attack

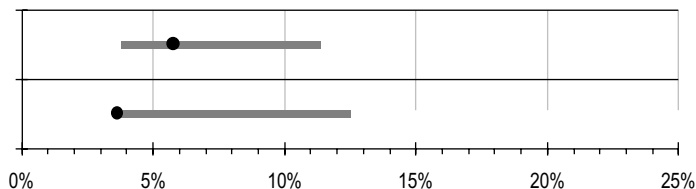
Brandywine Hospital 105

Practice Group with 30 or more cases

Brandywine Valley Cardiovascular Associates 56
 David J. Bernbaum, 16 • Donald Vincent Ferrari, 17 • Arthur B. Hodess, 10 • Thomas S. Metkus, 11 • Alan D. Troy, 2

Practice Groups with less than 30 cases (not rated)

- Brandywine Medical Associates, Inc. 1
Diane S. Rissane, 1
- Brandywine Valley Forge Respiratory Specialists, Inc. .. 1
Frank Barch, 1
- Clinical Renal Associates 1
Hardy L. Sorokin, 1
- Colonial Family Practice 3
Geoffrey M. Burgess, 1 • Robin Ann Dunfee, 1 • Gene F. Uhler, 1
- Downingtown Family Medicine 1
Lawrence K. Alwine, 1
- Downingtown Family Practice 2
Charles J. Barr, 1 • Edward A. Kelly, Jr., 1
- Family Practice of Honey Brook 1
Richard W. Egovalle, 1
- Family Practice Associates 3
Robert L. Parsons, 3
- Ingleside Medical Associates 7
William J. Brown, 7



Solo Practitioners (not rated)

- Dan S. Butoi 4
- Alfonso Cuozzo 1
- C. Ross Darlington 4
- Leonard C. Giunta 2
- Kenneth D. Goldblum 5
- Robert Anthony Insalata 5
- Basil S. Jawad 1
- Robert E. Schmidt 4
- Thomas C. Schwab 3

Cases Actual to Expected Mortality Heart Attack

Chester County Hospital 140

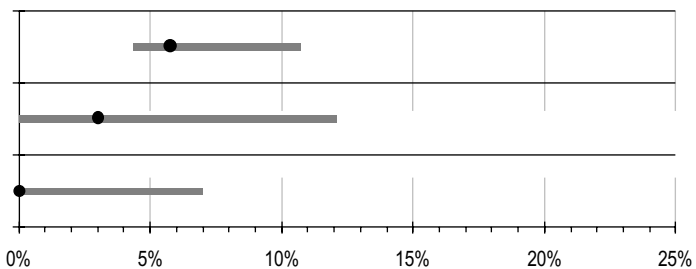
Practice Groups with 30 or more cases

Azam Husain, MD, PC 33
 Azam Husain, 13 • Mian Arshad Jan, 14 • Alan Maniet, 6

Chester County Cardiology Associates 43
 Timothy J. Boyek, 11 • Nicholas A. Vaganos, 17 • Jeffrey M. Wahl, 15

Practice Groups with less than 30 cases (not rated)

- Brandywine Medical Associates, Inc. 1
Stanley G. Kinkaid, 1
- Chester County Internal Medicine 1
Ronald J. Werrin, 1
- Chester County Surgical 1
Kenneth Albert Witterholt, 1
- Downingtown Family Practice 1
Charles J. Barr, 1
- Family Practice Associates 3
Robert L. Parsons, 3
- Internal Medicine Associates of West Chester 13
Bernard S. Burke, 8 • Isaac Ti-Yuen Tam, 5
- Kennett Family Practice Associates 2
Cheryl A. Hlavac, 1 • Nancy Torhan Kenney, 1
- Myers, Squire, Limpert Family Practice 6
George H. Limpert, 1 • Boyd C. Myers, 2 • Karen M. Squire, 3
- Pulmonary Diseases, Ltd. 1
John Hahn Roberts, 1
- West Chester Family Practice 1
Antoninus Joseph Manos, 1

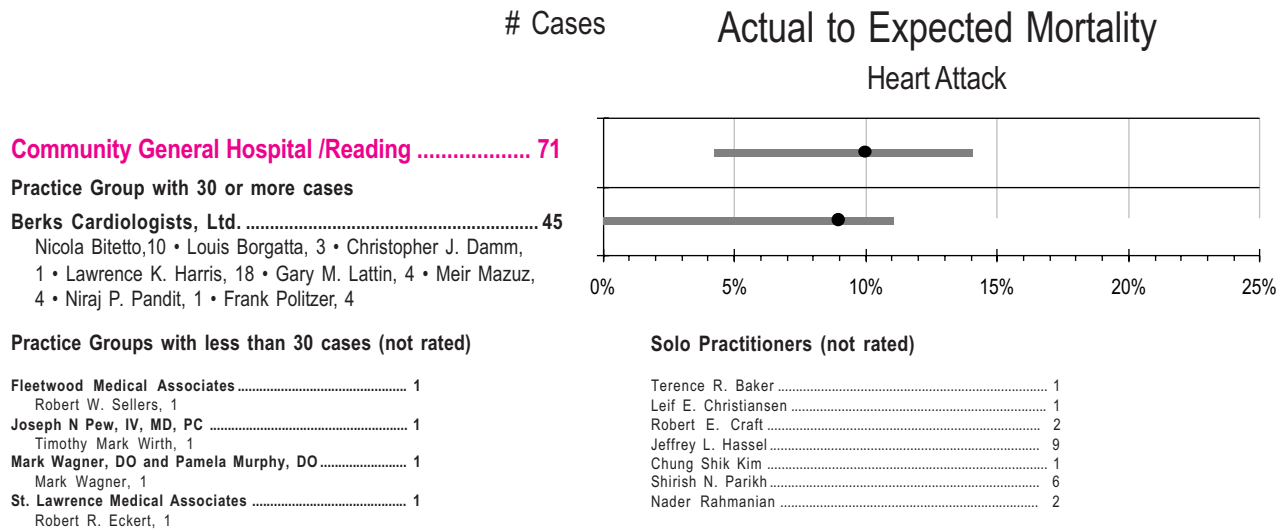
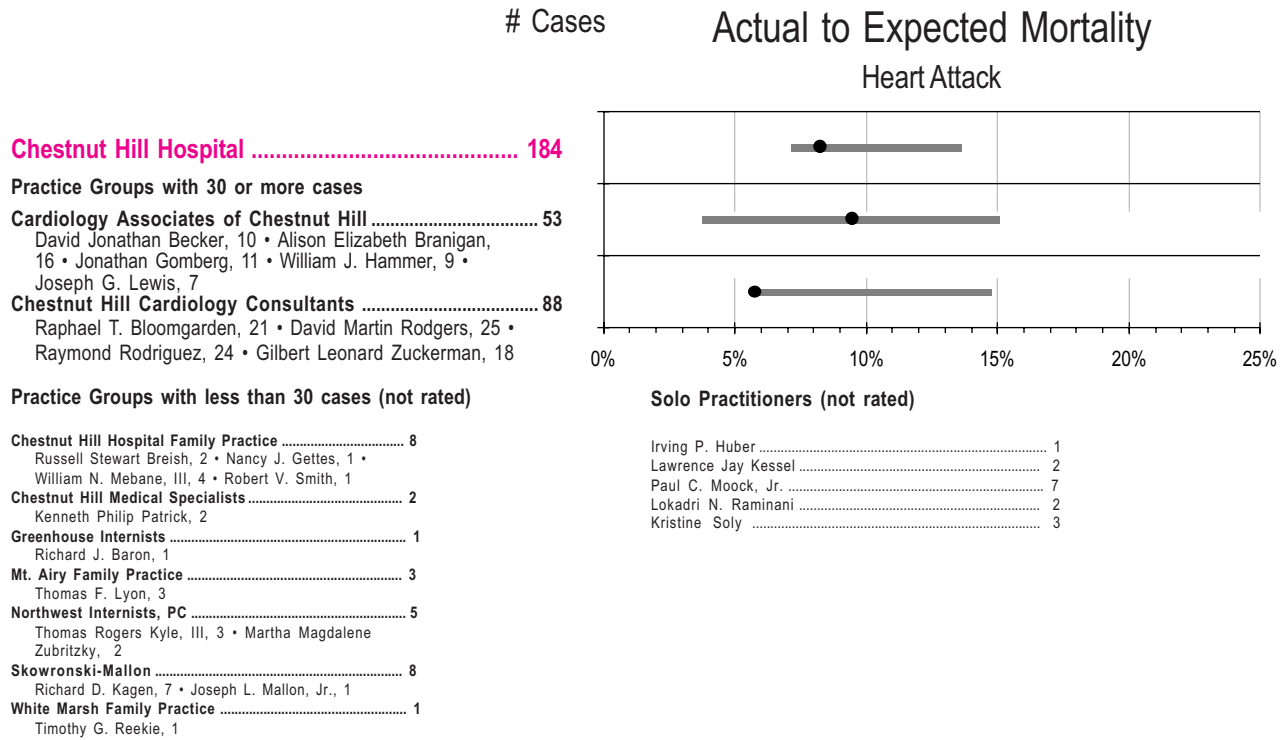


Solo Practitioners (not rated)

- J. Edgar Alarcon 5
- Susan E. Beatty 2
- Stephen F. Belfiglio 2
- Mark E. Blossom 2
- Bruce Arthur Colley 2
- Steven Joseph Dickter 2
- Paul Mark Eberts, II 1
- Leonard C. Giunta 1
- Mary Lisa Gunning 1
- Harry J. Hutchinson, III 6
- Basil S. Jawad 1
- Vinod K. Kataria 2
- Edward P. Rock 1
- Gabriel Ruggiero 1
- Andrew D. Sitkoff 3
- Jean B. Stretton 1
- Joseph Edward Trojak 1

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range



Cases Actual to Expected Mortality Heart Attack

Delaware County Memorial Hospital 246

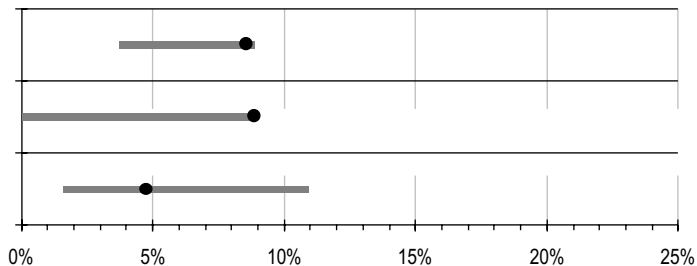
Practice Groups with 30 or more cases

Delco Cardiology 34

Frederick A. Furia, 19 • Richard D. Schaaf, 15

Suburban Cardiologists, Ltd. 64

William R. Beckwith, 18 • Walter A. Kornienko, 13 •
Edward W. LaPorta, 10 • H. Barry Raff, 23



Practice Groups with less than 30 cases (not rated)

Affiliated Medical Associates 1	Pulmonary Associates 1	Quentin Marc Giorgio 1
Jeff Michael Greenblatt, 1	Victor Galati, 1	Joseph Charles Goldschmidt 1
Aldan Medicine 1	Schaffer, Shmokler Associates 3	Alan S. Groth 1
Dante S. Roccario, 1	Elliott Lee Schaffer, 1 • Mitchell F. Shmokler, 2	Robert B. Hanes 3
Delaware County Family Practice Associates 11	Sprandio, Smith, Roush, Mikhail 1	William J. Hart, Jr. 2
Robert J. Braunfeld, 6 • Dennis W. Kropp, 4 • Larry M. Shrager, 1	Robert Kenneth Roush, Jr., 1	Stephen M. Humbert 1
Family Health Center Associates 2	Solo Practitioners (not rated)	John N. Huyette 6
Gary D. Salkind, 2		George Isajiw 1
Lawrence Park Medical Group 1	George K. Avelian 2	Alexander I. Kiotis 2
Leroy B. Fleischer, 1	Gary B. Bennett 1	Robert Carl Madonna 5
Marple Medical Associates 13	Howard N. Brooks 1	Orlando Zoleta Maloles, Jr. 2
Alexander G. Karpenos, 1 • Richard Lichtenberg, 6 • Mark Lisberger, 3 • Myron E. Resnick, 3	Katherine Canakis 2	Martin Malz 1
Medical Associates of Drexel Hill, Inc. 1	Francis E. Capista 2	Robert F. Marvin 3
Sal. A. Lofaro, 1	Ronald P. Ciccone 1	Gerard Augustine Miller 1
Medical Group at Marple Commons 5	John Mario Colombo, Jr 14	Patricia A. Montgomery 1
Janet S. Specter, 1 • Margaret Walker, 1 • Daniel Lee Wolk, 3	Lorraine M. Disipio 1	Peter Parry 1
Morton Silver Associates 8	Lambert G. Eichner 2	Domenic Pisano 1
Karl G. Schwabe, 6 • Richard Silver, 2	Robert Furia 3	Joseph P. Quintiliani 1
	Michael J. Gagliardo 1	Susan L. Ricciardi 1
	Charles J. A. Gartland 1	Robert Shusman 1
		John F. Zimmerman 6

Cases Actual to Expected Mortality Heart Attack

Delaware Valley Medical Center 134

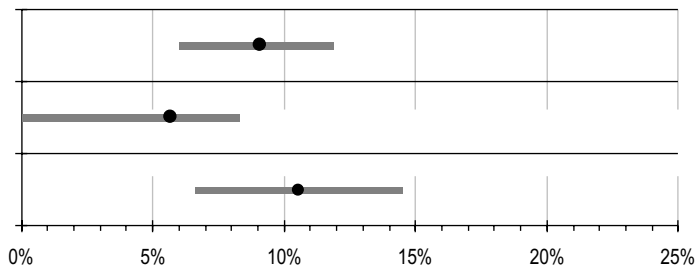
Practice Groups with 30 or more cases

Clinical Cardiology Group, PC 36

Kevin P. Furey, 2 • John J. Mueller, 3 • Samuel W.
Steuer, 12 • Clifford Stewart Strauss, 19

Regional Internal Medicine 76

Ronald P. Emmi, 8 • Andrew C. Friedman, 18 •
Michael P. Mann, 4 • Jonathan Paul Oline, 12 •
Morris I. Rossman, 31 • Walter H. Snyder, 3



Practice Groups with less than 30 cases (not rated)

Brehouse/Whyte 1
Robert H. Brehouse, 1
Bruce B Dershaw, MD, PC 1
Bruce B. Dershaw, 1
Cardiology Associates of Bucks County, Inc. 1
Atul D. Trivedi, 1
Fairless Hills Medical Center, Inc., 2
Jeffrey R. Blumenthal, 1 • Richard B. Taddonio, 1
Segal, Aaronson Pulmonary Associates 1
Marcia I. Segal, 1
Stonybrook Medical Center 2
Jeffrey Arthur Langbein, 2

Solo Practitioners (not rated)

Roberto T. Carvajal 13
Philip W. Deibert 1

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases Actual to Expected Mortality
Heart Attack

Doylestown Hospital 209

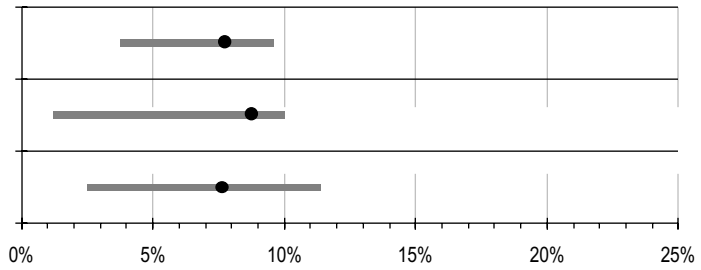
Practice Groups with 30 or more cases

Central Bucks Cardiology 80

Bruce Applestein, 22 • Jeffrey Paul Gress, 14 • James John Kmetzo, 31 • George F. Wiemann, IV, 13

Central Bucks Specialists, Ltd. 79

Robert Hale, 1 • Joseph F. X. McGarvey, 30 • Brian Munley, 23 • David Lawrence Smith, 22 • Richard R. Vanderbeek, 3



Practice Groups with less than 30 cases (not rated)

Bucks County Medical Associates, PC 3

Henry B. Holtzman, 1 • Frank A. Welsch, 2

Central Bucks Internal Medicine 2

Connie S Drapcho, 1 • Carla Saccarelli Patton, 1

Chalfont Family Practice 2

Bruce Lieberman, 1 • Joseph M. Shaeffer, 1

Coverdales - Hermann, Ltd. 7

Edward J. Coverdale, III, 2 • Paul J. Coverdale, 3 • Christopher P. Hermann, 2

Coyne Medical Associates 2

Veronica Coyne, 2

Doylestown Internal Medicine Associates 14

Andrew E. Krick, 7 • Phillip A. Myers, 4 • Jon Walheim, 3

Dr. Martynec and Dr. Abramowitz 10

Alan Ira Abramowitz, 7 • Bohdan Martynec, 3

Morsback/Coff 1

Louis Franklin Morsbach, Jr., 1

Pace/Goodman 1

Mark V. Pace, 1

Plumsteadville Family Practice 2

James P. Blore, 1 • Joseph D. Ferrara, 1

Solo Practitioners (not rated)

David J Davis, II 1

Scott S. Levy 4

Lorraine Rose Pallitto 1

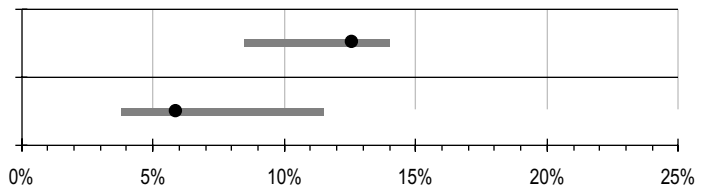
Cases Actual to Expected Mortality
Heart Attack

Easton Hospital 272

Practice Group with 30 or more cases

Easton Cardiovascular Associates, PC 52

Gary Aldo Costacurta, 10 • Albert J. Kaspar, 4 • Moosa Najmi, 13 • Rajeev Rohatgi, 16 • Joseph Adriano Schiavone, 9



Practice Groups with less than 30 cases (not rated)

Derasse Associates 11

Alain R. Derasse, 11

George M Joseph, MD, PC 27

Anthony C. Amoroso, 4 • Mark H. Auerbach, 5 • Pramila Parveen Gupta, 3 • George M. Joseph, 8 • Mark I Koshar, 7

Lehigh Valley Nephrology Associates 1

Robert Samuel Gayner, 1

Nephrology-Hypertension Associates of Lehigh Valley . 1

Robert W. Grunberg, 1

Palmer Family Practice 5

Michael F. Raab, 3 • John R. Tiffany, 2

Two Rivers Cardiology Associates 28

Pradeep S. Ghia, 12 • Thomas Little, 8 • Arthur H. Popkave, 8

Warren Cardiovascular Associates, PC 4

Robert C. Emery, 4

Solo Practitioners (not rated)

Brooks Betts, II 8

Frank J. Kessler 1

Erika Lahav 1

A. Rashid Makhdomi 13

Robert F. McEvoy 14

Bharat Kumar Mehta 3

G. Bruce Miles 11

Terry J. Pundiak 1

Dominick J. Raso 20

Eric Schoeppner 11

Om P. Sharma 18

Robert M. Silberman 3

Edward A. Spoll 6

Manu Parbat Vachhani 7

Yogesh Viroja 9

Stanley R. Walker 13

Jonathan Warren 4

Cases Actual to Expected Mortality Heart Attack

Frankford Hospital /City of Philadelphia 610

Practice Groups with 30 or more cases

Armand Formica/Edward Strauss 31

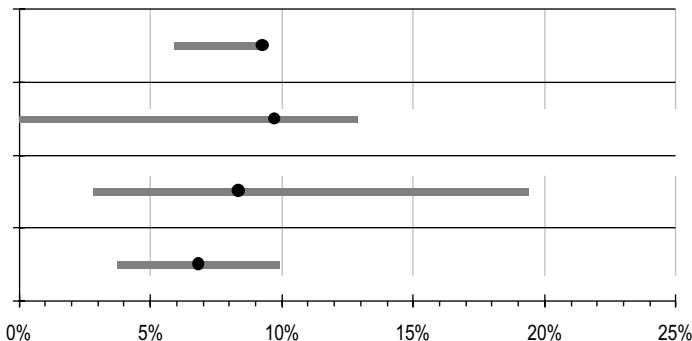
Armand M. Formica, 19 • Edward J. Strauss, 12

Associates Internal Medicine 36

Jeffrey C. Bado, 23 • Julius Ellison, 13

Cardiology Associates of Philadelphia, PC 162

Steven G. Hess, 41 • Rick Okagawa, 25 • Joseph L. Richerts, 41 • Edward A. Solow, 28 • Roger M. Wint, 27



Practice Groups with less than 30 cases (not rated)

Allan Koff, DO, Ltd. 8

Allan E. Koff, 5 • Marvin Schatz, 3

Altschuler, Gelfand, Benjamin Associates 5

Stanley L. Altschuler, 3 • Mark Benjamin, 1 • Jonathan L. Gelfand, 1

Buschiazzo/Ferreira 14

Horacio J. Buschiazzo, 4 • Arturo J. Ferreira, 10

Cardiology Associates of Bucks County, Inc. 9

Bindukumar C. Kansupada, 1 • Rajnikant S. Shah, 4
Atul D. Trivedi, 4

Delaware Valley Medical Associates 13

Joyleen E. Earle, 5 • Neal Erkes, 6 • Debra Hudes, 2

Doctors Krug and Miller, PC 1

Michael D. Shulman, 1

Dr. Hofmann and Dr. Eschelman 11

William A. Hofmann, II, 11

Dr. Larry Kramer, PC 1

Larry S. Kramer, 1

Dr. Rosenbaum and Dr. Mullen 12

Mark J. Mullen, 4 • Carl Rosenbaum, 8

Elefant-Lieberman-Galante, Associates, Ltd. 18

Howard L. Elefant, 8 • Lisa Galante, 10

Fox Chase Orthopedics 1

Bijoy K. Ghosh, 1

Frankford Avenue Medical Associates 3

Louis Rottenberg, 3

Frankford Morrell Medical Center 5

Jerry R. London, 2 • Barry M. Montague, 3

Gastrointestinal Specialists 2

Alexander J. Harmatz, 1 • Harvey B. Lefton, 1

Greater Northeast Family Medical Associates 6

Joan M. Grzybowski, 3 • David M. Pudles, 1

Hematology-Oncology Associates 1

Allen E. Terzian, 1

Medical Associates of Bridesburg 14

Brian B. Kimmel, 14

Oxford Circle Family Medicine 8

Philip Cross, 4 • Craig A. Garfield, 4

Oxford Valley Cardiology Associates, PC 19

Ramesh K. Adiraju, 4 • Subrahmanyam Chivukula, 5 • Ranga A. Rao, 10

Regional Internal Medicine 13

Ronald P. Emmi, 1 • Andrew C. Friedman, 1 • Michael P. Mann, 4 • Carlin J. McLaughlin, 1 • Walter H. Snyder, 6

Revere Street Medical Associates 1

Michael H. Segal, 1

Scotchbrook Medical Associates 8

Michael F. Rafferty, 8

Segal, Aaronson Pulmonary Associates 5

Gary A. Aaronson, 1 • Marcia I. Segal, 1 • Stanton L. Segal, 3

Shrjji Medical Associates, PC 2

Mukund V. Sheth, 2

Southwood Medical Associates 1

Neil J. Mallis, 1

Steven G Hess, MD 21

Kenneth R. Stone, 21

Whitaker Medical 5

Subbarao Gorti, 1 • Jerome Miller, 4

Solo Practitioners (not rated)

Romeo S. Abella 1

William J. Artz, Jr. 1

Allen L. Axe 3

Herbert Bergman 5

Andrew Berkowitz 30

Barry A. Blinkoff 2

Margaret A. Burke 1

Roberto T. Carvajal 4

Bethala B. Franklin 13

Alan J. Levin 2

Ronald M. Levin 4

Michael Lieb 5

Nyok Kheng Lim 4

Neal I. Mermelstein 1

Joel Miller 28

Edward R. Moss 1

Evelyn E. Partridge 5

Sudha R. Patnaik 1

David Rosen 1

Michael Rosner 3

Bakhshish S. Sandhu 7

Rajendra N. Seth 9

Stevan A. Smallow 1

Mary Anne J. Smith 1

Allan R. Snyder 7

Joel S. Steinberg 4

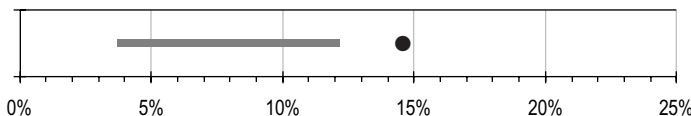
Eugene E. Vogin 4

Terry Waldman 4

Alex K. Yeh 2

Cases Actual to Expected Mortality Heart Attack

*** Germantown Hospital & Medical Center 82**



Practice Groups with less than 30 cases (not rated)

Cardiology Associates of Chestnut Hill 1

Jonathan Gomberg, 1

Complete Physician Services 2

Gary D. Yeoman, 2

Drs. Jones, Friedman, and Bray 1

Edward R. Jones, 1

Drs. Patterson and McCune 8

Wallace G. McCune, 2 • Robert J. Patterson, 6

Family Medicine Associates, Ltd. 5

San-Miguel Carmen Febo, 5

Germantown Cardiology Associates 21

John Helwig, Jr., 2 • Frank S. James, 19

Germantown Family Medicine Associates 3

Mariah E. Vassall, 3

Germantown Geriatrics 2

Philip Calvert Taylor, 2

Germantown Professional Associates 10

Irwin Becker, 6 • Judith B. Bronstein, 1 • Bernard A. Brownstein, 1 • Carol A. Love, 2

Nelson Medical Group 5

Gordon Ijelu, 5

York Road Professional Associates 1

Edward B. Polin, 1

Alan P. Berg 1

Eric W. Bray 1

Roman Dykyj 1

Roman Dykyj, Jr. 1

Bruce Stewart Gilmore 1

Kenneth D. Hoellein 3

Robert F. Lee-Powell 2

Barry Marks 5

Jeffrey H. Millstein 1

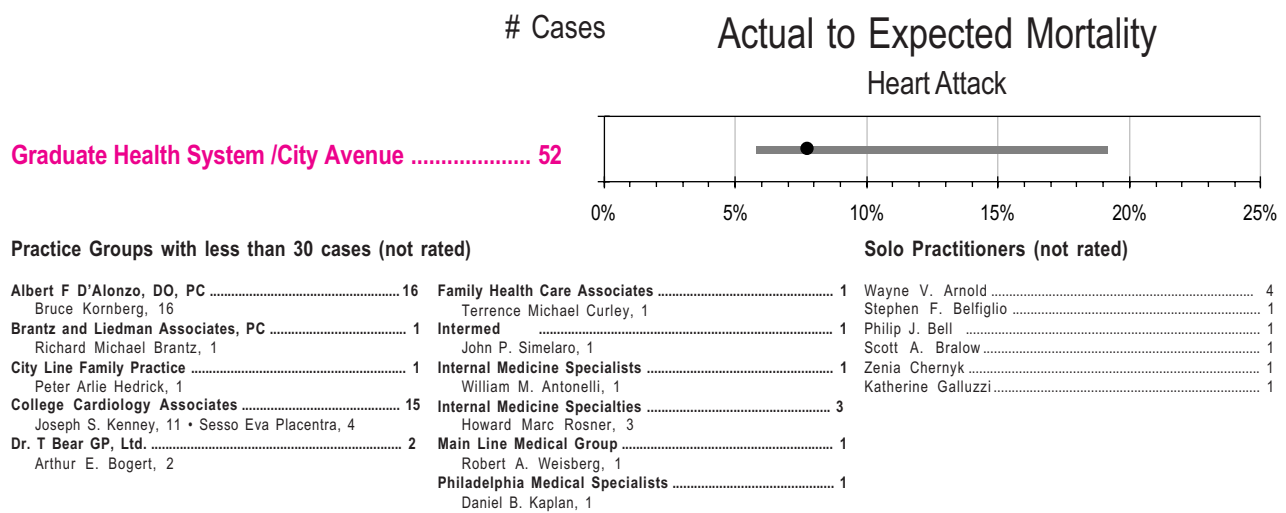
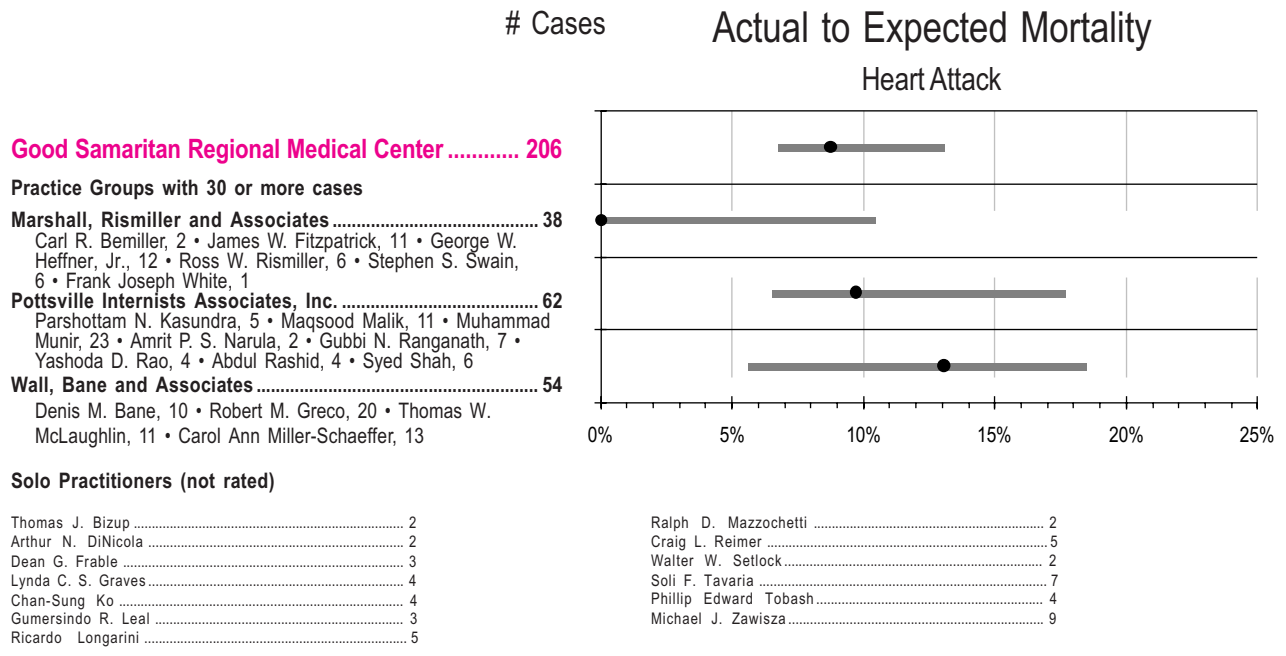
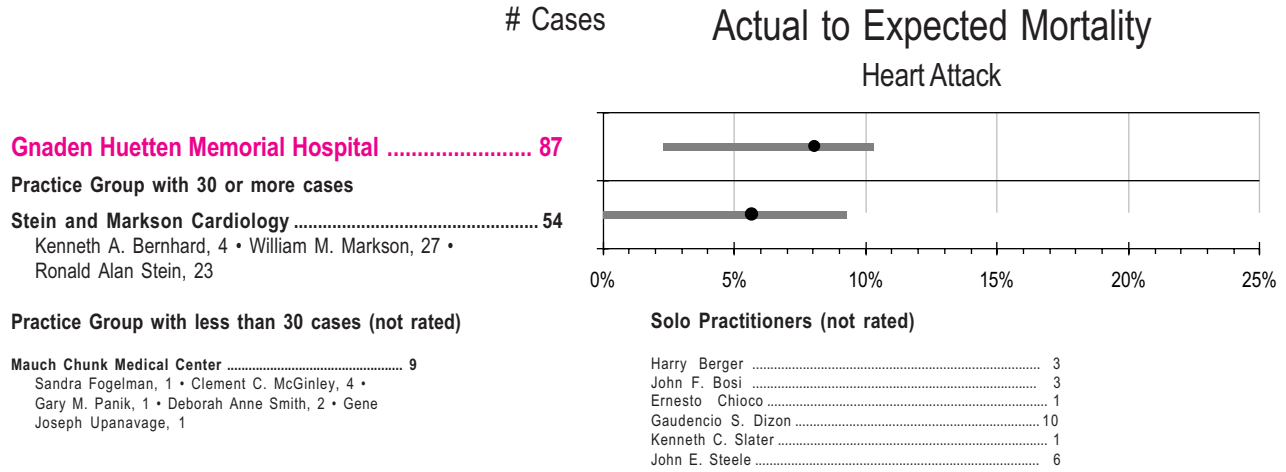
Joel D. Pomerantz 4

Owen W. Williamson 2

Mykola Wojtowych 1

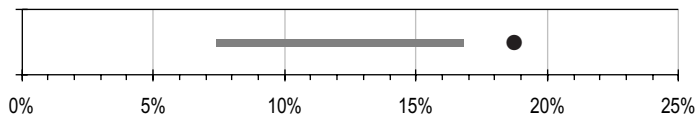
KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range



Cases Actual to Expected Mortality
Heart Attack

* Graduate Health System /Parkview Hospital 95



Practice Groups with less than 30 cases (not rated)

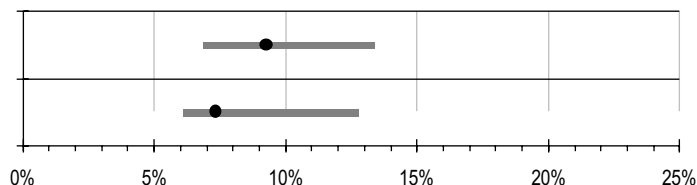
Allan Koff, DO, Ltd.	8
Allan E. Koff, 7 • Marvin Schatz, 1	
Armand Formica/Edward Strauss	10
Armand M. Formica, 8 • Edward J. Strauss, 2	
Brantz and Liedman Associates, PC	1
Richard Michael Brantz, 1	
Complete Physician Services	7
Gary D. Yeoman, 7	
Greater Northeast Family Medical Associates	1
Geoffrey W. Temple, 1	
Metropolitan Nephrology Associates	4
Theodora Bernardini, 1 • Stephen S. Levin, 2 • William A. Nickey, 1	
Northeast Family Practice Associates	1
Burton Blender, 1	
Wissinoming Medical Associates, PC	1
Mitchell Allen Schwartzman, 1	

Solo Practitioners (not rated)

Alan S. Bailer	3
Robert A. Ball	1
Vernon C. Buckley	1
Frank Hunter Guinn	5
Hollace D. Leppert	1
Jonathan B. Levyn	1
David M. Masiak	20
Paul M. Miller	12
Howard H. Nesbitt	5
Michael K. Sallen	11
Gerald Skobinsky	1
Brian Walsh	1

Cases Actual to Expected Mortality
Heart Attack

Grand View Hospital 217



Practice Group with 30 or more cases

Buxmont Cardiology Association	164
David M. Flowers, 40 • Mitchell Greenspan, 36 • Paul R. Hermany, 20 • J. Phillip Moyer, 33 • Michelle Netty Stram, 35	

Practice Groups with less than 30 cases (not rated)

Bux-Mont Oncology/Hematology	
Medi Associates, PC	8
Alan Kaufman, 5 • Thomas Siesholtz, 3	
Indian Valley Family Practice	5
Lori Eileen Rousche, 1 • H Jeffrey Wilkins, 4	
KL Pulmonary Associates, PC	2
Howard B. Koffler, 1 • Neil D. LaBove, 1	
Montgomery Family Practice	2
Steven Scott Bimson, 2	
Pennridge Hematology/Oncology	3
William Siegel, 3	

Solo Practitioners (not rated)

Sandra Harris Corrado	7
Norbert Leska	1
Donald F. Nase	13
Edward Jay Rosenfeld	6
Ann Marie Rudden	5
Alfred G. Vasta, Sr.	1

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

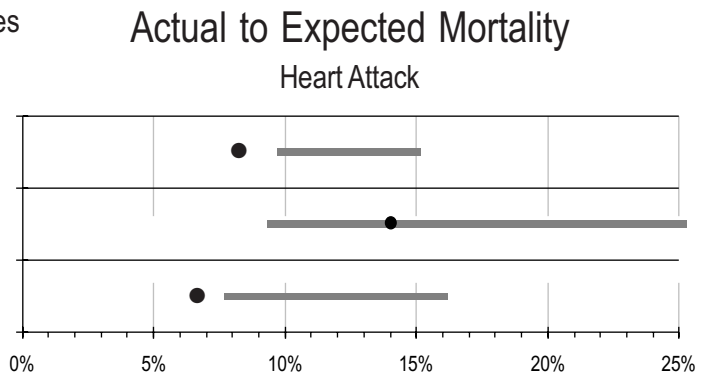
Cases

Holy Redeemer Hospital and Medical Center 290

Practice Groups with 30 or more cases

Montgomery County Medical Associates, Ltd. 43
 Brian David Carnavil, 14 • William J. Gibbons, 6 • Guy McElwain, Jr., 14 • Marc Scott Rabinowitz, 9

Philadelphia Heart Group 117
 Allan M. Greenspan, 16 • William S. Haaz, 62 • Bruno V. Manno, Jr., 22 • Scott R. Spielman, 17



Practice Groups with less than 30 cases (not rated)

Family Medical Associates of Abington 2	Joseph F. Mambu, 2
Fox Chase Medical Associates, PC 2	Edward L. Bedrick, 1 • Manuel Rosenberg, 1
Holy Redeemer Family Practice 4	Barry G. Segal, 4
Hypertension-Nephrology Associates 1	Edward R. Snipes, 1
Jay H Shah and Vijay J Shah, MD 1	Vijaya J. Shah, 1
Meadowbrook Internal Medicine Associates 14	Harry A. Kiesel, 8 • Kenneth Sternberger, 6
Meadowbrook Pulmonary Associates 1	Edward Schuman, 1
Stoltz and Hahn Medical Associates 2	Larry Steven Hahn, 2
Martin Cooper 4	James W. Flanagan, 1 • Jay C. Kamdar, 3
Richard Allen Koff 3	E. Gary Lamsback, 3

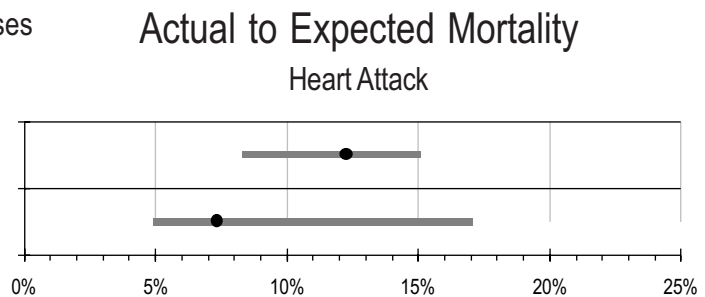
Solo Practitioners (not rated)

Roy Jacob Lehman, II 1
David John Luschini 4
Michael Madianos 1
William H. McMicken 3
John J. Meehan 21
Bruce S. Morrison 2
Reynold A. Panettieri 4
Roberto P. Panis 3
Alexander R. Pedicino 1
Louis Daniel Petrellis 1
Joseph Michael Rybicki 2
Thomas Santilli 31
Richard M. Skaroff 3
Robert W. Smith 7
Charles A. Syms 3
John Telegadis 2

Jeanes Hospital 205

Practice Group with 30 or more cases

Mason/Spitzer/Parris/Garibian 41
 Garo S. Garibian, 28 • Richard A. Narvaez, 10 • Ted M. Parris, 2 • Stanley Spitzer, 1



Practice Groups with less than 30 cases (not rated)

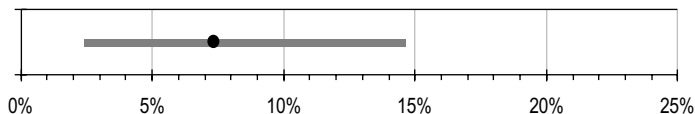
Cardiology Associates 2	A. Mitchell Smith, 2
Cooperman/Azarva 1	Michael Cooperman, 1
Donald Chu, MD, PC 5	Alex Chu 2, • Donald Chu, 3
Fox Chase Medical Associates, PC 17	Edward L. Bedrick, 5 • Howard D. Bronstein, 6 • Manuel Rosenberg, 6
Israel Lichtenstein, MD, PC 1	Richard Edward Tepper, 1
Jenkintown Medical Associates 2	Peter P. Giammanco, 2
Packman and Cane Internal Medicine Associates 7	Martin Cane, 3 • Barry E. Packman, 3 • Courtney R. Snyder, 1
Robert Shore, MD/Robert Mann, MD 16	Robert J. Mann, 8 • Robert A. Shore, 8
Singer/Reinprecht/Feldman 9	Robert Allen Feldman, 7 • James T. Reinprecht, 2
Stephen P Cowen, PC 11	Robert P. Biggans, 7 • Lee Andrew Cowen, 3 • Stephen Paul Cowen, 1
Steven W Klinman, MD and Associates 3	Steven W. Klinman, 3
Suburban Cardiovascular Specialists, PC 15	Jeffrey S. Fierstein, 5 • Steven J. Mattleman, 8 • Arnold B. Meshkov, 2

Solo Practitioners (not rated)

Ronald S. Banner 4
Rohit Mahendrabhai Desai 9
Delfa Gomez Dumarán 9
Mark Eskenazi 2
Harris S. Gerber 1
Mohammad A. Jafar 5
Sigmund E. Landis 1
Eric L. Lang 3
Reuben B. Loeb 2
Samuel Mandel 2
C. Joseph Miller 1
Carol L. Most-Levin 4
Anthony J. Palazzolo 2
Reynold A. Panettieri 3
Kevin G. Robinson 14
Jorj Fethullah Selhat 6
Leon Shmokler 2
Yung Doo Song 1
John Telegadis 4

Cases Actual to Expected Mortality Heart Attack

John F Kennedy Memorial Hospital 41



Practice Groups with less than 30 cases (not rated)

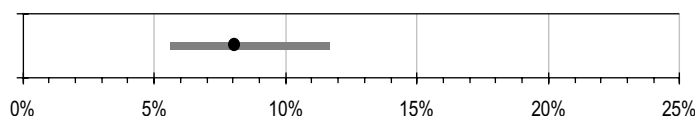
Donald Chu, MD, PC 4	Donald Chu, 4
Internal Medicine Associates 9	Kenneth J. Forman, 7 • Gilbert Grossman, 2
Internal Medicine Cardiology 2	David Chomsky, 2
Pulmonary Disease Associates 1	James H. Dovnarsky, 1
Steven W Klinman, MD and Associates 1	Steven W. Klinman, 1
Wissinoming Medical Associates, PC 1	William I Schwartz, 1

Solo Practitioners (not rated)

Javad Abdollahian 3
Romeo S. Abella 4
Michael Annabi 1
Althea Hankins 2
Maurice M. Katalan 1
Larisa Khalupsky 1
Herbert Moss 1
Mary S. Murphy 1
Karen Joyce Nichols 1
Sudha R. Patnaik 2
Rajendra N. Seth 4
Nisha Singh 1
Surya Kumari Vangore 1

Cases Actual to Expected Mortality Heart Attack

Lower Bucks Hospital 162



Practice Groups with less than 30 cases (not rated)

Arnold Goldstein Associates 7	Arnold L. Goldstein, 2 • Bruce Alan Goodman, 4 • Barbara Hollis Shonberg, 1
Bruce B Dershaw, MD, PC 2	Bruce B. Dershaw, 1 • Peter C. Serpico, 1
Bucks County Cardiology Associates 5	Ronald H. Fields, 3 • Jonathan Gold, 2
Cardiology Associates of Bucks County, Inc. 25	Bindukumar C. Kansupada, 6 • Rajnikant S. Shah, 10 • Atul D. Trivedi, 9
Clinical Cardiology Group, PC 26	Kevin P. Furey, 9 • John J. Mueller, 3 • Samuel W. Stever, 9 • Clifford Stewart Strauss, 5
Goldberg, Schwartz and Mirsky, PC 8	Harvey E. Goldberg, 5 • Robert Stuart Mirsky, 1 • Peter L. Schwartz, 2

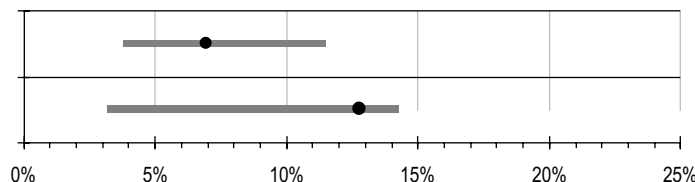
Knouse, Hidalgo Associates 2	Horacio Augusto Hidalgo, 1 • Horacio Augusto Hidalgo, Jr., 1
Lane DiRienzo Associates 5	Enrico J. Dirienzo, 2 • John D. Lane, 3
Medical Arts, PC 23	William Cauffman, 2 • Robert J. Davies, 2 • Francis M. Metkus, 7 • Ramon B. Nadal, 3 • Rosanne B. Paz, 4 • Thomas L. Shultz, 4 • James George Vergis, 1
Oxford Valley Cardiology Associates, PC 20	Ramesh K. Adiraju, 2 • Subrahmanyam Chivukula, 10 • Ranga A. Rao, 8

Solo Practitioners (not rated)

Ghulam Arif 1
Srinivas S. Atri 6
Edmund T. Carroll 1
Shanta Chawla 3
George L. Danielewski 2
Cleofe P. Evangelista 3
Daniel Haimowitz 4
Angela F. Jannelli 2
Vincent Larosa 1
Herbert Jude Luscombe 1
Robert A. Madden 1
Paul W. McIlvaine 3
Edward J. Miskiel, Jr. 1
Michael Lawrence Robinson 1
Cecelia F. Roman 6
Elias Vlessing 2
Andreas Wang 1

Cases Actual to Expected Mortality Heart Attack

Medical College Hospital /Bucks Co Campus 130



Practice Group with 30 or more cases

Sudhir K Marfatia, MD Associates 63
Sudhir K. Marfatia, 27 • Varun Saxena, 36

Practice Groups with less than 30 cases (not rated)

Brecher and Knapp, MD's 7	Jeffrey A. Brecher, 4 • Michael Allan Knapp, 3
MCP Internal Medicine Group 13	Cheryl Ann Collier-Brown, 4 • Larry Lewis Levin, 9
Northeast Internal Medicine and Family Practice 2	Hemlata M. Kalwani, 2

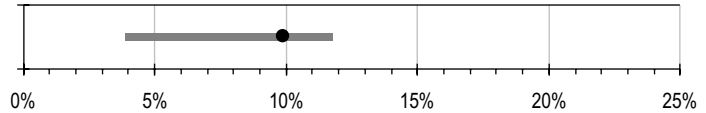
Suburban Cardiovascular Specialists, PC 22	Jeffrey S. Fierstein, 7 • Peter B. Frechie, 1 • Michael J. Martinelli, 6 • Steven J. Mattleman, 2 • Arnold B. Meshkov, 4 • David John Waldstein, 2
Suburban Medical Associates 2	Jeffrey H. Perlson, 2

Solo Practitioners (not rated)

Robert B. Davis 2
Lewis J. Dunn 1
Marshall K. Gardner 1
Marvin R. Gordon 1
Fred D. Jacks, Jr. 2
Sheldon I Karabell 10
Bruce Lizerbram 1
Allan R. Snyder 1
Jon Andrew Solis 1
Joel S. Steinberg 1

Cases Actual to Expected Mortality
Heart Attack

Medical College Hospital /Elkins Park 102



Practice Groups with less than 30 cases (not rated)

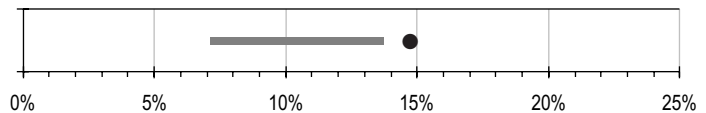
Albert Nemez, MD, PC	6
Jack Samuel Nemez, 6	
Burstein/Burstein	2
William H. Burstein, 2	
Cardiology Associates	20
Gail O. Berman, 2 • Ronald J. Carabelli, 4 •	
Michael B. Dratch, 1 • Edward S. Singer, 12 •	
A. Mitchell Smith, 1	
Comprehensive Medical Care	3
Laureano P. Garcia, 3	
Dr. Sidney Brenner Associates	5
Barry S. Brenner, 5	
Harbison Medical Center	2
Edmund L. Lafer, 1 • Stanley Tauber, 1	
Internal Medicine Associates	28
Kenneth J. Forman, 7 • Jacob Goldstein, 12	
Gilbert Grossman, 9 •	

Solo Practitioners (not rated)

Ira R Sharp, MD, Mortimer J Strong, DO	2
Ira R. Sharp, 1 • Mortimer Strong, 1	
Lawndale Medical Associates	1
Louis H. Castor, 1	
Rosenthal/Brecher/Tiger/Dornstein	1
Perry I. Dornstein, 1	
Shipon, Shipon-Blum	2
Jacob Shipon, 2	
Singer/Reinprecht/Feldman	1
James T. Reinprecht, 1	
Stephen P Cowen, PC	1
Robert P. Biggans, 1	
Suburban Cardiovascular Specialists, PC	9
Jeffrey S. Fierstein, 3 • Peter B. Frechie, 3 •	
Steven J. Mattleman, 1 • Arnold B. Meshkov, 2	
Suburban Chest Associates	1
Alan S. Katz, 1	
Charles Bolno	3
Rachmel Cherner	1
Henry Stephen Clair	1
Milton L. Friedman	4
Milton Hesel	1
Stephen Margolis	1
Edward R. Moss	1
Louis Daniel Petrellis	1
Leon Shmoker	1
Eugene H. Siegel	2
John Telegadis	2

Cases Actual to Expected Mortality
Heart Attack

*Mercy Catholic Medical Center /Fitzgerald 212



Practice Groups with less than 30 cases (not rated)

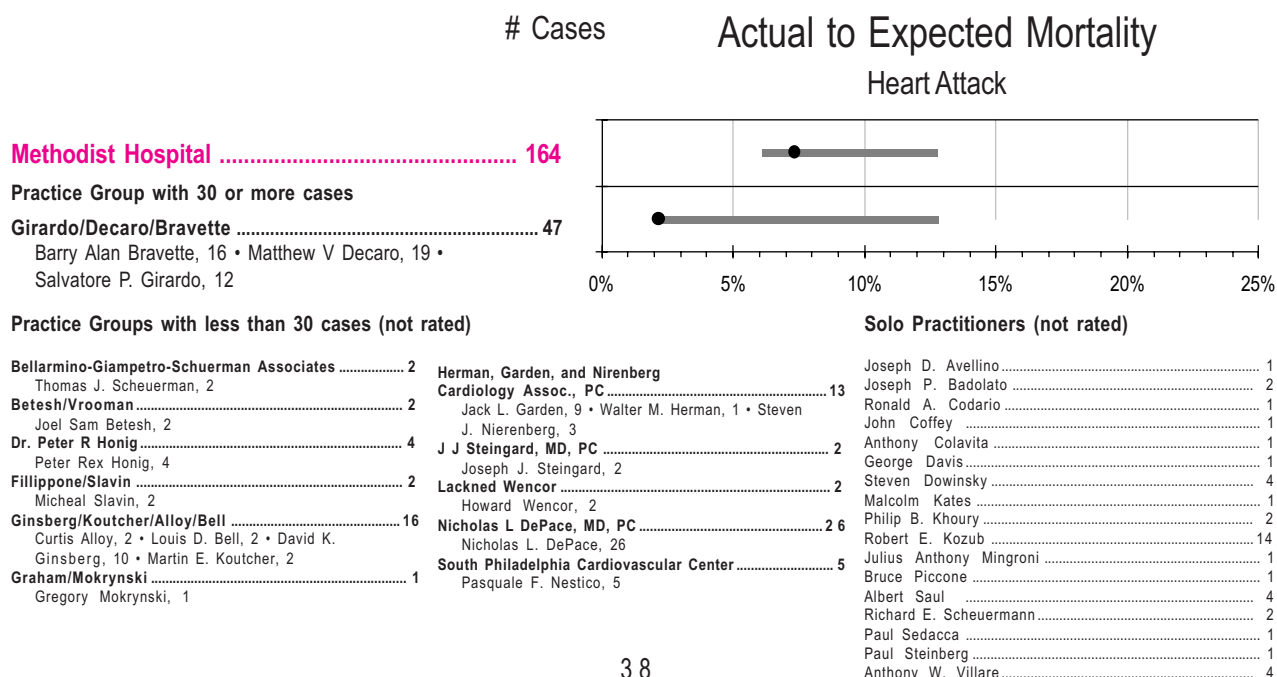
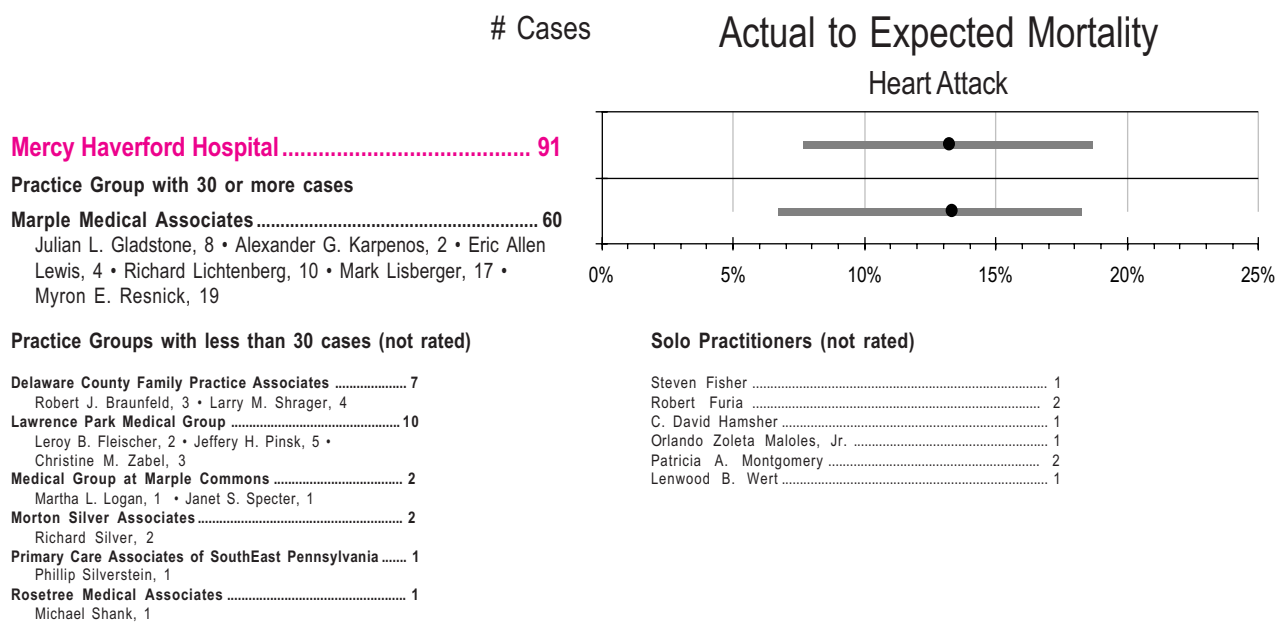
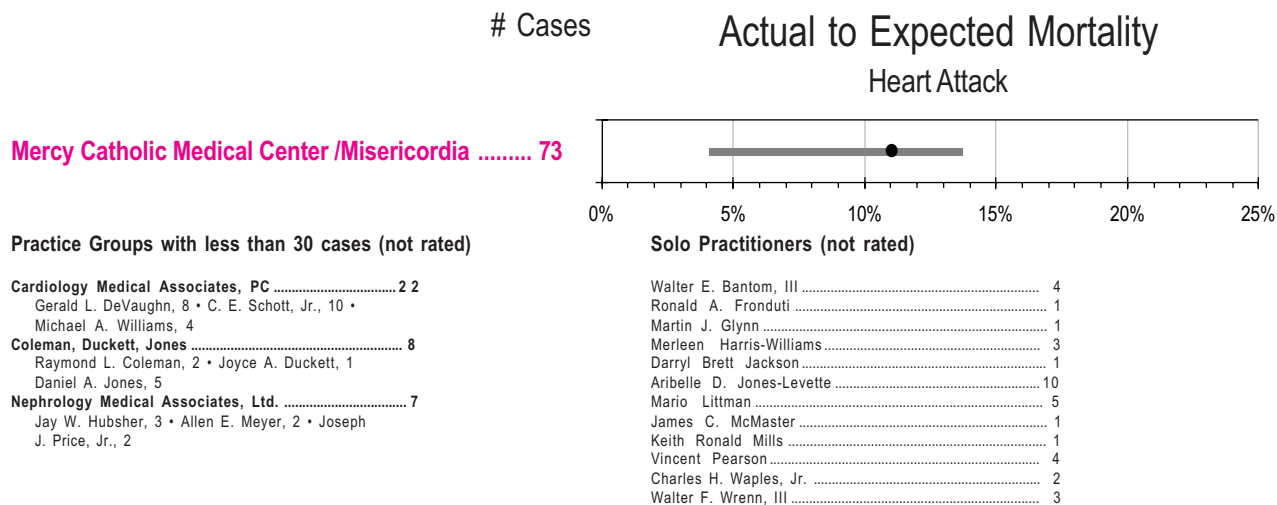
Affiliated Medical Associates	5
Jeff Michael Greenblatt, 3 • Patricia Ellen Szabo, 2	
Basch/Barríos Associates	6
Bruce J. Basch, 6	
Cardiology Medical Associates, PC	7
Gerald L. DeVaughn, 4 • C. E. Schott, Jr., 3	
Cianciulli-Braslow Associates, Ltd.	1
Norman H. Braslow, 1	
Dr. John D. Blannett	10
John D. Blannett, 10	
Eastwick Medical Associates	15
Robert A. Centrone, 2 • Steven A. Feinstein, 6	
Harvey A. Soifer, 7	
Giorgio/Bucco	1
Quentin Marc Giorgio, 1	
GI Medical Associates	6
George Isajiw, 4 • John Kotakis, 2	
Kelly Cardiovascular Group	11
John D. Blannett, 11	
MandM Medical Associates	15
Andrew W.H. McGinnis, 11 • A. Francis Mesete, 4	
Nephrology Medical Associates, Ltd.	1
Jay W. Hubsher, 1	
Pulmonary Medical Consultants	3
Prashant K. Mukerjee, 3	
The Care Group, PC	4
Melanie Jewell, 4	

Solo Practitioners (not rated)

Gerald Russell Atkinson	3
Michael Vincent Baio	2
Walter E. Bantom, III	7
Edward M. Bleeden	3
Andrew G. Bongiovanni	1
Nicholas Busillo	9
Luigi Anthony Cianci	7
Jay Arnold Desjardins	3
Joyce A. Duckett	1
Celsus legbeojai Ebba	1
Steven A. Friedman	1
Ronald A. Fronduti	5
Charles J. A. Gartland	5
Joseph S. Gordon	2
Edward Patrick Gorrie	4
Darryl Brett Jackson	1
Edward Aloysius Kelly	1
Paul Owen Kelly	1
Gregory M. Lehman	3
Mario Littman	4
Martin Malz	1
James C. McMaster	2
William B McNamee, Jr.	1
Bernadette Meade	2
Keith Ronald Mills	1
James M. Minnella	5
Otto F. Muller	12
Henry Ohanissian	1
Domenic Pisano	1
Ralph G. Rainey	3
Floro D. SanPedro	3
Albert George Schran	1
Walter W. Schwartz	1
Richard A. Seifert	14
Carl A. Staub	3
Michael Dennis Stulpin	3
Herbert Tisnowar	7
Charles H. Waples, Jr.	1
John F. Zimmerman	1

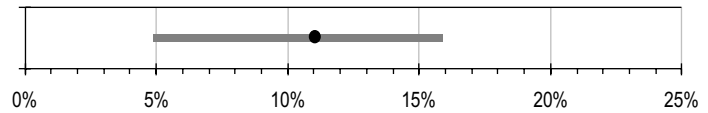
KEY

- Actual Mortality Rate, 1993 — Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- o Actual Mortality significantly lower than Expected Range



Cases Actual to Expected Mortality
Heart Attack

Miners Memorial Medical Center 82



Solo Practitioners (not rated)

Richard J. Banning	18
Narciso C. Bauzon	10
Thomas J. Dirnberger	16
Craig J. Krause	9
Eugene E. Laigon, Sr.	2
Joseph F. Mussoline	6
Dilliswar Sahoo	21

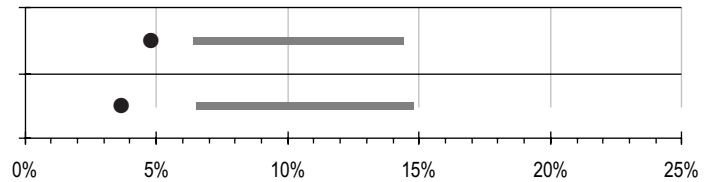
Cases Actual to Expected Mortality
Heart Attack

Montgomery Hospital 125

Practice Group with 30 or more cases

Montgomery Medical Associates 108

Robert Belasco, 32 • Arthur Belber, 8 • Paul R. Casey, Jr., 19 • Jack LeBeau, 12 • Edward Russell Magargee, 9
James Joseph O'Brien, 16 • Gary R. Schwartz, 4 • Steve A. Vaganos, 8



Practice Groups with less than 30 cases (not rated)

Buonocore and Mercier Cardiology Associates, PC	11
Edward R. Buonocore, 7 • Richard Mercier, 4	
Internal Medicine Associates of Norristown	3
Andrea J. Becker, 1 • Lee L. Konecke, 2	
Internal Medicine Group, Inc.	1
Arthur R. Ersner, 1	
Montgomery Family Practice Center	1
Hazel M. Bluestein, 1	

Solo Practitioner (not rated)

Louis D. Mancano	1
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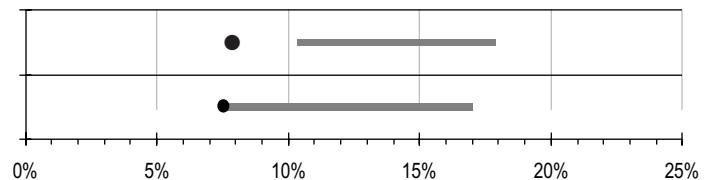
Cases Actual to Expected Mortality
Heart Attack

Muhlenberg Hospital Center 117

Practice Group with 30 or more cases

Lehigh Valley Cardiology Associates 53

Robert H. Biggs, 12 • Ian Chan, 15 • John A. Mannisi, 16 • Kenneth P. Skorinko, 4 • Anthony M. Urbano, 6



Practice Groups with less than 30 cases (not rated)

Cardiovascular Medicine, PC	1
Robert F. Malacoff, 1	
Center of Family Health	1
Melinda Q. Toney, 1	
Giamber, Dale and Smith	3
Hiram Thompson Dale, 1 • Sam R. Giamber, 1 • Stafford M. Smith, 1	

Solo Practitioners (not rated)

Linda P. Augelli-Hodor	2
Gavin C. Barr	5
Linda K. Blose	3
Chi-Kue Tony Chang	2
Nicholas A. Cook	1
Michael John Garcia	2
Jane Karin Garnjost	1
Nercy Jafari	1
Aoun Basheer Kara	6
Erika Lahav	1
George O. Maish	1
Jonathan H. Munves	1
Minh Quang Nguyen	7
Michael A. Patrick	1
Michael B. Selig	1
Iqbal Sorathia	2
Douglas Franklin Turtzo	2
Hugo Nichol Twaddle	15
Dale Max Weisman	2
Sam S. Weng	1
James Thomas Wertz	2

KEY

- Actual Mortality Rate, 1993 — Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases Actual to Expected Mortality Heart Attack

Nazareth Hospital 395

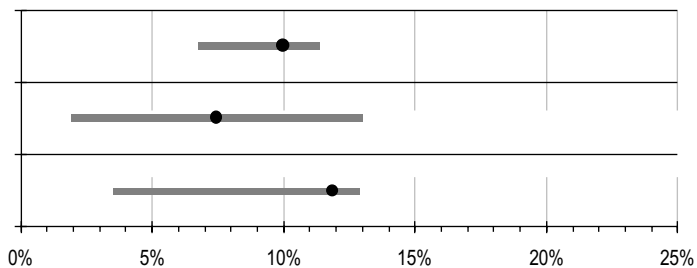
Practice Groups with 30 or more cases

Edward J McGinley, MD, PC 54

Oren L. Friedman, 23 • Edward J. McGinley, 31

Northeast Cardiology Consultants 85

Cheryl L. Leddy, 39 • Deepak Kumar Parashara, 1 • Richard Vassallo, 45



Practice Groups with less than 30 cases (not rated)

Altschuler, Gelfand, Benjamin Associates 4

Stanley L. Altschuler, 2 • Mark Benjamin, 1 • Jonathan L. Gelfand, 1

Burstein/Burstein 14

Frank Burstein, 1 • William H. Burstein, 13

Cardiology Associates of Philadelphia, PC 17

Steven G. Hess, 1 • Rick Okagawa, 6 • Edward A. Solow, 8 • Roger M. Wint, 2

Fox Chase Gastroenterologists 1

Keith Buhl, 1

Hypertension-Nephrology Associates 1

Edward R. Snipes, 1

Lambert Medical Associates 8

Maciej Lambert, 8

Mahan, Lee, and Shusterman 1

Richard D. Shusterman, 1

Philadelphia Cardiology Associates, Inc. 11

Mariell Jessup, 3 • Mark William Preminger, 6 • Marc Tecce, 2

Steven G Hess, MD 4

Kenneth R. Stone, 4

Solo Practitioners (not rated)

Val R. Cantagallo 6	Neal I. Mermelstein 9
Lee A. Celio 9	Roberto P. Panis 12
Robert E. Chmielewski 7	Manubhai R. Patel 12
George L. Danielewski 3	Larry Neal Portnoy 2
Stanley T. Depman 16	Myron Rodos 1
Anna Dubyanskite 1	Jeffrey S. Rosett 10
Roman Dykyj, Jr. 6	Joseph Michael Rybicki 7
Brian Louis Hayes 1	Richard M. Skaroff 7
Semyon Krainsky 5	Stanley Joseph Skromak 4
Barbara Solago Lambert 1	Stevan A. Smallow 1
E. Gary Lamsback 2	Marvin Soffer 2
Vincent Larosa 4	Charles A. Syms 19
Alan J. Levin 4	John Vincent Tumas 5
Anna C. Lysiak 7	Eugene E. Vogin 7
Michael Madianos 18	Patrick T. Waters 3
Thomas F. McGarry 1	George L. Weber 1
William H. McMicken 2	

Cases Actual to Expected Mortality Heart Attack

North Penn Hospital 202

Practice Groups with 30 or more cases

Lansdale Medical Group - Cardiology 61

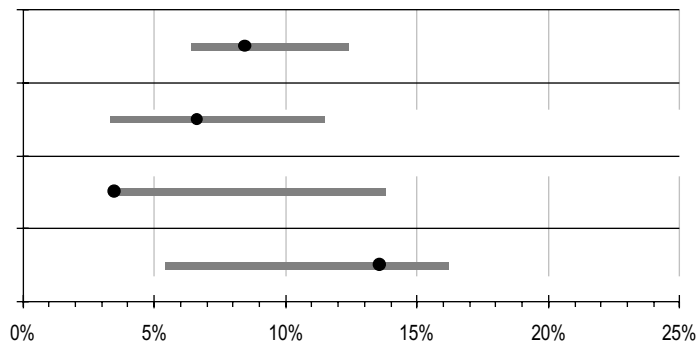
Clifford L. Ehrlich, 24 • Joseph C. Kraynak, 20 • Michael Zakrzewski, 17

Lansdale Medical Group - Internal Medicine 58

Leonardo V Arano, 18 • Charles T. Macy, 13 • James J. Madden, 11 • Robert D. Mazzola, 6 • Jerome E. Sag, 10

North Penn Cardiology Associates 37

Denzel W. Pollock, 25 • Steven W. Tendler, 12



Practice Groups with less than 30 cases (not rated)

KL Pulmonary Associates, PC 1

Neil D. LaBove, 1

L Gary Gladstone and Larry A Ravetz, MD 19

L. Gary Gladstone, 14 • Larry A. Ravetz, 5

Solo Practitioners (not rated)

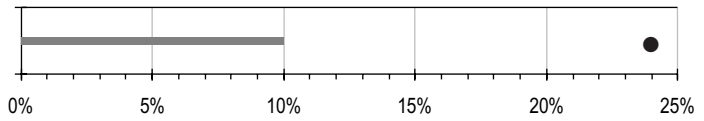
Thomas C. Detweiler 17
Cory Scott Krueger 5
William Pinsky 3
Margaret Mary Simcox 1

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- o Actual Mortality significantly lower than Expected Range

Cases Actual to Expected Mortality Heart Attack

*North Philadelphia Health System 50



Practice Group with less than 30 cases (not rated)

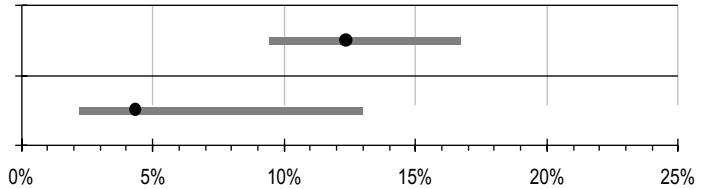
North Philadelphia Internal Medicine Associates 19
Francis J. Braconaro, 19

Solo Practitioners (not rated)

Theodore Burden.....	1
Qadar Khan	7
David Elliott Knox.....	2
Alvan Scott McNeal.....	2
Gene Raymond Newton.....	8
Nand Ram	2
Eric P. Rosen	1
Jay H. Shah	4
Shailendra S. Vaidya.....	4

Cases Actual to Expected Mortality Heart Attack

Northeastern Hospital 203



Practice Group with 30 or more cases

WMK Associates, Ltd. 46
Steven H. Goldstein, 13 • Donald L. Kahn, 7 • Morton S. Mandell, 2 • James F. McDonald, 12 • Andrew Bennett Woldow, 12

Solo Practitioners (not rated)

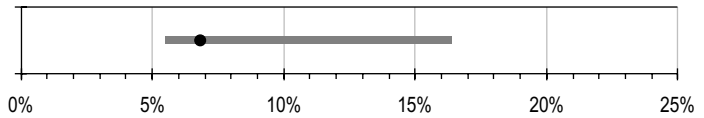
Practice Groups less than 30 cases (not rated)

Complete Physician Services	3
Gary D. Yeoman, 3	
Doctors Punjabi	10
Haresh M. Punjabi, 9 • Priya H. Punjabi, 1	
Dr. Larry Kramer, PC	9
Larry S. Kramer, 9	
Forman-Cobert Medical Associates, PC	20
Howard S. Cobert, 5 • Harvey Richard Forman, 15	
Medical Associates of Bridesburg	1
Brian B. Kimmel, 1	
Northeast Cardiology Group, PC	22
Dennis J. Grous, 12 • Alan Mermelstein, 2 • Raymond Schwartz, 7 • Daniel J. Vile, 1	
Oncology Associates	1
Elihu J. Ledesma, 1	

Mark I Ackerman	6
Richard Adler	1
Geraldine P. Baird	2
Preet M. Batra	20
Thomas D. Batterton	5
Nirmal K. De	1
Justiniano Ganiban	9
William A. Hofmann, II	1
Marc P. Hurowitz	8
Hymen Kanoff	2
Thomas J. Leichner, Jr.	2
Jonathan B. Levyn	3
Howard H. Nesbitt	24
Marvin E. Sultz	4
Fereidoun B. Tehrani	3

Cases Actual to Expected Mortality Heart Attack

Palmerton Hospital 73



Solo Practitioners (not rated)

Garry Michael Carbone.....	1
Shaukat H. Khan	11
Cheryl Sandra Lipson.....	4
Edward Daniel Manzella.....	5
Rodrigo D. Medina	3
Edward J. Miller	5
Alimad Nurmad Musa	14
John H. Nicholson	10
Edgaro P. Salazar	4
Mian Mehboob-Ahmad Shahid.....	16

Cases Actual to Expected Mortality Heart Attack

○ Paoli Memorial Hospital 131

Practice Groups with 30 or more cases

Main Line Cardiology Associates, PC 43

Elliot M. Gerber, 20 • Joseph Soffer, 10 • Antoinette M. Sulpizi, 13

Steven M. LaPorte, MD, PC 73

Steven M. LaPorte, 17 • John J. O'Hara, Jr., 31 • Leo A. Podolsky, 25

Practice Groups with less than 30 cases (not rated)

Bennett, Mark, Schuster, MD, PC 5

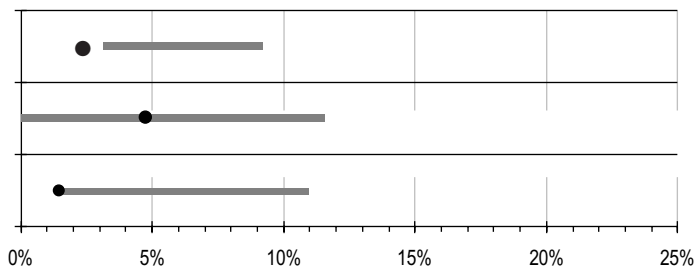
Joseph S. Bennett, IV, 3 • Ralph A. Lanza, 1 • Robert Thomas Schuster, 1

Paoli Medical Center 1

Susan Marie Kennedy, 1

Renal Associates 1

Herman Joseph Michael, Jr., 1



Solo Practitioners (not rated)

Barry H. Burkhardt 1
 Jay S. Cooperman 2
 Alfonso Cuzzo 2
 Ann E. Reilly 2
 Richard F. Satriale 1

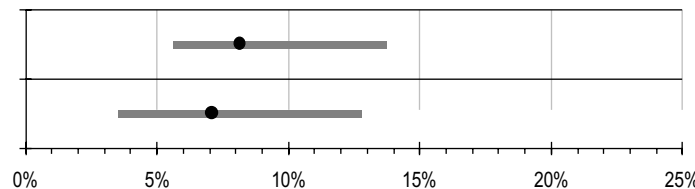
Cases Actual to Expected Mortality Heart Attack

Phoenixville Hospital 124

Practice Group with 30 or more cases

PMA Medical Specialists 86

Andrew Baskin, 8 • Joel W. Eisner, 6 • John Freehafer, 6 • Raymond Kovalski, 1 • Kathleen Elena Magness, 15 • Thomas Michaelson, 8 • Matthew B. Naegle, 2 • Mark Real, 3 • Elizabeth D. Rock, 1 • Paul H. Rogers, 23 • Norman Rothstein, 8 • Frederic J. Weber, 5



Practice Groups with less than 30 cases (not rated)

Phoenixville Area Family Medicine, Inc. 3

Janet L. Brown, 1 • Lorna B. Stuart, 2

Phoenixville Family Medicine 9

Peter H. Giannopoulos, 3 • Rodger F. Rothenberger, 6

Spring Mount Family Practice Associates 2

Edward J. Mea, 2

Solo Practitioners (not rated)

John J. Aylward 2
 Marion C. Childs 2
 Stewart B. Foreman 13
 Jeannine Ruth Hahn 1
 David H. Solis 2
 Sergio R. Vaisman 4

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases

Actual to Expected Mortality
Heart Attack

Pottstown Memorial Medical Center 146

Practice Groups with 30 or more cases

Pottstown Medical Specialists 86

John P. Deviney, 4 • W. James Guthrie, 9 • Joseph D. Krantzler, 26 • Naineshkumar M. Patel, 34 • Michael L. Popolow, 10 • Kennedy J. Sbat, 3

PMA Medical Specialists 35

Raymond Kovalski, 3 • Norman Rothstein, 20 • Frederic J. Weber, 12

Practice Groups with less than 30 cases (not rated)

Bally Medical Group 4

Keith W. Harrison, 2 • Daniel John Maydonovitch, 1 • Dennis Schank, 1

Boyetown Medical Association 1

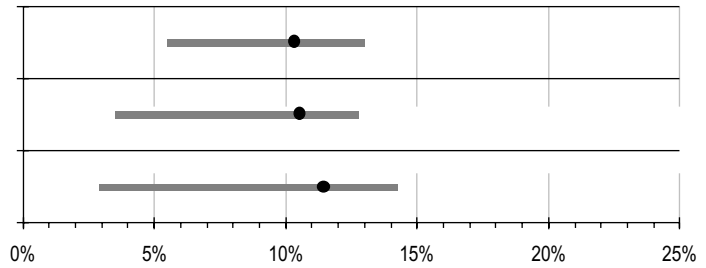
Charles Delp, 1

Coventry Family Practice 5

Carol Henwood, 1 • John A. Lupas, 1 • Susan Sabol, 1 • William C. Woodward, 2

Springford Family Practice 2

Dewey Todd Detar, 1 • Kathryn Hennessey, 1



Solo Practitioners (not rated)

John M. Andersen 5
Thomas Emmanuel Hargest 1
Ambrose Peterman 1
Jonathan Ross 2
Richard Michael Saunders 1
Chandrakant Shah 2
Sergio R. Vaisman 1

Cases

Actual to Expected Mortality
Heart Attack

Pottsville Hospital & Warne Clinic 136

Practice Group with 30 or more cases

Marshall, Rismiller and Associates 50

Carl R. Bemiller, 8 • James W. Fitzpatrick, 8 • George W. Heffner, Jr., 17 • Ross W. Rismiller, 6 • Stephen S. Swain, 11

Practice Groups with less than 30 cases (not rated)

Pine Grove Medical Center 4

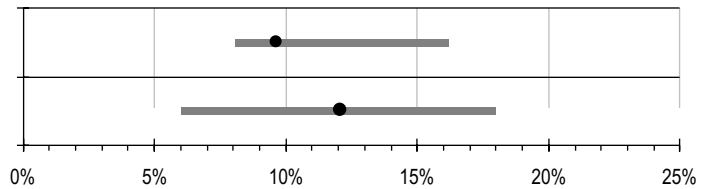
William J. Marencic, 2 • Richard B. Russell, 2

Pottsville Internists Associates, Inc. 18

Parshottam N. Kasundra, 8 • Maqsood Malik, 4
Gubbi N. Ranganath, 2 • Abdul Rashid, 3 • Syed Shah, 1

Wall, Bane and Associates 10

Denis M. Bane, 4 • Robert M. Greco, 1 • Carol Ann Miller-Schaeffer, 5



Solo Practitioners (not rated)

Harwinder S. Ahluwalia 1
Thomas J. Bizup 2
Arthur N. DiNicola 8
Rolf H. Fischer 1
Dean G. Frable 7
Lynda C. S. Graves 2
Chan-Sung Ko 2
Gumersindo R. Leal 6
Ricardo Longarini 9
Ralph D. Mazzochetti 3
Sung Ho Park 1
Craig L. Reimer 2
Matthew C. Sophy 4
Phillip Edward Tobash 6

Cases

Actual to Expected Mortality
Heart Attack

Quakertown Community Hospital 58

Practice Group with 30 or more cases

Quakertown Medical Associates 37

Erin M. Fly, 5 • Russell Hayden Jenkins, 9 • Jon Howard Schwartz, 9 • Paul W. Weibel, Jr., 14

Practice Groups with less than 30 cases (not rated)

Bux-Mont Gastroenterology Associates, PC 2

Jerome Michael Burke, 2

Family Health Care Center 1

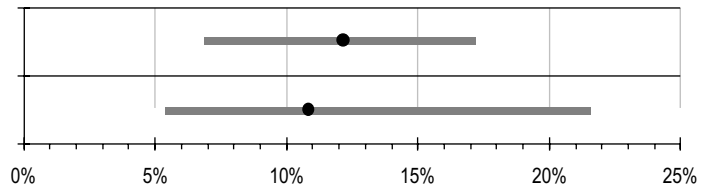
Joseph Gerard O'Neill, 1

Lehigh Valley Cardiology Associates 1

Ian Chan, 1

Upper Bucks Family Medical Center 2

Ric A. Baxter, 1 • Paul M. Marion, 1

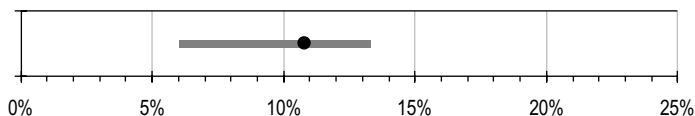


Solo Practitioners (not rated)

Yung S. Kim 4
Norbert Leska 3
Michael Melucci 4
Alfred G. Vasta, Sr. 4

Cases Actual to Expected Mortality
Heart Attack

Riddle Memorial Hospital 150



Practice Groups with less than 30 cases (not rated)

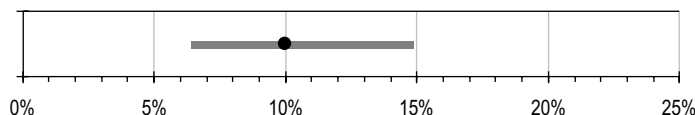
Aston Medical Associates	2
William L. Cohen, 2	
Bell-Thurman Associates	9
James Buchanan Bell, Jr., 4 • John N. Thurman, 5	
Brod/Kohutiak	18
Robert C. Brod, 8 • Vsevolod Kohutiak, 10	
Cianciulli-Braslow Associates, Ltd.	1
Norman H. Braslow, 1	
Internal Medicine Associates of Delaware County	16
David E. Eberly, 6 • Albert H. Fink, Jr., 6 •	
Marc J. Wertheimer, 4	
Internists Associates	1
Richard R. Ratner, 1	
Medical Cardiology Associates	21
Reinhard L. A. Leunissen, 21	
Penn-Del Medical Associates	2
Dan A. Teano, 2	
Providence Medical Associates	1
Rex Kessler, 1	
Rosetree Medical Associates	5
Annette Denise Oneil, 3 • Michael Shank, 2	
SGF Cardiology, Inc.	13
Jonathan C. Felsher, 6 • Michael B. Goodkin, 2 •	
C. Richard Schott, 5	
Ronald Bernhard Anderson	1
Alexander Bunt, Jr., 1	

Solo Practitioners (not rated)

Bernard H. Carlin	1
Ronald J. Carlucci	3
Fu-Zen Chang	2
Kanta Diwan	1
Anthony E. DiMarco	1
Blair Lyn Holl	1
Anmar A. Jamali	5
Jules A. Lacavaro	1
Manuel T. Lim	3
Richard R. P. McCurdy	23
Mandell J. Much	3
William M. Purner	6
Daniel A. Smolen	1
Edward R. Stankiewicz	1
Ernest A. Tremblay	2
Geoffrey P. Tremblay	2
Burton J. Williams	3

Cases Actual to Expected Mortality
Heart Attack

Roxborough Memorial Hospital 141



Practice Groups with less than 30 cases (not rated)

Dr. T Bear GP, Ltd.	1
Arthur E. Bogert, 1	
Endocrine Metabolic Associates, PC	1
Neil T. Streisfeld, 1	
Gary S LaNoce, DO and John M Buonomo, DO	5
John M. Buonomo, 3 • Gary S. LaNoce, 2	
General Practice Associates	17
Larry P. Doroshov, 3 • Mitchell Horenstein, 14	
Lista-Abrams Associates	22
Cyril Abrams, 14 • Norman Eisenstadt, 4 •	
William A. Lista, 4	
Metropolitan Nephrology Associates	1
Theodora Bernardini, 1	
Respiratory Associates, Ltd.	1
Gregory Lenchner, 1	
Warren M Cohen, DO	1
Michael A. Becker, 1	

Solo Practitioners (not rated)

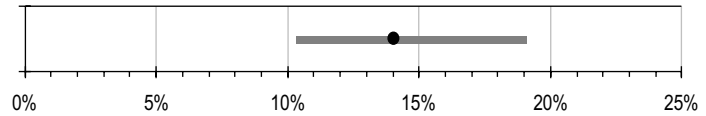
Melanio D. Aguirre	6
Gary Alan Baiocchi	10
Donald A. Baseman	3
Horst Joachim Bunese	3
Warren Mark Cohen	8
Gerry T. Cousounis	5
Oscare P. Digiacomio	3
Leonard M. Evans	5
Leonard Flinkman	2
Margaret H. Hager	3
Jane M. Heaney	5
Irving P. Huber	3
Joan E. Hurlock	7
Robert J. Kaplan	1
Louis F. LaNoce	5
Francine Miller	1
Benjamin Eugene Newman	5
Thomas F. O'Toole	11
Nancy Pickering	2
Norman E. Stahlheber	2
Peter C. Toren	2

KEY

- Actual Mortality Rate, 1993
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Cases Actual to Expected Mortality
Heart Attack

Sacred Heart Hospital /Allentown 136



Practice Groups with less than 30 cases (not rated)

Allentown Family Practice	7
Raymond Steven Buch, 7	
Cardiology Care Specialists	3
David B. Goldner, 1 • Michael Anthony Rossi, 2	
Drs. Frankenfeld, Wilson and Logenhagen	12
John B. Longenhagen, 8 • Richard G. Wilson, 4	
Garcia and Powers Associates	26
Jose R. Garcia, 8 • Victor John Powers, 18	
Hanover Family Medical Group	9
Ronald J. Buckley, 4 • George Louis Provost, 5	
Lehigh Valley Cardiology Associates	3
Robert H. Biggs, 2 • Anthony M. Urbano, 1	

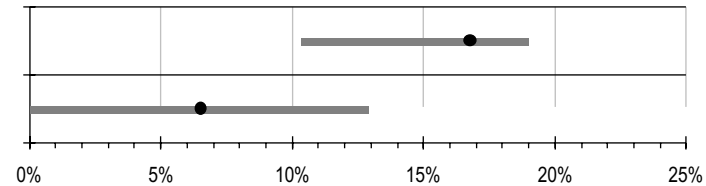
Sacred Heart Medical Associates	20
Faranak Argani, 1 • David J. Batluck, 8 • Elizabeth M. Cerva, 1 • Kevin F. Joyce, 2 • Stephen John Lee, 1 • Kenneth A. Neifeld, 1 • Sultana Khatoun Qurashi, 6	
Southside Family Medicine	4
Neal Berkowitz, 1 • Todd A. Cassel, 3	
Syed A Subzposh, MD, PC	14
Eugene E. Ordway, 3 • Syed A. Subzposh, 11	

Solo Practitioners (not rated)

Thomas J. Czajkowski	4
Bruce A. Frankenfield	3
Arthur D. Hoffman	8
Matthew L. Kasprenski, Jr.	4
Gregory J. McGinley	4
Gerald M. Miller	3
Joseph N. Nader	2
Robert H. Schmidt	4
Douglas Charl Shoenberger	3
Iqbal Sorathia	3

Cases Actual to Expected Mortality
Heart Attack

Saint Agnes Medical Center 126



Practice Group with 30 or more cases

Cardiology Consultants of Philadelphia	31
Veronica Ann Covalesky, 9 • Dean G. Karalis, 2 • Pat M. Procacci, 19 • Mark F. Victor, 1	

Practice Groups with less than 30 cases (not rated)

Bellarmino-Giampetro-Schuerman Associates	6
Anthony Giampetro, 2 • Thomas J. Scheuerman, 4	
Clinical Nephrology Associates, Ltd.	4
Arthur R. Olshan, 4	
Dr. Peter R Honig	4
Peter Rex Honig, 4	
Inter-Med Associates	3
Pat A. Lannutti, 3	
Internal Medicine Specialties	7
Howard Marc Rosner, 6 • Marvin L. Rosner, 1	
J J Steingard, MD, PC	6
Joseph J. Steingard, 3 • Mark Anthony Testa, 3	
Lackner Medical Associates	9
David M. Lackner, 4 • Seth Ian Weber, 5	
Nicholas L DePace, MD, PC	11
Daniel E. Constantinescu, 4 • Nicholas L. DePace, 4 • David M. Elbaum, 3	
Pulmonary Disease Associates	1
James H. Dovnarsky, 1	
South Philadelphia Cardiovascular Center	3
George Anthony Davis, 3	
The Care Group, PC	2
Frank D. Caporusso, 1 • Melanie Jewell, 1	

Solo Practitioners (not rated)

Joseph D. Avellino	1
Joseph P. Badolato	2
Michael Peter Brignola	2
John Coffey	2
Steven Dowinsky	1
Richard F. Grunt	1
Joseph M. Hogan	1
Charles Hurwitz	1
Philip E. Ingaglio	3
Brian L. Karlin	1
Philip B. Khoury	4
Nacienceno T. Largoza	2
Julius Anthony Mingroni	4
Alexander A. Minniti	1
Bach Van Nguyen	2
Richard E. Orose	1
Ngoc An Phan	1
Albert Saul	2
Richard E. Scheuermann	1
John F. Shulman	2
Larry Shusterman	3
Kenneth Winokur	1

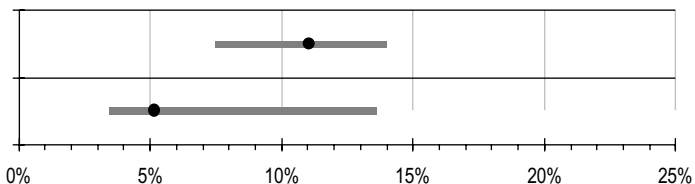
Cases Actual to Expected Mortality Heart Attack

Saint Mary Hospital/ Langhorne 200

Practice Group with 30 or more cases

Bucks County Cardiology Associates 59

Ronald H. Fields, 21 • Jonathan Gold, 27 • Deirdre V. Walsh, 11



Practice Groups with less than 30 cases (not rated)

Arnold Goldstein Associates 7

Arnold L. Goldstein, 2 • Bruce Alan Goodman, 2 • Barbara Hollis Shonberg, 3

Bruce B Dershaw, MD, PC 2

Bruce B. Dershaw, 1 • Peter C. Serpico, 1

Bucks Neurological Group, PC 1

James Joseph Gaul, 1

Cardiology Associates of Bucks County, Inc. 10

Bindukumar C. Kansupada, 5 • Rajnikant S. Shah, 2 • Atul D. Trivedi, 3

Clinical Cardiology Group, PC 6

Kevin P. Furey, 3 • John J. Mueller, 2 • Samuel W. Stever, 1

Delaware Valley Medical Associates 7

Audrey K. Kleeman, 1 • Martin R. Mersky, 6

Doctors Krug and Miller, PC 3

Michael John Krug, 2 • Michael D. Shulman, 1

Fairless Hills Medical Center, Inc. 22

Jeffrey R. Blumenthal, 5 • Gregory Randall Gordon, 2 • Mark E. Liebreich, 6 • Richard B. Taddonio, 9

Goldberg, Schwartz and Mirsky, PC 9

Harvey E. Goldberg, 3 • Robert Stuart Mirsky, 4 • Peter L. Schwartz, 2

Henry D'Silva, MD 1

Gregory Paul Zollner, 1

Mahan, Lee, and Shusterman 2

Howard Jay Lee, 1 • Richard D. Shusterman, 1

Medical Arts, PC 10

Robert J. Davies, 2 • Francis M. Metkus, 2 • Rosanne B. Paz, 2 • Thomas L. Shultz, 4

Newtown Cardiology Associates 13

Richard W. Kass, 5 • Richard Leshner, 8

Oxford Valley Cardiology Associates, PC 10

Ramesh K. Adiraju, 1 • Subrahmanyam Chivukula, 5 • Ranga A. Rao, 4

R D Jambro and N S Silber, MD, PC 3

Robert Jambro, 2 • Neil Sheldon Silber, 1

Richboro Internal Medical Associates 1

Ronald Goppold, 1

Sudhir K Marfatia, MD Associates 2

Varun Saxena, 2

Village at Newtown Medical Center 1

Joseph Kipp, 1

Yardley Medical Center 2

Thomas Edward Duffield, 2

Solo Practitioners (not rated)

Samir R. Akruk 3

Srinivas S. Atri 6

Andrew Berkowitz 3

Roberto T. Carvajal 1

Aldo Anthony Ciccotelli 2

George L. Danielewski 1

Steven Eric Goldberg 2

Daniel Haimowitz 4

Michael Lawrence Robinson 1

Keith Stuart Rothman 1

Jon Andrew Solis 2

Andreas Wang 3

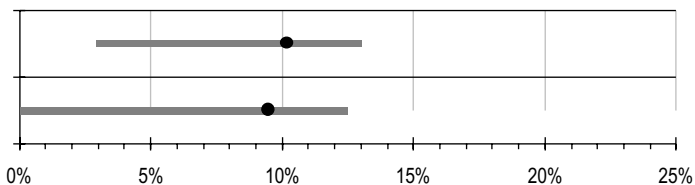
Cases Actual to Expected Mortality Heart Attack

Southern Chester County Medical Center 69

Practice Group with 30 or more cases

Internal Medicine Associates 32

David Callahan, 23 • F. William Maguire, 9



Practice Groups with less than 30 cases (not rated)

Brandywine Valley Cardiovascular Associates 1

Arthur B. Hodess, 1

Brandywine Valley Family Care 2

Mark Robert Harris, 1 • David F. Hoffman, 1

Southern Chester County Family Practice Associates 5

John N. Dagher, 2 • James David Knox, Jr., 1 • David George Rooney, 2

Solo Practitioners (not rated)

John Christopher Barlow 7

Dan S. Butoi 9

Joseph F. Klein 4

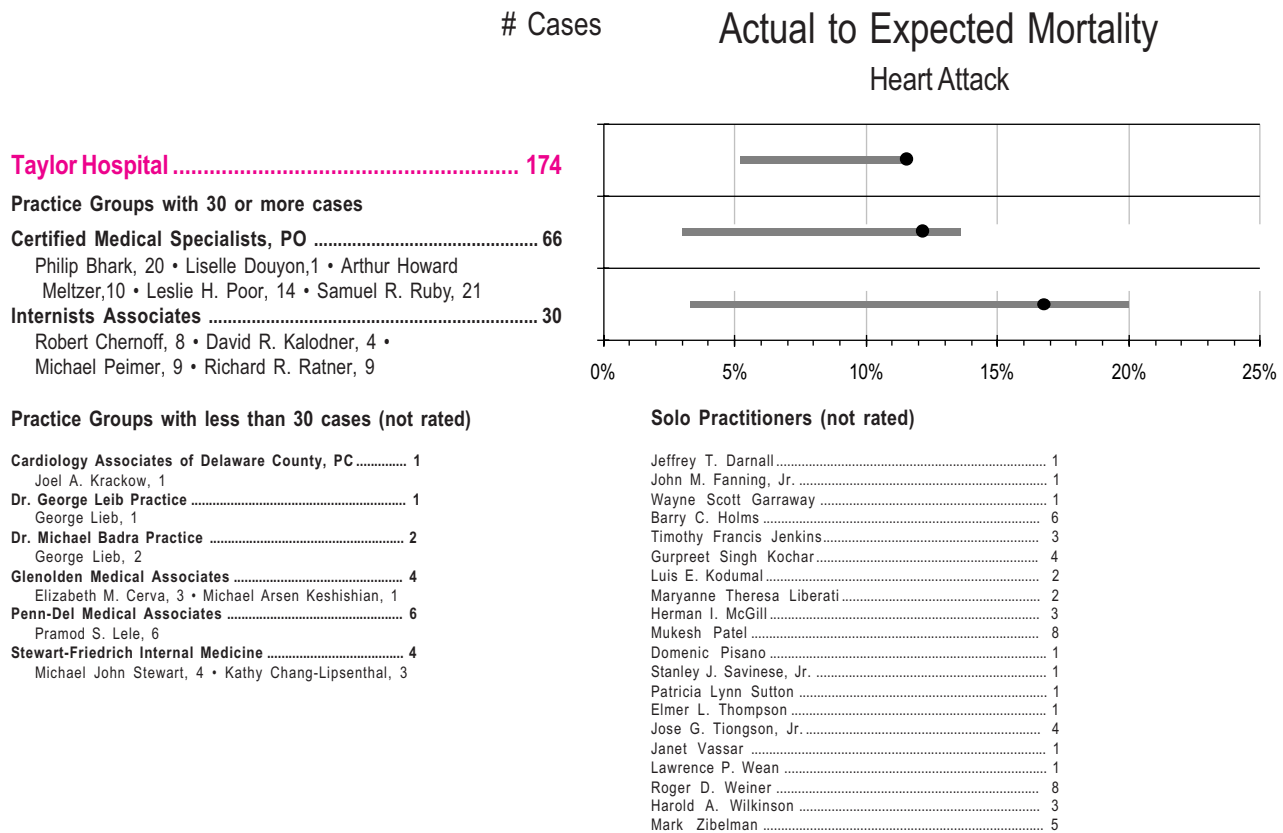
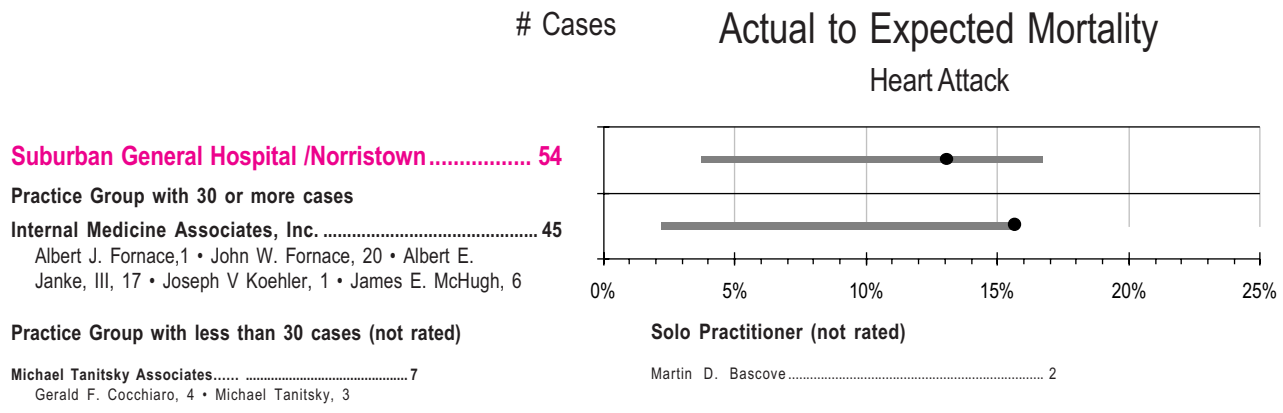
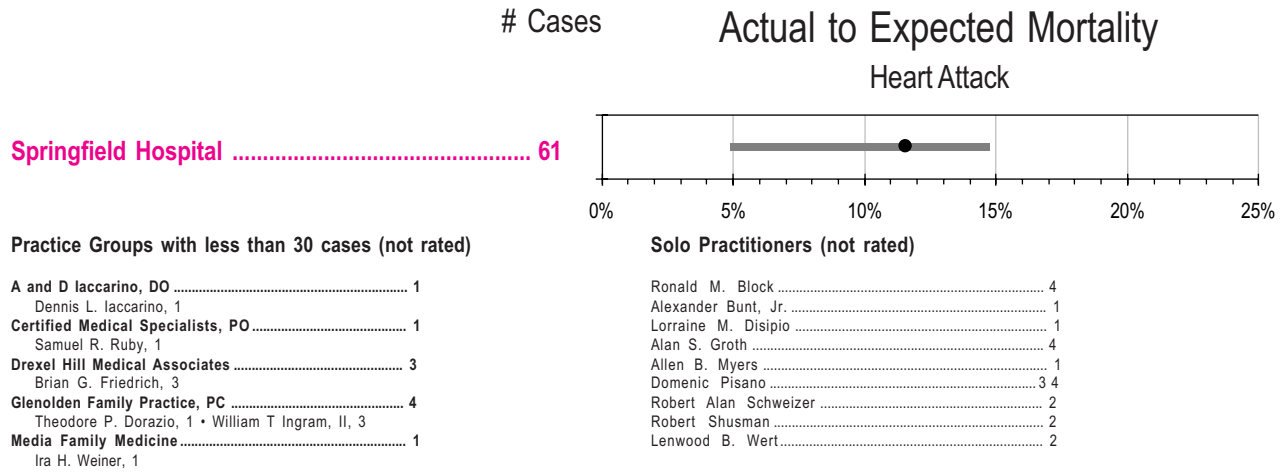
Deepak SantRam 5

Robert E. Schmidt 1

Geoffrey P. Tremblay 3

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
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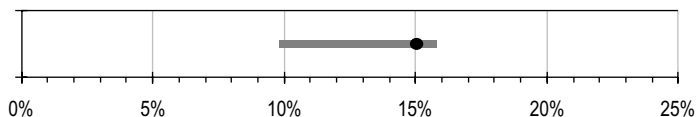


ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC CARE SERVICES

Figure D

Cases Actual to Expected Mortality Heart Attack

Albert Einstein Medical Center 234

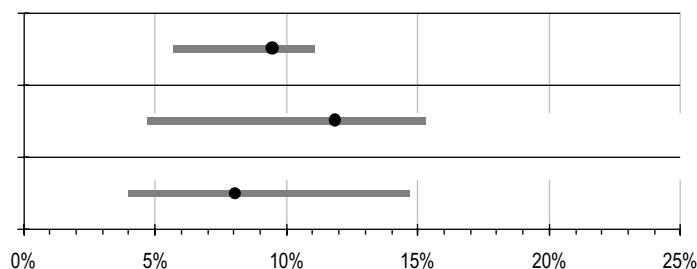


Practice Groups with less than 30 cases (not rated)

Allan Koff, DO, Ltd. 9 Allan E. Koff, 2 • Marvin Schatz, 7	Packman and Cane Internal Medicine Associates 8 Martin Cane, 4 • Barry E. Packman, 3 • Courtney R. Snyder, 1	Solomon Epstein 3 Barry L. Getzoff 1 Suresh C. Ghosh 1
Buschiazzo/Ferreira 3 Horacio J. Buschiazzo, 3	Philadelphia Heart Group 1 Allan M. Greenspan, 1	Harry Goldberg 1 Steven Eric Goldberg 1
Cardiology Associates 5 Edward S. Singer, 2 • A. Mitchell Smith, 3	Regional Internal Medicine 2 Jonathan Paul Oline, 2	Leonard F. Greenberg 11 Sidney Greenstein 2
Chernoff/Korentzmitt 6 Arthur Chernoff, 6	Rosenthal/Brecher/Tiger/Dornstein 7 Eugene Brecher, 4 • Perry I. Dornstein, 3	Marianne Herman 2 Frances C. Hunter 1
Cooperman/Azarva 3 Michael Cooperman, 3	Seymour Siegel, MD Associates 6 Joel M. Glassman, 4 • Seymour Siegel 2	Larry E. Jacobs 5 Howard S. Klein 5
Fischer/Silibovsky/Levy 3 Richard S. Levy, 1 • Randi Silibovsky, 2	Shriji Medical Associates, PC 2 Mukund V. Sheth, 2	David Elliott Knox 3 Morris N. Kotler 1
Grana/Ablaza 1 Sariel Ablaza, 1	Singer/Reinprecht/Feldman 1 James T. Reinprecht, 1	Alberto J. Larrieu 2 Gary Stewart Ledley 7
Internal Medicine Associates 1 Kenneth J. Forman, 1	Sinker/Kravitz 4 Charles H. Kravitz, 4	Martin L. Leicht 1 Frederick Levine 5
Invasive and Interventional Cardiology, Inc. 7 David Lehmann, 4 • Fred K. Nakhjavan, 3	Suburban Cardiovascular Specialists, PC 2 Peter B. Frechie, 11 • Michael J. Martinelli, 2 • John H. Wertheimer, 9	Gary M. Levine 2 Stephen Margolis 2 David M. Masiak 1
Ira R Sharp, MD, Mortimer J Strong, DO 2 Ira R. Sharp, 1 • Franklin D. Strong, 1	WMK Associates, Ltd. 5 Donald L. Kahn, 3 • Asher Woldow, 2	Richard I. Mintz 2 Jaime A. Montanez 2 Craig Marshall Oliner 11
Kim/Aliman/Capkin 3 Mark Capkin, 3	Solo Practitioners (not rated)	Ramalingaier Parameswaran 5 Kevin G. Robinson 1
Kramer/Goldstein/Bloom/Raja 1 Rasib Raja, 1	Alan S. Bailer 2 Wilfreta Gouridine Baugh 4	Brad Michael Rothkopf 6 Michael K. Sallen 1
Menin GI Associates, Ltd. 1 Richard A. Menin, 1	Alan P. Berg 1 Charles Bolno 1	Marjorie Stanek 5 Margo Eleanor Turner 2
Newtown Cardiology Associates 5 Richard W. Kass, 3 • Richard Leshner, 2	Nicholas Cavarocchi 5 Mayer Ciranowicz 2	Rebecca Y. Wang 1 Robert M. Weinstock 4 Steven J. Weiss 7
Northeast Cardiology Group, PC 7 Raymond Schwartz, 4 • Daniel J. Vile, 3		

Cases Actual to Expected Mortality Heart Attack

Bryn Mawr Hospital 297



Practice Groups with 30 or more cases

Bryn Mawr Medical Specialists 85 Francis P. Day, 9 • John P Fisher, 12 • Frank S. Harrison, 20 • Wayne W. Keller, 25 • Ildiko Korenyi-Both, 1 • N. Blair Leroy, 2 • Henry S. Mayer, 16	Cardiology Consultants, Ltd. 75 Glenn Robert Harper, 11 • Frank Thomas Hopkins, 19 • Jack Lee Martin, 12 • Harold J. Robinson, 19 • Michael J. Ryan, Jr., 14
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Practice Groups with less than 30 cases (not rated)

Ashby, Long Medical Group 3 Bonnie Lee Ashby, 1 • Madeleine Long, 2	Olex, Pacropis, Damian Associates 3 Jude Damian, 2 • Andrew Olex, 1	Thomas F. Gumina 1 John J. Hobson 1
Bryn Surgical Group 1 Kirkley R. Williams, 1	Shaeffer and Reitano Medical Associates 1 Joseph Reitano, Jr, 1	Diane Barbara House 1 Gerard F. Klinzing 3
Chester County Cardiology Associates 2 Timothy J. Boyek, 29	Suburban Cardiologists, Ltd. 12 Walter A. Kornienko, 5 • Edward W. LaPorta, 7	William Wolter Lander 1 Randy Gilbert Litman 2
Edward Fleeger and Michael Flanagan, MD 2 Michael D. Flanagan, 2	Solo Practitioners (not rated)	Robert F. Marvin 10 Paul Joseph McCausland 1
Logan Square Medical Associates 3 Norman Paul Alpert, 3	Peter F. Binnion 1 Richard Odgers Brower, Jr 4	William S. Myers 3 Alexander H. O'Neal 4
Main Line Cardiology Associates, PC 8 Elliot M. Gerber, 8	Steven C. Cohen 1 Paul Davis 7	Richard Frank Pacropis 2 Joeseh E. Pappano 1
Marple Medical Associates 17 Alexander G. Karpenos, 1 • Eric Allen Lewis, 14 Mark Lisberger, 2	Bernard Deitch 1 John R. Filip 3 Andrew Fisher 4	A. Wayne Troncelliti 1 James I. Weinberg 2 Edward S. Williams 3 Marc Jonathan Yardney 1

Cases

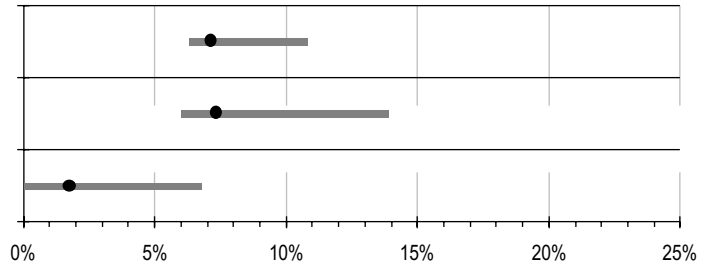
Actual to Expected Mortality
Heart Attack

Crozer-Chester Medical Center 352

Practice Groups with 30 or more cases

Cardiology Associates of Delaware County, PC 151
 Michael B. Adesman, 12 • Ancil Jones, 26 • Joel A. Krackow, 23 • Peter G. Lavine, 23 • Kenneth D. Mendel, 17 • R. David Mishalove, 11 • Adrian S. Weyn, 14 • Michael V. Yow, 25

SGF Cardiology, Inc. 59
 Jonathan C. Felsner, 56 • Michael B. Goodkin, 2 • C. Richard Schott, 1



Practice Groups with less than 30 cases (not rated)

Aston Medical Associates 13
 William L. Cohen, 13

Bell Conrad Corporation 12
 Stephen D. Conrad, 12

Boothwyn Medical Associates, PC 5
 Rodney M. Elkin, 5

Certified Medical Specialists, PO 6
 Arthur Howard Meltzer, 6

Chester Family Practice 3
 David L. Mudrick, 3

Clinical Renal Associates, Ltd. 8
 Sat P. Arora, 4 • G. Randolph Westby, 2 • Susan L. Williams, 2

Crowell - Phillips, DO, PC 3
 Robert F. Crowell, 3

Endocrine Associates 2
 Ruth Ann Fitzpatrick, 1 • Lawrence Wallach, 1

GZP and Associates, Ltd. 7
 Mark R. Goldstein, 3 • Alan H. Zweben, 4

Infectious Disease Associates 5
 Stephen C. Nelson, 4 • William Ravreby, 1

Internal Medicine Associates 5
 Richard J. Goldman, 5

Internal Medicine Associates of Delaware County 1
 Albert H. Fink, Jr., 1

Penn-Del Medical Associates 8
 Pradeep Ambadas Lothe, 7 • Dan A. Teano, 1

Providence Medical Associates 5
 Jonathan Peter Greco, 2 • Rex Kessler, 2 • Woodrow B. Kessler, 1

Pulmonary Consultants, Inc. 1
 Gary D. Wendell, 1

Suburban Surgical Associates, Ltd. 1
 Gary Arlin Lindenbaum, 1

Willowbrook Internal Medicine, Ltd. 5
 Bernard S. Zoranski, 5

Alexander Bunt, Jr. 2
 Paul T. Cass, 2

Fu-Zen Chang 2
 William L. Cook, 2

Jerome A. Garfinkle 1
 Christopher F. Hannum, 1

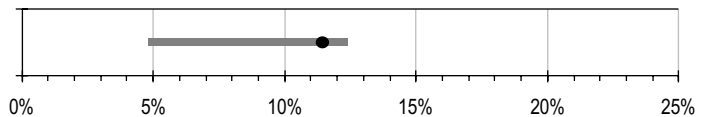
Solo Practitioners (not rated)

Lovell Harris 1
 Vera G. Howland 2
 Brian K. Jorgensen 5
 Mamerto M. Lebita 2
 Maryanne Theresa Liberati 3
 Manuel T. Lim 1
 Ted E. Martynowicz 4
 Morris E. McCray 2
 Seymour W. Milstein 1
 Richard J. Morris 3
 Mary Jane Osmick 1
 Carl L. Pierce, Jr. 1
 Jeffrey Keith Rosen 10
 Emir Rubio 1
 Charles A. Sanbe 1
 Walter W. Schwartz 1
 Edward R. Stankiewicz 1
 Geoffrey P. Tremblay 2

Cases

Actual to Expected Mortality
Heart Attack

Episcopal Hospital 105



Practice Groups with less than 30 cases (not rated)

Blair Medical Associates 4
 Mario J. Poon, 4

Cardiology Associates of Bucks County, Inc. 1
 Rajnikant S. Shah, 1

Dr. Larry Kramer, PC 1
 Larry S. Kramer, 1

Oxford Valley Cardiology Associates, PC 14
 Ramesh K. Adiraju, 4 • Subrahmanyam Chivukula, 1 • Ranga A. Rao, 9

Vidya S Banka Associates, PC 22
 Vidya S. Banka, 16 • Peter S. Fail, 6

Mosen Alavi 2
 Craig Steven Carter, 2

David A. Cohen 3
 Lisette Triana Cooper, 1 • Nirmal K. De, 2

Solo Practitioners (not rated)

Anil Shiram Deshpande 4
 Sharon P. Fischer 2
 Bonnie J. Gardner 5
 Philip Brian Gilman 3
 Linda A. Haegele 1
 Veerandra Kumar 1
 Wallace Llera 1
 Arun Mohanty 7
 Manuel Montero 2
 Rosalie Pepe 1
 John E. Prior 2
 Hass Shafia 12
 Nelliate C. Shyamalan 2
 Francisco Leonel Toledo 2
 Nghiep H. Truong 1
 Shailendra S. Vaidya 1
 Gerardo Voci 3
 Jordan B. Weiss 1
 Owen W. Williamson 2

KEY

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- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

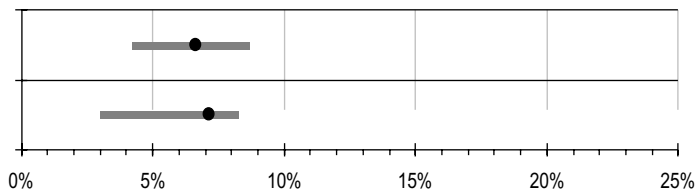
Cases Actual to Expected Mortality Heart Attack

Graduate Hospital 288

Practice Group with 30 or more cases

Cardiology Consultants 169

- Bruce C. Berger, 26 • Peter R. Duca, 38 • Ronald Gottlieb, 7 • Richard Greenberg, 8 • Hratch Kasparian, 10 • Robert Bruce Kleiman, 2 • Thomas Kreulen, 28 • Robert Lester, 23 • Lawrence T. Rozanski, 18 • Robert B. Schlesinger, 9



Practice Groups with less than 30 cases (not rated)

- Cardiology Associates of Chestnut Hill** 1
Jonathan Gomberg, 1
- Clinical Cardiology Group, PC** 4
Kevin P. Furey, 4
- Cohen/ Rosenfeld/ Alpert** 1
Richard Rosenfeld, 1
- Endocrine Metabolic Medical Associates** 1
Robert S. Rudenstein, 1
- Graduate Cardiology Consultants** 3
Frank V. Brozovich, 3
- Graduate Cardiothoracic Surgical Associates, PC** 21
James David Albert, 3 • William G. Hendren, 18
- GI Associates** 3
George Ahtaridis, 1 • Steven Greenfield, 1 • Anthony Infantolino, 1
- Health Associates of South Philadelphia** 1
Noble S. Jones, 1
- Internal Medicine Associates** 6
Michael Baime, 3 • Donald Liss, 1 • Eliot H. Nierman, 2
- Lackner Medical Associates** 1
Leon E. Schwartz, 1
- Lombard Medical Associates** 4
Jeffrey S. Berns, 1 • Raphael Cohen, 2 • Michael Rudnick, 1
- Mason/Staddon/Henry** 4
David H. Henry, 3 • Arthur Petrie Staddon, 1
- Nelson Medical Group** 1
Claxton L. Crowder, 1
- Philadelphia Arthritis Consultants** 1
Kendra Kaye, 1
- Philadelphia Health Associates** 10
George Nemr Chamoun, 4 • Carl M. Levitsky, 1 • David S. Schwartz, 5
- Plzak, Goldenburg, Woody** 22
Marc R. Goldenberg, 9 • Louis F. Plzak, Jr., 5 • Daniel J. Woody, 8
- Pulmonary Associates** 2
Stephen A. Mette, 2

Solo Practitioners (not rated)

- Robert P. Biggans 5
- Harry A. Frankel 1
- Edward Gosfield, Jr. 1
- George Thomas Hayes, Jr. 2
- Gurpreet Singh Kochar 3
- Donald Wolf Lavan 3
- Alan A. Magner 1
- Tobia John Mercuro 4
- Jay R. Moore 2
- William P. Mulloy 1
- Albert Saul 6
- Arthur E. Smith 2
- Mark Thomas Watkins 1
- Raul Yankelevich 1

KEY

- Actual Mortality Rate, 1993 — Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

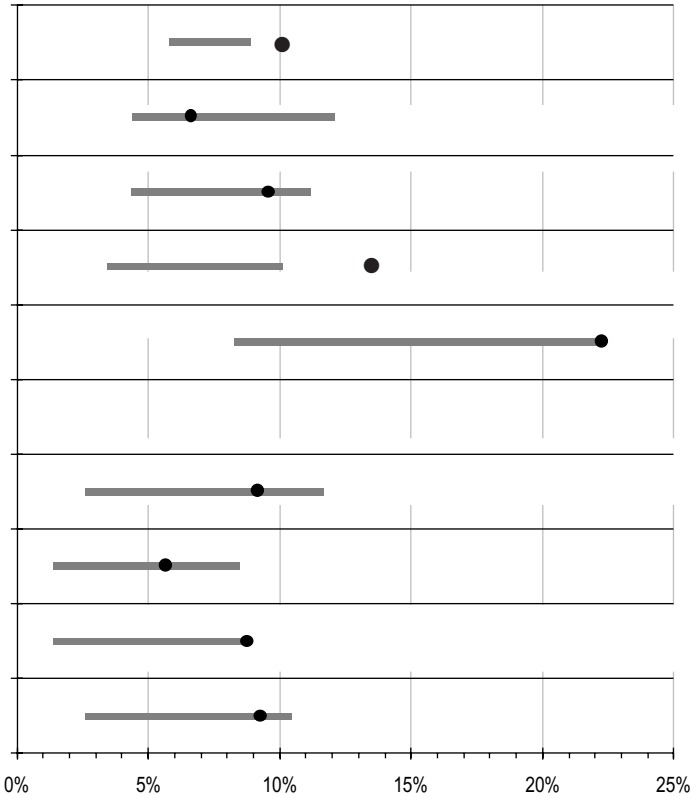
Cases

Actual to Expected Mortality
Heart Attack

***Hahnemann Univerity Hospital 718**

Practice Groups with 30 or more cases

- Bala Cardiovascular Group, Ltd. 91**
Manoj Khandelwal, 17 • Francis J. Uricchio, 57 • Joseph F. Uricchio, 17
- Cardiology Consultants of Philadelphia 116**
Veronica Ann Covalesky, 16 • Dean G. Karalis, 12 • Daniel McCormick, 12 • Pat M. Procacci, 28 • Mark F. Victor, 48
- *G Scharf, R MacMillan, and C Frankil Associates 89**
Craig Alan Frankil, 11 • Robert MacMillan, 38 • Gerald Scharf, 40
- Hahnemann Medical Faculty Associates 36**
Philip L. Benditt, 3 • Sallyann Margaret Bowman, 1 • Susan Brozena, 3 • Krishnaswam Chandrasekaram, 4 • Leonard S. Dreifus, 11 • Jane Moira Fitzpatrick, 4 • Arnold Gash, 2 • Demetrios Kimbiris, 3 • David S. Kountz, 2 • Elisa Beth Mandel, 1 • Mary S. Murphy, 1 • William Clay Warnick, 1
- Mason/Spitzer/Parris/Garibian 77**
Garo S. Garibian, 2 • Daniel Mason, 3 • Richard A. Narvaez, 24 • Ted M. Parris, 16 • Stanley Spitzer, 32
- Owens/Vergari/Unwala Cardiology Associates 71**
John Stuart Owens, 24 • Ashfaque Unwala, 43 • John Anthony Vergari, Jr., 4
- Pennock/Snyder Associates 69**
Ronald S. Pennock, 48 • Stuart Snyder, 21
- Philadelphia Heart Group 76**
Charles E. Bemis, 32 • Allan M. Greenspan, 7 • William S. Haaz, 16 • Sean Francis Janzer, 11 • Bruno V Manno, Jr., 7 • Scott R. Spielman, 3



Practice Groups with less than 30 cases (not rated)

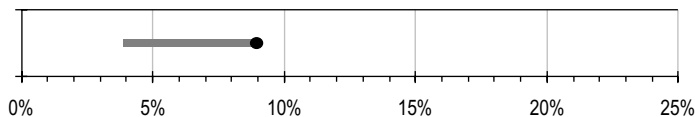
- Cardiac and Thoracic Surgeons, PC 2**
Jeffrey B. Alpern, 1 • Michael D. Strong, III, 1
- Cardiac Cath Associates 19**
Marc Cohen, 19
- Clinical Nephrology Associates, Ltd. 7**
Joseph H. Brezin, 1 • Larry Krevolin, 4 • Arthur R. Olshan, 2
- Electrophysiology Associates 1**
Robert Charles Sheppard, 1
- Greater Philadelphia Cardiology Associates, Inc. 19**
Gaetano Capone, 12 • Louis R. Leo, 7
- Hahnemann Nephrology Associates 1**
Kwan E. Kim, 1
- Northeast Cardiology Consultants 10**
Richard Vassallo, 10
- Oaks, Miller and Boselli Associates 7**
Howard A. Miller, 3 • Wilbur W. Oaks, 4
- Respiratory Associates, Ltd. 1**
Robert A. Promisloff, 1
- South Philadelphia Cardiovascular Center 14**
George Anthony Davis, 8 • Pasquale F. Nestico, 6
- 2126 Fairmount Medical, Inc. 5**
Thompson H. Boyd, III, 5

Solo Practitioners (not rated)

- Sheldon Richard Bender 3
- Gerald Chalal 1
- Emil P. Sfedu 3

Cases Actual to Expected Mortality Heart Attack

Hospital of the University of PA 258

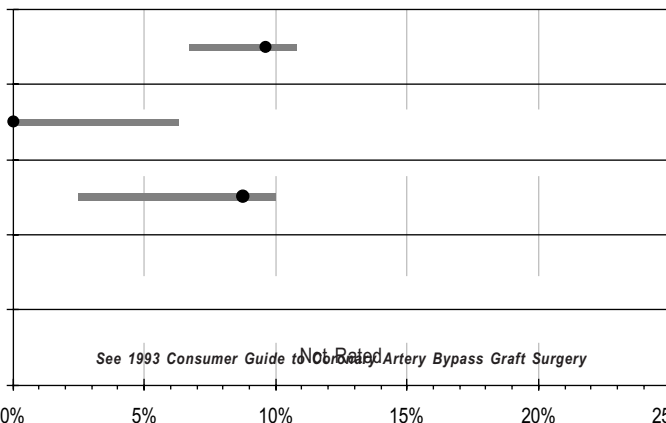


Practice Group with less than 30 cases (not rated)

Heart Care Associates, Ltd. 1	Robert A. Grossman 2	Harold Palevsky 2
Timothy A. Shapiro, 1	Steven Allan Guidera 1	Mark Boyce Ratcliffe 4
	Daniel G. Haller 1	Milton D. Rossman 1
Solo Practitioners (not rated)	Irving M. Herling 4	Truman G. Schwabel 1
	Howard C. Herrmann 2	Stanley S. Schwartz 3
	John W. Hirshfeld, Jr. 8	Sanford Shattil 1
Michael A. Acker 7	David Allan Horowitz 1	Richard V. Sims 1
Joseph E. Bavaria 13	Paul F. Kelly 1	Michael B. Simson 4
Seth N. Braunstein 1	Kathryn Elizabeth Kindwall 10	Thorne Sparkman, Jr. 1
Ronald Eugene Cirullo 1	Daniel M. Kolansky 21	Sutton M. St. John 3
G. Walter Crooks 4	Warren Laskey 3	Judith Lea Swain 2
Verdi J. DiSesa 3	Gary Lichtenstein 1	Craig Peter Tanio 2
L. Henry Edmunds, Jr. 14	Donna Mancini 1	Alan Wasserstein 2
Howard Joel Eisen 3	David McCarthy 15	Arthur F. Whereat 16
Ian Frank 1	Joseph Robert McClellan 10	Susan Elizabeth Wiegiers 3
Timothy J. Gardner 8	Gail Morrison 1	John Randolph Wilson 2
David R. Goldmann 1	Eric Neilson 1	Burton Zweiman 1
Manfred I. Goldwein 2		

Cases Actual to Expected Mortality Heart Attack

Lankenau Hospital 417



Practice Groups with 30 or more cases

Heart Care Associates, Ltd. 32
Paul M. Coady, 12 • Peter M. DiBattiste, 7 • Timothy A. Shapiro, 13
Kelly Cardiovascular Group 80
James F. Burke, 18 • Michael J. Dougherty, 8 • Maribel Hernandez, 2 • James G. Kitchen, III, 13 • Joseph G. Lewis, 4 • Frank C. McGeehin, III, 11 • Thomas P. Phiambolis, 4 • John W. Shuck, 15 • Donald F. Yih, 5
Main Line Cardiothoracic Surgery, PC 53
Scott M. Goldman, 23 • Francis P. Sutter, 30

Practice Groups with less than 30 cases (not rated)

Bala Cardiovascular Group, Ltd. 16	Tomasello and Casey, PC 2	Henry T. Ling 2
Manoj Khandelwal, 4 • Francis J. Uricchio, 9 • Joseph F. Uricchio, 3	Kevin Casey, 15 • Donald N. Tomasello, 11	Mario Littman 2
Bortin-Wells, MD Associates 3	Denis Maurice Abelson 3	James B. McGovern 2
Ronald Barg, 3	Lamberto G. Bentivoglio, 3	Alan Lowell Mezey 8
Cardiology Medical Associates, PC 7	Solo Practitioners (not rated)	William D. Miller 2
Gerald L. DeVaughn, 4 • Michael A. Williams, 3	Bruce Ian Blatt 1	Abdol N. Moghadam 1
Clinical Cardiology Group, PC 1	Catherine Clarke 3	Ward John O'Donnell 7
Kevin P. Furey, 1	David A. Cohen 5	Jack Edward Pickering 2
Greater Philadelphia Cardiology Associates, Inc. 17	Donald J. Corey 6	Domenic Pisano 3
Gaetano Capone, 7 • Louis R. Leo, 10	Thomas Deberardinis 5	Richard L. Roseman 5
Main Line Arrhythmia and Cardiology Consultants 3	Michael Francis Devine, Jr. 2	Jonathan D. Satinsky 4
Peter Kowey, 2 • Roger Marinchak, 1	Ervin Saphir Fleishman 2	Henry S. Sawin 11
Montgomery Medical Associates 19	Leroy T. Gerson 10	William R. Schetman 6
Edward Russell Magargee, 11 • Steve A. Vaganos, 8	Charles Kenderdine Gorby 2	Cynthia Calbot Sczepsanski 2
Nephrology Associates, Inc. 5	Alvin Gordon Heller 2	Richard S. Toof 1
Samuel K. Snyder, 2 • Brendan P. Teehan, 3	Diana H. Hutchins 2	Geoffrey P. Tremblay 21
Silver, Nansteel and Morris 2	Kim Patrice Kuhar 2	Gordon Woodhall Webster 1
James A. Morris, Jr., 6 • John Nansteel, 4 • Bruce Silver, 10	Edward M. Laska 3	Robert Weiss 2
		Donald J. Wexlin 1
		Timothy A. Woods 1

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases

Actual to Expected Mortality
Heart Attack

Lehigh Valley Hospital 826

Practice Groups with 30 or more cases

Cardiology Care Specialists 167

Luis Constantin, 8 • Bruce Feldman, 24 • David B. Goldner, 4 • Joseph P. Kleaveland, 31 • Dennis Lynn Morris, 30 • Michael Anthony Rossi, 27 • Melvin H. Schwartz, 29 • Bruce J. Silverberg, 14

Cardiovascular Associates 253

Donald J. Belmont, 28 • Hugh S. Gallagher, 29 • Paul Gulotta, 24 • Bryan W. Kluck, 24 • Pieter Knibbe, 14 • Norman H. Marcus, 21 • Stephen T. Olex, 17 • Robert J. Oriol, 27 • James A. Pantano, 25 • Gerald E. Pytlewski, 11 • James Alan Sandberg, 18 • Norman S. Sarachek, 15

John J Cassel, MD, PC 95

John J. Cassel, 31 • Jamie D. Paranicas, 25 • Jeffrey Curtis Snyder, 39

Syed A Subzposh, MD, PC 46

Eugene E. Ordway, 21 • Syed A. Subzposh, 25

Practice Groups with less than 30 cases (not rated)

Candio, Feldman, Kovacs and Guillard 10

Joseph A. Candio, 2 • Larry Bruce Feldman, 1 • Paul Guillard, 4 • Robert J. Kovacs, 3

Coopersburg Medical Associates 3

Jeffrey Alan Debuque, 1 • William Ronald Swayser, Jr., 2

Drs. Ellsweig and Loffredo 1

Linda S. Loffredo, 1

Drs. McGorry and Neumann 10

Dennis M. McGorry, 4 • Peter H. Neumann, 3 • Louis Eric Spikol, 3

Drs. Mishkin, Rappaport, Shore and Rentler 18

Mark Mishkin, 2 • Daniel Michael Rappaport, 8 • Russell J. Rentler, 1 • Stephen R. Shore, 7

Drs. Mishriki, Kelley, Karess and Levy 16

Gina Maria Karess, 8 • Mark Damien Kelley, 5 • Jenni Levy, 3

Drs. Peters, Caccese, Scott and DuGan 27

David M. Caccese, 13 • Gary Mitchell Dugan, 6 • Charles D. Peters, 3 • Steven Alfred Scott, 5

Drs. Wolf and Kender 2

Mark A. Kender, 2

Eastern Pennsylvania Nephrology Associates 4

Joseph C. Guzzo, 1 • Douglas E. Johnson, 1 • James E. Kintzel, 1 • Randy A. Rosen, 1

Eaton Avenue Medical Care, 1

Nercy Jafari, 1

Hematology-Oncology Associates, Inc. 1

Lloyd E Barron, II, 1

Lehigh Internal Medicine Associates 1

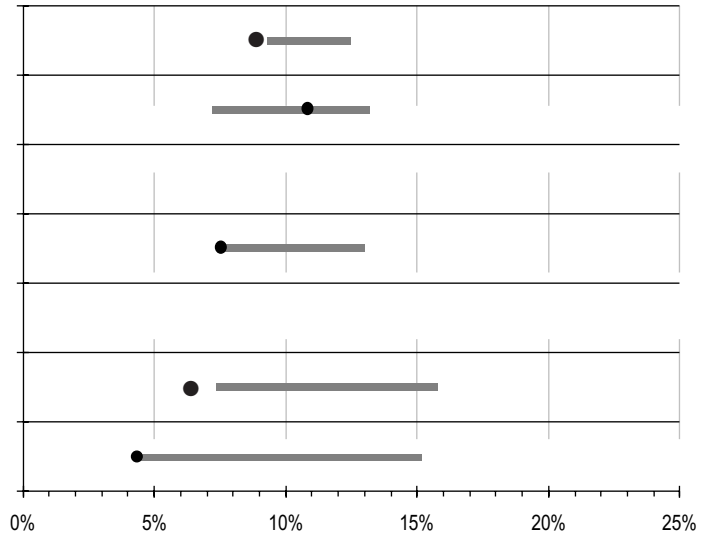
Jonathan W. Bortz, 1

Lehigh Valley Cardiology Associates 20

Robert H. Biggs, 4 • Ian Chan, 2 • Kenneth P. Skorinko, 11 • Anthony M. Urbano, 3

Lehigh Valley Internists, Ltd. 20

David P. Carney, 6 • Joseph W. Gastinger, 6 • Glenn S. Kratzer, 3 • John D. Nuschke, Jr., 5



Lehigh Valley Medical Associates 14

Michael R. Goldner, 3 • James T. McNelis, 11

Medical and Geriatric Associates 20

Thomas G. Brandecker, 2 • Gene H. Ginsberg, 9 • Charles Alan Gordon, 9

Mertztown Community Medical Center 1

Chandrakant Shah, 1

Nephrology-Hypertension Associates of Lehigh Valley 3

Drew S. Harrison, 1 • Nelson P. Kopyt, 2

Panebianco-Yip Heart Surgeons 23

David A. Gordon, 6 • Theodore George Phillips, 3 • Farrokh S. Sadr, 3 • Michael C. Sinclair, 3 • Raymond L. Singer, 4 • Geary L. Yeisley, 4

Parkland Family Health Center 2

Jack Andrew Lenhart, 1 • Harvey Bruce Passman, 1

Peripheral Vascular Surgeons, PC 2

Victor J. Celani, 1 • John Francis Welkie, 1

Pulmonary Associates 2

John A. Kibelstis, 1 • Francis Schwiep, 1

Quakertown Medical Associates 12

Erin M. Fly, 1 • Russell Hayden Jenkins, 6 • Jon Howard Schwartz, 4 • Paul W. Weibel, Jr., 1

Stein and Markson Cardiology 27

Kenneth A. Bernhard, 22 • Ronald Alan Stein, 5

Solo Practitioners (not rated)

Steven Farbowitz 3

Peter H. Goldman 1

Jay Elliot Kloin 1

Joseph N. Nader 15

John B. Paulus 4

Frank Geoffrey Toonder 1

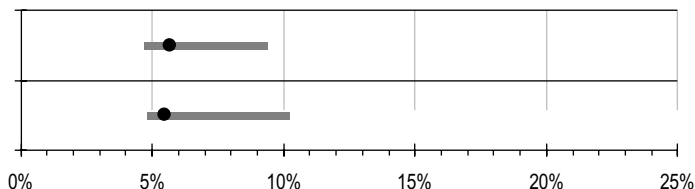
Cases Actual to Expected Mortality Heart Attack

Medical College Hospital /Main Campus 213

Practice Group with 30 or more cases

MCP Cardiovascular Disease Associates 167

- Herbert A. Fischer, 13 • William S. Frankl, 42 • Steven G. Meister, 46 • Randy T. Mintz, 11 • Alexis B. Sokil, 8 • Nelson Wolf, 47



Practice Groups with less than 30 cases (not rated)

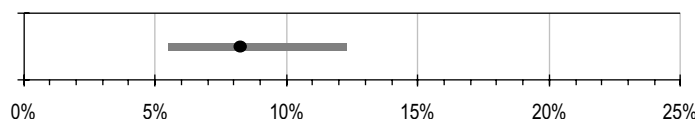
- Cardiology Associates of Chestnut Hill 12**
Alison Elizabeth Branigan, 2 • Jonathan Gornberg, 10
- Clinical Cardiology Group, PC 6**
Kevin P. Furey, 6
- Endocrine Metabolic Associates, PC 2**
Neil T. Streisfeld, 2
- Henry Avenue Medical Center Associates 1**
Deborah M. Pressman, 1
- Lankenau Medical Office Associates 1**
Joseph G. Lewis, 1

Solo Practitioners (not rated)

- Lista-Abrams Associates 1**
Cyril Abrams, 1
- MCP Geriatrics Associates 1**
Mary Teresa Hofmann, 1
- MCP Primary Care Unit 3**
Marlene Fox Goldwein, 1 • Sallie Gina Stadlen, 2
- Philadelphia Veterans Medical Center 1**
Gregg Lipschick, 1
- Suburban Cardiovascular Specialists, PC 8**
Peter B. Frechie, 4 • Michael J. Martinelli, 4
- Michael J. Barrett 2
- Bethala B. Franklin 1
- Melvin Langston Jackson 1
- Nyok Kheng Lim 1
- Nancy Pickering 1
- Cyriac Thomas Thachet 1
- Jeffrey S. Weisman 3

Cases Actual to Expected Mortality Heart Attack

Pennsylvania Hospital 146



Practice Groups with less than 30 cases (not rated)

- Cardiology Associates 8**
Ronald J. Carabelli, 4 • Edward S. Singer, 1
A. Mitchell Smith, 3
- Cardiothoracic Surgical Associates 20**
James T. Diehl, 11 • Arthur Robert Dresdale, 9
- Casey, Lugano, Kotler Pulmonary 1**
Michael P. Casey, 1
- Daniels/Dorshimer Medical Associates 5**
Roger Daniels, 3 • Gary W. Dorshimer, 2
- Francis C Kempf, Jr, MD, PC 13**
Francis C. Kempf, Jr., 8 • Robert B. Norris, 5
- Ira R Sharp, MD, Mortimer J Strong, DO 1**
Ira R. Sharp, 1
- Nicholas L DePace, MD, PC 4**
Nicholas L. DePace, 4
- Ninth Street Internal Medicine 4**
Allan Lawrence Crimm, 3 • Amy Hope Finkelstein, 1
- Pennsylvania Cardiology Associates 24**
Mark David Berger, 5 • Joseph DeSantola, 3 • David S. Poll, 1 • Gregg J. Reis, 14 • Jacob Zatuschni, 1
- Pennsylvania Cardiothoracic Surgical Associates 5**
Walter Clark Hargrove, III, 5

- Wolf-Gerhardt Associates 5**
Robert E. Gerhardt, 1 • Joel David Glickman, 3
Charles J. Wolf, 1
- Zubrow, Kershbaum, Cohen, MD, PC 12**
Paul A. G. Cohen, 1 • Sylvan J. Hurewitz, 1
• Kenneth Kershbaum, 6 • Nicholas Scharff, 2 • Sidney N. Zubrow, 2 •

Solo Practitioners (not rated)

- Kenneth Robert Barmach 3
- John U. Doherty 7
- Theodore G. Duncan 2
- Allison Bronwen Evans 1
- George R. Fisher 2
- Matthew Frankel 1
- GS Peter Gross 1
- Richard F. Grunt 3
- Arthur A. Hellman 2
- Milton N. Kitei 1
- Leonard J. Kryston 1
- William Kussmaul 6
- Sanat K. Mandal 5
- Harold L. Rutenberg 7
- Joseph Schatanoff 2

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases

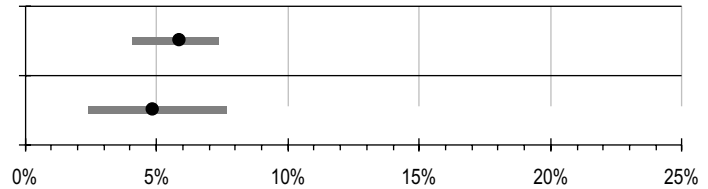
Actual to Expected Mortality
Heart Attack

Presbyterian Medical Center of Philadelphia 462

Practice Group with 30 or more cases

Philadelphia Cardiology Associates, Inc. 168

Mariell Jessup, 15 • Mark William Preminger, 12 •
Bernard L. Segal, 137 • Marc Anthony Tecce, 4

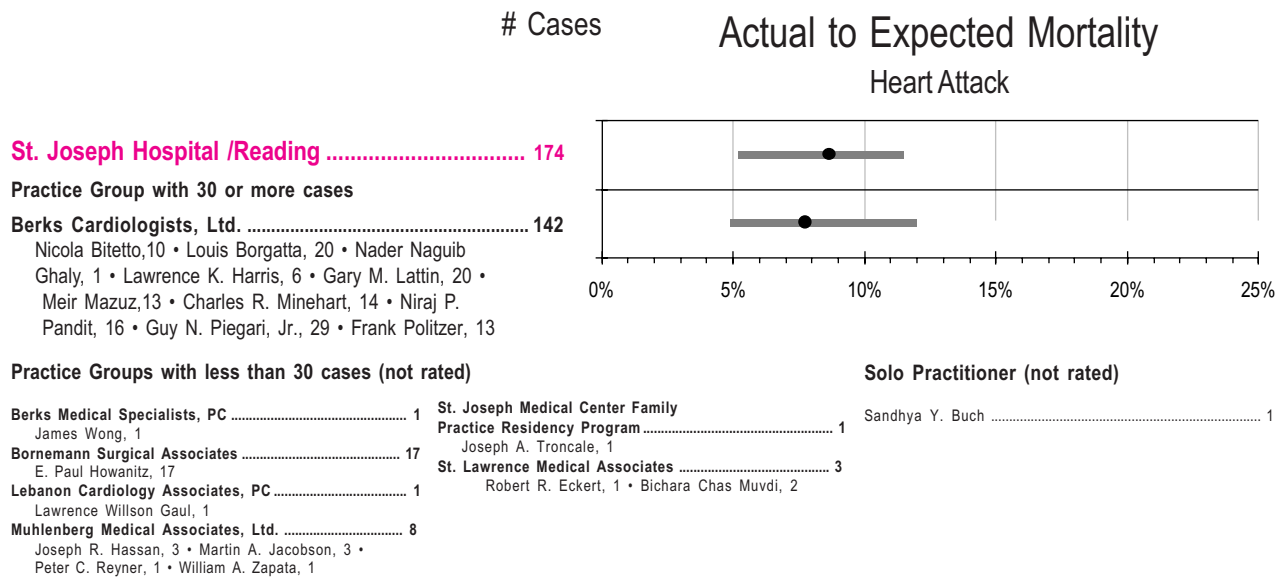
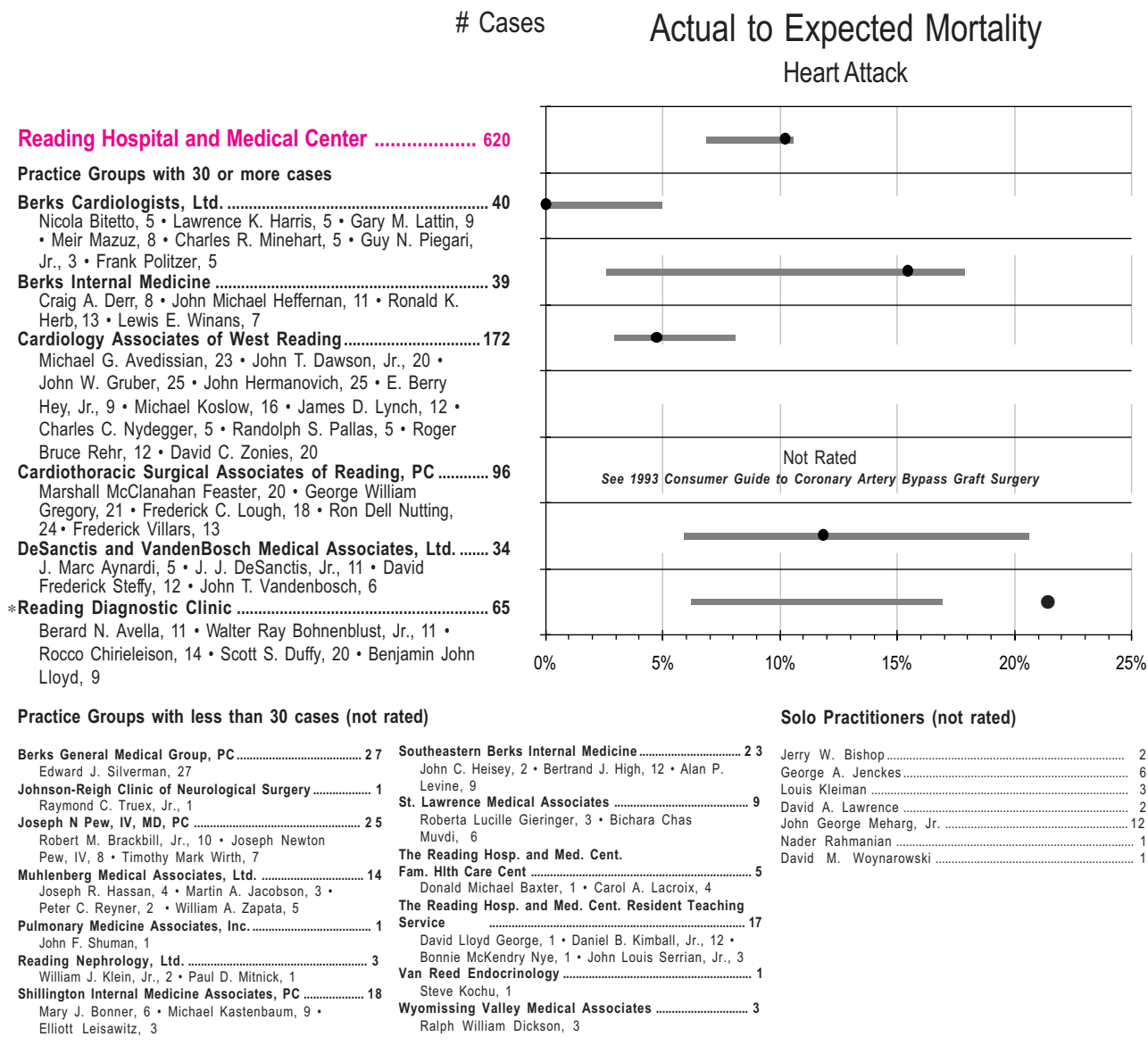


Practice Groups with less than 30 cases (not rated)

- DiMarino-Kroop-Prieto GI Associates 2
Robert M. Coben, 2
- Heart Care Associates, Ltd. 5
Paul M. Coady, 1 • Peter M. DiBattiste, 4
- Herman, Garden, and Nirenberg Card. Associates, PC 13
Steven J. Nierenberg, 13
- Internal Medicine Specialties 14
Howard Marc Rosner, 12 • Marvin L. Rosner, 2
- Nicholas L DePace, MD, PC 13
Nicholas L. DePace, 12 • David M. Elbaum, 1
- Pennsylvania Cardiology Associates 2
Joseph DeSantola, 1 • Gregg J. Reis, 1
- Shinnick, Freedman, Karlin Pulmonary Associates, PC 1
Allan P. Freedman, 1

Solo Practitioners (not rated)

- Luigi Anthony Cianci 1
- Herbert E. Cohen 2
- Donald J. Corey 2
- Norman Feinsmith 6
- Arthur M. Feldman 1
- Michael S. Feldman 8
- Bradley W. Fenton 4
- David Finkel 3
- Joseph S. Gordon 1
- Charles Gottlieb 1
- Joel A. Griska 1
- Robert I. Katz 2
- Kim Patrice Kuhar 3
- Bradford Jay Lin 4
- Francis Marchlinski 1
- Russell C. Maulitz 3
- Michael Lynn Nussbaum 1
- John David Ogilby 9
- Anastasios Pelias 2
- Ana L. Pujols-Mckee 1
- Steven A. Silber 1
- William J. Untereker 55
- Gary J. Vigilante 51



Cases

Actual to Expected Mortality
Heart Attack

St. Luke's Hospital of Bethlehem 512

Practice Groups with 30 or more cases

Cardiovascular Medicine, PC 35

Robert F. Malacoff, 35

Giamber, Dale and Smith 111

Hiram Thompson Dale, 46 • Sam R. Giamber, 44 •
Stafford M. Smith, 21

Lehigh Valley Cardiology Associates 69

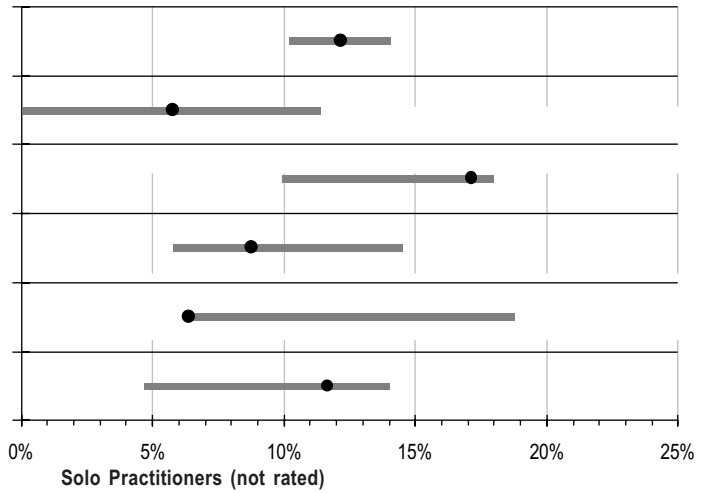
Ian Chan, 1 • John A. Mannisi, 15 • Kenneth P. Skorinko,
26 • Anthony M. Urbano, 27

Two Rivers Cardiology Associates 32

Thomas Little, 32

Valley Cardiology Associates 43

Richard Harris Dyckman, 13 • David Peter Scoblionko, 30



Practice Groups with less than 30 cases (not rated)

Bethlehem Cardiothoracic Surgical Associates, PC 15

William S. Hoffman, 6 • Terrill E. Theman, 9

Bethlehem Pulmonary Associates 1

Brian P. Burlew, 1

Doctor's Pavilion Internal Medicine, Inc. 4

Joseph F. Bacak, III, 4

Easton Cardiovascular Associates, PC 10

Gary Aldo Costacurta, 3 • Rajeev Rohatgi, 1 •
Joseph Adriano Schiavone, 6

Linda Blose, MD and Jane Garnjost, DO 3

Jane Karin Garnjost, 3

Linden Street Medical Practice 6

Joseph E. Bartos, 3 • Susan Joan Sefick, 1 •
Stanley A. Yevelson, 2

Medical Associates of Monroe County 5

Mark Francis Indzonka, 5

Nephrology-Hypertension Associates of Lehigh Valley 6

Drew S. Harrison, 3 • Nelson P. Kopyt, 2 •
Robert J. Weiss, 1

Northside Internal Medicine 5

David E. Hoffman, 4 • John E. Hoffman, 1

Pocono Cardiology Associates, PC 1

Gordon W. Fried, 1

**Pulmonary Medicine Associates
of the Lehigh Valley, PC** 2

Alan Seth Brau, 1 • John S. Kintzer, 1

South Mountain Family Practice Center, Inc. 7

Michael A. Abgott, 5 • Dale A. Grove, Jr, 2

Solo Practitioners (not rated)

Richard J. Angelico 52

Jay Bennett Berger 6

Harold S. Campbell 2

Chi-Kue Tony Chang 1

Nicholas A. Cook 3

Fabio L. Dorville 5

Gloria T. Fioravanti 2

Miguel Angel Gonzalez 4

Ronald R. Julia 2

Aoun Basheer Kara 21

Walter E. Margie 1

Gladys D. Morales 2

Jonathan H. Munves 1

Minh Quang Nguyen 29

H. N. Olewiler 4

Michael A. Patrick 3

James Evan Phillips 2

James R. Regan 1

Iqbal Sorathia 1

Sam S. Weng 2

Joseph James Zaladonis 13

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Cases Actual to Expected Mortality Heart Attack

Temple University Hospital 158

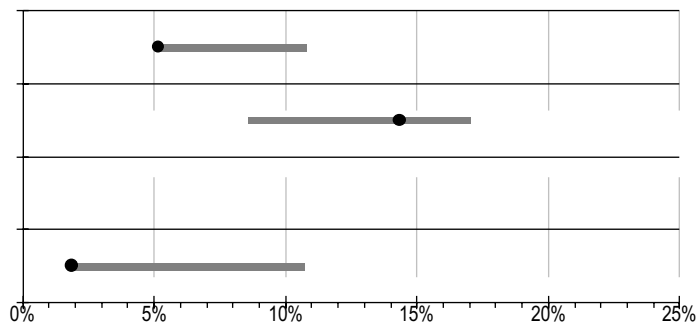
Practice Groups with 30 or more cases

Temple Cardiology Associates 35

Alfred Bove, 2 • James Addison Burke, 1 • William G. Combs, 9 • Ezra Deutsch, 2 • Henry H. Hsia, 1 • Kenneth Margulies, 1 • Michael McDonough, 6 • John Michael Miller, 1 • Ioannis Panidis, 2 • Louis Soloff, 1 • Howard Warner, 4 • David H. Wiener, 5

Temple University Medical Practices 56

Victor E. Adlin, 1 • Peter I. Axelrod, 1 • Steven M. Berney, 1 • Martin Black, 2 • Margot Inez Boigon, 1 • Anthony Francis Bonagura, 3 • Janet Filemyr Burkholder, 4 • Bertram Channick, 1 • Douglas C. Conaway, 2 • Gilbert Edward Dalonzo, 2 • Diane Louise Dietzen, 1 • Kevin J. Ennis, 1 • Frank K. Friedenber, 4 • Martin Goldberg, 2 • Stuart Lee Goldberg, 1 • Michael Heifets, 1 • Brenda Jean Horwitz, 1 • Ira Kelberman, 1 • Steven G. Kelsen, 1 • Samuel Krachman, 1 • Friedrich Kueppers, 1 • Debra Sue Leizman, 2 • Darilyn Moyer, 1 • Elliot Charles Norry, 2 • Henry P. Parkman, 1 • Starr Patricia Pearson, 1 • Stephanie Brooks Prisch, 2 • Mindi Meltzer Roeser, 3 • Ronald N. Rubin, 3 • Sandra F. Schnall, 1 • Charles Shuman, 1 • David Barnet Sokol, 3 • Robert Swenson, 1 • Charles Tourtellotte, 1 • Peter Walsh, 1



Practice Groups with less than 30 cases (not rated)

- Abington Cardiology Associates, Ltd. 4
Robert A. Watson, III, 4
- Abington Medical Specialists 12
Marc C. Cohen, 12
- Bucks County Cardiology Associates 6
Ronald H. Fields, 6
- Cardiology Associates of Trenton 3
David N. Rosvold, 3
- Cardiovascular Associates of the Delaware Valley 16
Michael Bruce Herlich, 9 • Phillip A. Koren, 3 • Harvey Andrew Snyder, 4
- Temple Cardio-Thoracic Associates 22
V. Paul Addonizio, 4 • Satoshi Furukawa, 6 • Valluvan Jeevanandam, 8 • James B. McClurken, 4

Solo Practitioners (not rated)

- Albert J. Finestone 2
- Harold Hyman 1
- Tarun Ray 1

Cases Actual to Expected Mortality Heart Attack

Thomas Jefferson University Hospital 163

Practice Groups with less than 30 cases (not rated)

- Edie/Mannion/Armenti 13
Frederick R. Armenti, 6 • Richard N. Edie, 2 • John D. Mannion, 5
- General Medicine Associates (MERLI) 12
Kenneth R. Epstein, 1 • Christine Anne Lainem, 1 • Rosemarie Anne Leuzzi, 2 • David Bret Nash, 1 • Carol Marcia Reife, 1 • John M. Spandorfer, 1 • James Witek, 2 • Barry S. Ziring, 3
- Girardo/Decaro/Bravette 22
Barry Alan Bravette, 7 • Matthew V. Decaro, 12 • Salvatore P. Girardo, 3
- Graham/Mokrynski 1
Gregory Mokrynski, 1
- Greenspan/Datorre 1
Arnold J. Greenspan, 1
- Griffith/Eliades 9
William Eliades, 5 • John R. Griffith, 4
- Herman, Garden, and Nirenberg Cardiology Associates, PC 6
Jack L. Garden, 1 • Walter M. Herman, 4 • Steven J. Nirenberg, 1

- Jefferson Cardiovascular Associates 28
David L. Fischman, 3 • Ruth Ida Stolz, 1 • Perry Jay Weinstock, 10 • Howard Hy Weitz, 13 • Andrew Zalewski, 1
- Jefferson Family Medicine Associates 10
Christopher V. Chambers, 2 • Fred William Markham, Jr., 2 • Karen D. Novielli, 2 • Robert L. Perkel 1, • James D. Plumb, 1 • George P. Valko, 1 • Richard W. Wender, 1
- Jefferson Pulmonary Associates 1
Jonathan Eli Gottlieb, 1
- Nimoityn/Jonathan Seltzer 9
Philip Nimoityn, 9
- Pizak, Goldenburg, Woody 1
Marc R. Goldenberg, 1
- Renal Associates 2
Anatole Besarab, 1 • Herman Joseph Michael, Jr., 1
- Thomas Jefferson Vascular Associates 1
Ralph Anthony Carabasi, 1
- Triester Schwartz Breecker, MD Associates 6
Steven William Breecker, 7 • Marc Lee Schwartz, 3 • Arthur N. Triester, 1

Solo Practitioners (not rated)

- Clement Chi-Chung Au 2
- Albert N. Brest 5
- William Fraimow 5
- Leonard E. Lecks 3
- Joseph F. Majdan 1
- K. Krishna Mohan 1
- Joel S. Raichlen 2
- Kenneth Carey Rosenberg 8
- Ira G. Rubinfeld 2
- Robert H. Schwab 3
- Irwin L. Stoloff 2
- Paul Walinsky 2

KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

Heart Attack Rates by County and Community, 1993

Previous Council reports have focused on hospital-specific data and to a limited degree physician-specific data. However, in examining a disease such as heart attack, there may be other factors, outside of the direct control of hospitals and physicians, contributing to the survival and mortality rates of patients. Community factors - residents' health status, geographic access to medical facilities, socioeconomic and other factors - have been demonstrated to contribute to who will suffer a heart attack, as well as the odds of surviving one.

The Health Care Cost Containment Council and the Pennsylvania Department of Health have joined forces to present a detailed picture of how heart attack affects the residents of Pennsylvania counties and communities. This is achieved by presenting the Council's hospitalization rate and inpatient hospital mortality data as well as the Health Department's heart attack mortality data.

In this section, the mortality and hospitalization rates are based on patients' county and community of residence, irrespective of where they were hospitalized. For example, if a resident of Allegheny County is hospitalized for a heart attack in Philadelphia, that patient will count towards Allegheny's hospitalization rate, *not* Philadelphia's rate.

IMPORTANT NOTE: The Pennsylvania Health Care Cost Containment Council data and the Pennsylvania Department of Health data are collected from different sources and are adjusted differently. Therefore, they should be considered separately and cannot be used together to make additional calculations.

What information does this section include?

COUNCIL DATA — For every 1,000 Pennsylvania residents, 2.8 persons were admitted to a Pennsylvania hospital for treatment of a heart attack in 1993, a total of 33,718 individuals. The Council estimates that this number accounts for about 85% of total heart attack occurrences statewide. In this section, each Pennsylvania county's rate is compared to the statewide rate and the percent difference between the county rate and the state rate is calculated. In other words, the data show whether a county is above or below the state rate and whether the difference is statistically significant. The same formula is applied to community-size areas, although only significant differences are shown. It is important to note that communities are defined by zip codes. They do not follow minor civil division lines precisely and may include zip codes from nearby communities or surrounding areas. A full listing of zip codes and corresponding communities is available from the Council upon request.

The same approach is applied to inpatient hospital mortality. By inpatient hospital mortality we mean patients who were admitted to a hospital for a heart attack and died while in the hospital. It does not include patients who died in the emergency room, a hospice, nursing home, outpatient facility or at home. The 1993 state rate for inpatient hospital mortality was .35 for every 1,000 residents. The county and community rates are compared to the state rate and a percent difference above or below the state rate is calculated. All counties are reported but only communities with a rate that is significantly different, statistically, from the state rate are listed.

Caution: In the graphs on the following pages, the figures refer to the percent above or below the state rate, not the percent of residents hospitalized for or dying of a heart attack. For example, if a county's hospital admission rate for heart attack is 47% above the state hospital admission rate (2.8 per 1,000), it does not mean that 47% percent of the county's residents were hospitalized for a heart attack or died from a heart attack.

These data are age and sex adjusted, according to the state rate, meaning that differences among geographic areas are not attributable to age or sex differences. The Council data include only Pennsylvania residents admitted to Pennsylvania hospitals.

PENNSYLVANIA DEPARTMENT OF HEALTH DATA — Using data provided by the Pennsylvania Department of Health, the Council is able to report the total number of heart attack deaths for residents of each county. These data are age-adjusted to the 1940 standard million U.S. population. They are not adjusted for sex. The state rate of total mortality due to heart attack is 0.55 deaths per 1,000 residents. These data include all Pennsylvania residents who died of a heart attack, even if they died outside of Pennsylvania. *It is important to note that caution should be exercised in examining the death rates of counties, especially rural counties, with small populations. The death rate in those counties may be based on a very small number, and the actual death rate could change significantly from year to year.*

Why is this information according to County/Communities important?

These data point out differences in the hospitalization and mortality rate of heart attack patients, according to where patients live. These variations provide a broader picture of the impact of heart attack than can be seen by examining only hospital and physician-specific rates. They can help to raise important questions about the differences among communities. By identifying differences in population-based hospital admission rates and in-hospital mortality rates, the possible reasons for those differences can be analyzed.

For example, suppose the residents of a given community have an inpatient hospital mortality rate that is significantly greater than the state rate. Is that due to the health status of the community, which may be related to socioeconomic or other factors? If so, can prevention and health education efforts be better targeted or increased in this area? Is the rate influenced by the effectiveness of the health care system in treating patients?

If heart attack patients are dying outside the inpatient hospital setting, is it due to the amount of time needed for transport to distant hospitals? If so, could the emergency medical system better address that need? Could medical facilities be better located?

If heart attack patients are dying before reaching the hospital, does it suggest that people are delaying action? If so, what steps can be taken to address this problem?

If hospitalization rates are high, is that due to the health status of the residents or other demographic issues? If the hospitalization rate is low, but the *overall* mortality rate for the area is high, are more patients, relatively speaking, dying before they reach the hospital?

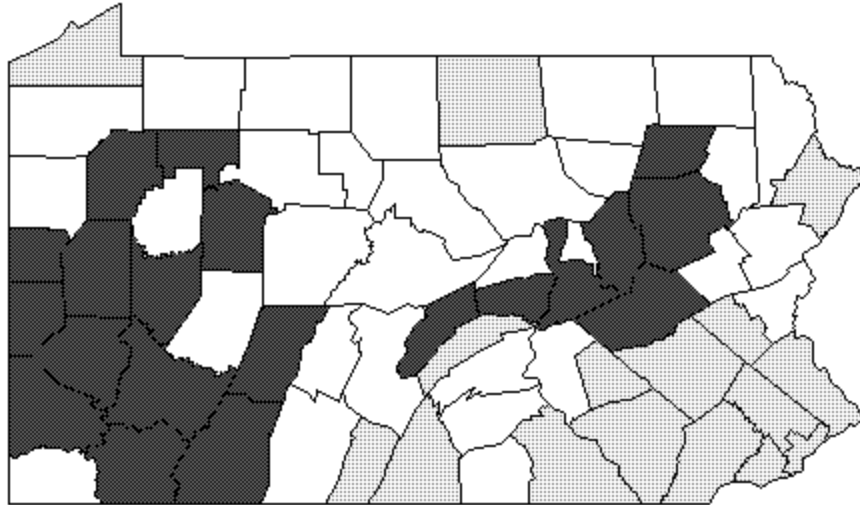
Why do these differences exist?

There are well-documented risk factors which may contribute to variation in admission and mortality rates. Diabetes, smoking and hypertension have been linked to higher incidence of heart attack and mortality rates following heart attack. Socioeconomic factors such as race, level of education, accessibility to medical care, insurance coverage, and income level may also impact hospital admission rates and survival rates.

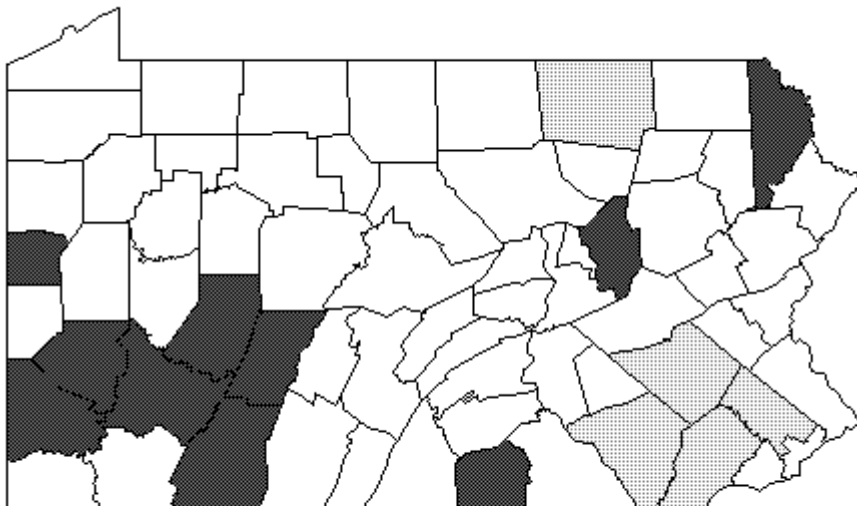
If you compare the data in this report's hospital section to the data in this section, you may find that communities or counties with a high rate of heart attack deaths or inpatient hospital heart attack deaths may not necessarily correspond to hospitals with significantly high rates of inpatient mortality. Other factors would need to be explored to understand any relationship between the two. For example, which hospitals did residents go to for treatment? How many residents died outside the inpatient hospital setting?

The usefulness of these type of data is to provide a broad descriptive picture of hospital utilization and mortality according to where people live. The information serves as a point of departure for more in-depth data collection, analysis and planning.

Heart Attack Hospital Admissions by County, Pennsylvania Residents, 1993 Compared to State Rate*

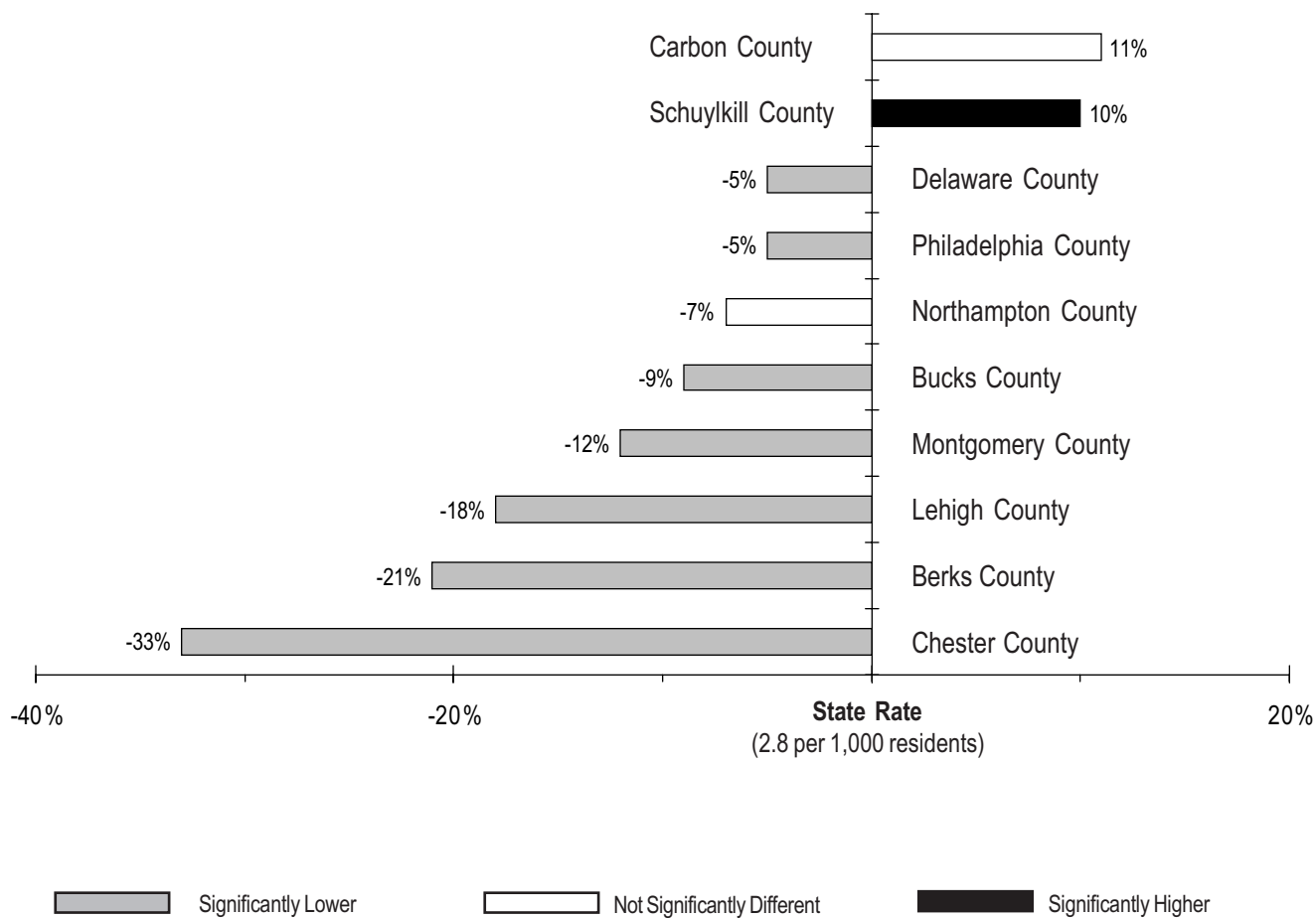


In-Hospital Heart Attack Deaths by County, Pennsylvania Residents, 1993 Compared to State Rate*



Significantly Lower Not Significantly Different Significantly Higher

Heart Attack Hospital Admissions by County, Pennsylvania Residents, 1993 Compared to State Rate*

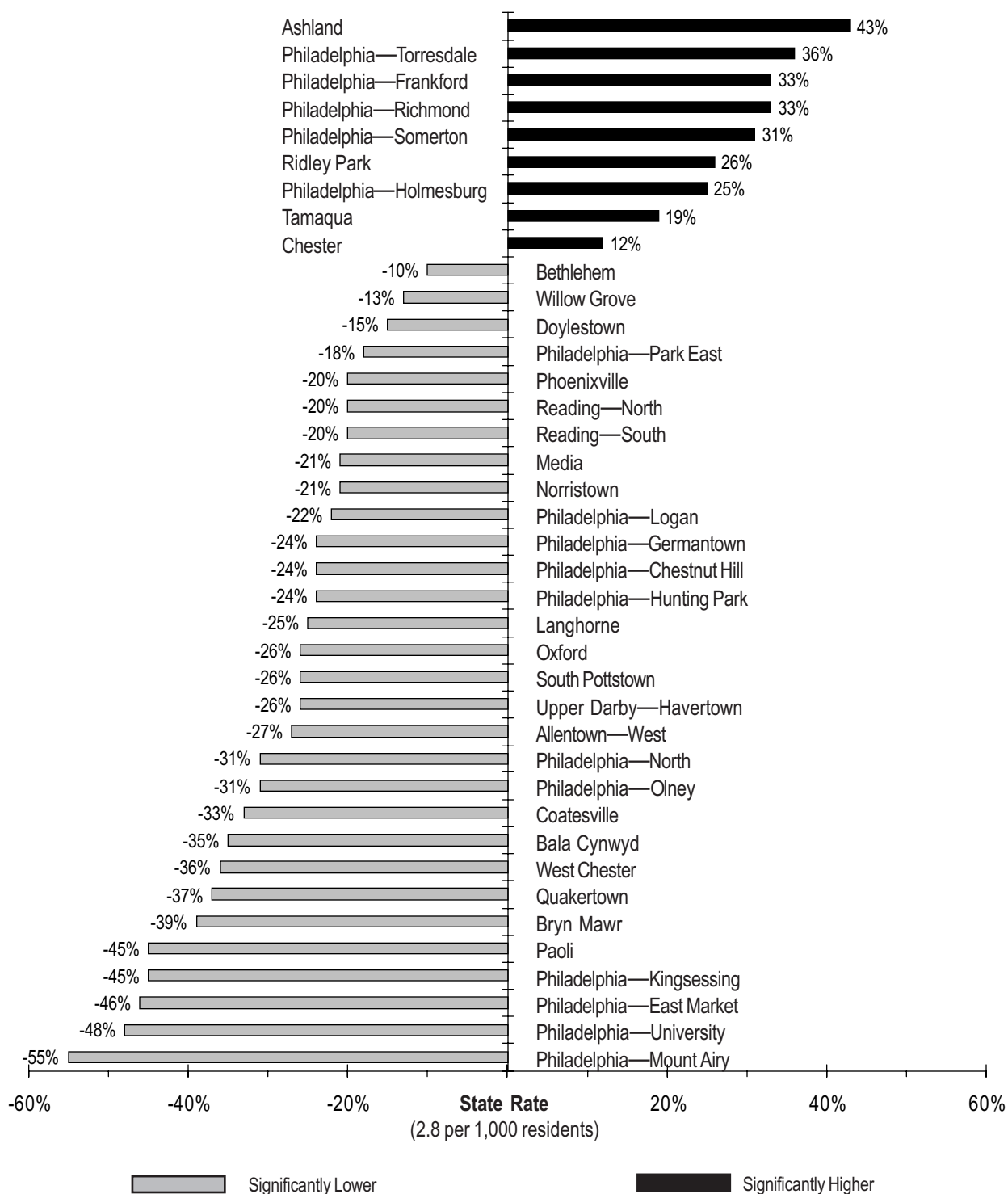


* The actual state rate of heart attack hospital admissions was 2.8 per 1,000 residents in 1993. In the graph above, the residents of Carbon County were hospitalized for a heart attack at 11% above the state rate. Chester County residents were hospitalized at 33% below the state rate. These data are adjusted for age and sex based on statewide figures.

IMPORTANT NOTE: The Pennsylvania Health Care Cost Containment data and the Pennsylvania Department of Health data are collected from different sources and are adjusted differently. Therefore, they should be considered separately and cannot be used together to make additional calculations.

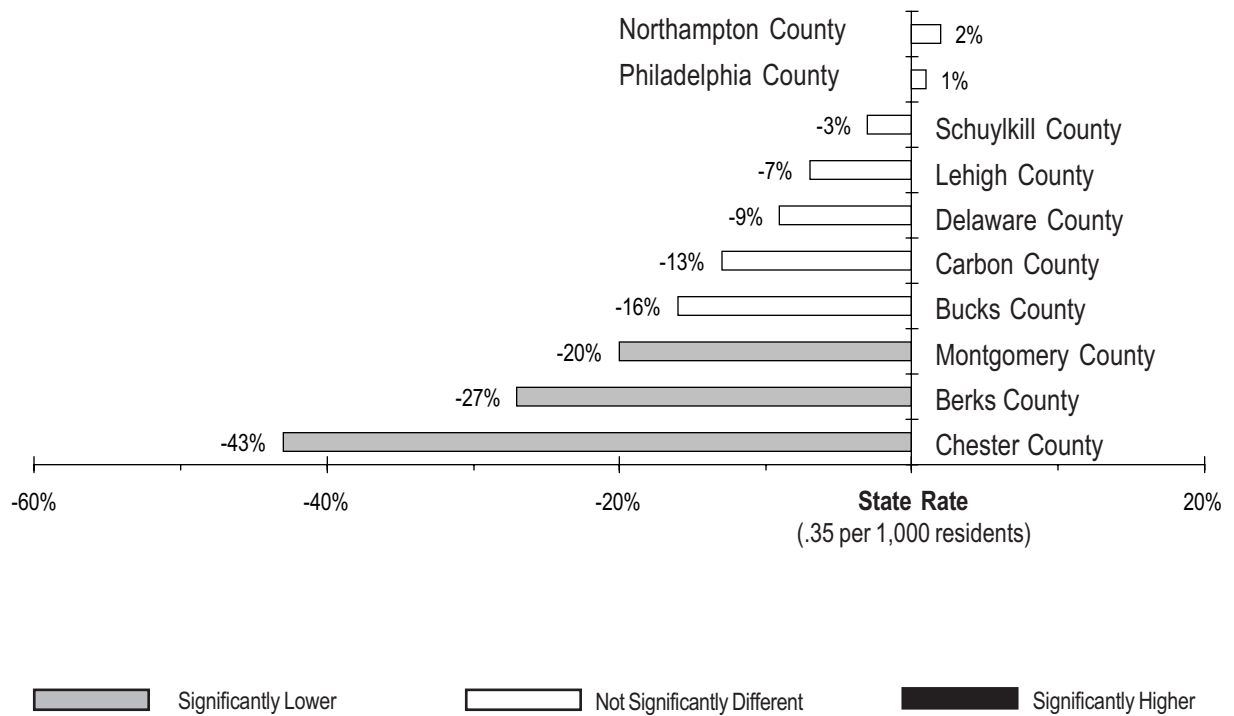
Heart Attack Hospital Admissions, Selected Communities, 1993

Significantly Higher or Lower Compared to State Rate*



* The actual state rate of heart attack hospital admissions was 2.8 per 1,000 residents in 1993. In the graph above, the residents of Ashland community were hospitalized for heart attacks at 44% above the state rate. Mount Airy Philadelphia community residents were hospitalized at 55% below the state rate. These data are adjusted for age and sex based on statewide figures. The above are community names, not hospital names.

In-Hospital Heart Attack Deaths by County, Pennsylvania Residents, 1993 Compared to State Rate*

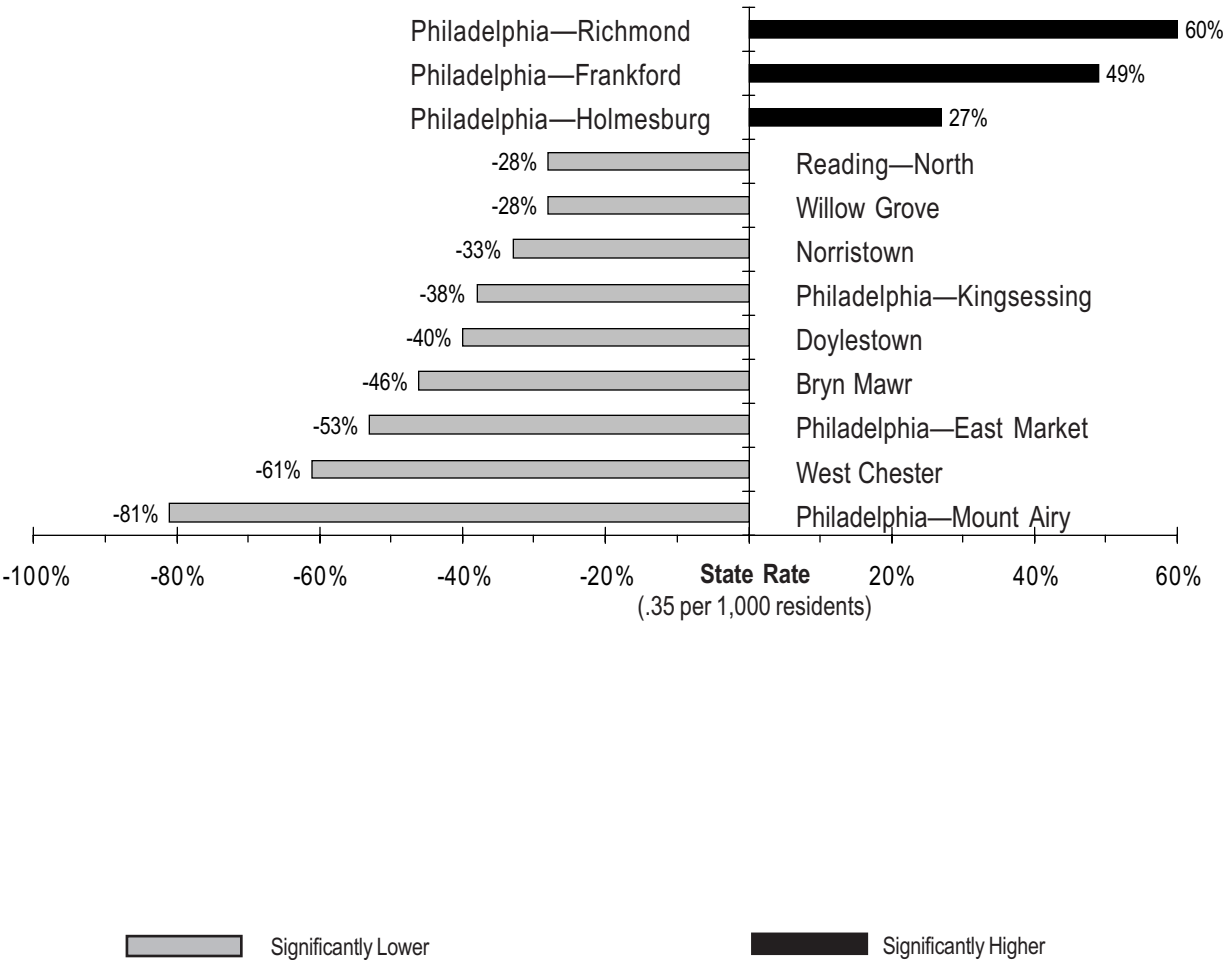


* The actual state rate of in-hospital heart attack deaths was .35 per 1,000 residents in 1993. In the graph above, the residents of Northampton County died while hospitalized for a heart attack at 2% above the state rate. Chester County residents died in the hospital at 43% below the state rate. These data are adjusted for age and sex based on statewide figures.

IMPORTANT NOTE: The Pennsylvania Health Care Cost Containment data and the Pennsylvania Department of Health data are collected from different sources and are adjusted differently. Therefore, they should be considered separately and cannot be used together to make additional calculations.

In-Hospital Heart Attack Deaths, Selected Communities, 1993

Significantly Higher or Lower Compared to State Rate*



* The actual state rate of in-hospital heart attack deaths was .35 per 1,000 residents in 1993. In the graph above, the residents of Richmond Philadelphia community died while hospitalized for a heart attack at 60% above the state rate. Mount Airy Philadelphia community residents died in the hospital at 81% below the state rate. These data are adjusted for age and sex based on statewide figures. The above are community names, not hospital names.

IMPORTANT NOTE: The Pennsylvania Health Care Cost Containment data and the Pennsylvania Department of Health data are collected from different sources and are adjusted differently. Therefore, they should be considered separately and cannot be used together to make additional calculations.

Heart Attack Deaths by County, Pennsylvania Residents, 1993*

County	Number	% Outside Inpatient Hospital Setting	Rate of Death per 1,000 Residents
All Counties—Statewide	14,524	60.8%	0.55
Carbon	102	66.3%	0.74
Berks	401	65.7%	0.50
Lehigh	355	65.3%	0.53
Chester	231	64.1%	0.34
Schuylkill	268	62.6%	0.66
Montgomery	649	60.7%	0.38
Philadelphia	1,875	60.2%	0.57
Northampton	276	58.1%	0.53
Delaware	596	56.2%	0.46
Bucks	406	53.4%	0.41

IMPORTANT NOTE: The Pennsylvania Health Care Cost Containment data and the Pennsylvania Department of Health data are collected from different sources and are adjusted differently. Therefore, they should be considered separately and cannot be used together to make additional calculations.

Source: Pennsylvania Department of Health

Information by Payor Categories, Heart Attack, 1993

Why is information by payor included in this report?

The health care industry is experiencing enormous change. Part of this movement involves a shift in traditional roles, especially as it relates to the management of health care. Payors are evolving from the traditional approach of financing the delivery of health care to one of influencing, on an increasing basis, the organization of the delivery system. While it is important to remember that patients are not treated by payors, it is increasingly the case that in today's market, payors, directly or indirectly, influence the delivery of care. This takes the form of quality improvement efforts, re-certification, utilization management, promulgation of physician practice guidelines, development of select physician and hospital networks, financial incentives - the increasing "management" of care.

In late 1995, the Pennsylvania Health Care Cost Containment Council, through a series of strategic planning sessions, identified as its primary future role the development of information about the impact and influence of managed care on health care cost and quality issues. As these newly emerging and evolving health systems work to achieve positive outcomes for those belonging to their health plans in the most cost-efficient manner, it is important to monitor and report on these issues. This section begins that process, one which will be continued and sharpened in future reports.

Cautions And Limitations

It's important to recognize that efforts to compare payor groups are still in their infancy. These data should be interpreted cautiously. This is just a starting point; useful as a basis for identifying differences among payors, asking why such differences exist, and as a basis for further study. Please keep in mind the following limitations:

1. This report includes data from only one year, a snapshot of what occurred during a limited period of time.
2. The data are from 1993. The marketplace, especially with the market penetration of managed care companies, has changed dramatically. The same categories examined today might show very different results.
3. In looking at the level of advanced cardiac services received by members of various payor groups, it is important that one *not* conclude from this report that patients had worse outcomes than expected as a result of receiving fewer advanced procedures. There are many possible reasons behind a lower or higher rate of services; a lower rate does not necessarily mean that patients received worse care, nor does a higher rate guarantee better care.
4. Marked differences in payor populations in terms of social, economic, and behavioral characteristics might put some groups at higher risk of mortality - risk not completely captured by the Council's risk-adjustment model.
5. Ninety-five percent of those enrolled in the Medicare program are above the age of 65. Older patients are generally at a much higher risk of death than younger patients. As a result, they are less likely to be good candidates for advanced cardiac services. It is therefore difficult to compare the mortality rates, lengths of stay and levels of services for Medicare patients to those in HMOs, Indemnity Insurance plans (Blue Cross and Commercial), Medicaid and Other plans.
6. While payors are exerting an increasing influence upon the delivery of care, it is hospitals and doctors who ultimately provide health care for patients.

What do we mean by payor?

This report includes aggregate information by region according to the following categories: Blue Cross, Commercial insurers, HMOs/PPOs, Medicaid, Medicare, and a category called Other. The subscribers to or participants in these programs are aggregated according to the region in which the hospital where they were admitted for a heart attack is located.

IMPORTANT NOTE: These data have been verified by the hospitals according to codes that indicate the following aggregate payor categories. The Council is reporting these data by payor category as they were submitted by the hospitals.

Definitions

BLUE CROSS — includes indemnity fee for service Blue Cross subscribers admitted to hospitals within this region for treatment of a heart attack. Due to inter-regional transfers, these data do not refer to a specific Blue Cross plan. This category was not intended to include participants in Blue Cross-related HMO plans.

COMMERCIAL — includes indemnity subscribers to commercial health plans (example, Aetna, Prudential, Cigna, etc.) admitted to hospitals within this region for treatment of a heart attack. Due to inter-regional transfers, these data do not refer to specific commercial health plans. This category was not intended to include participants in commercial insurer-related HMO plans.

HMO/PPO — includes participants in HMO/PPO plans, including Blue Cross-related and Commercial insurer HMO plans admitted to hospitals within this region for treatment of a heart attack. Due to inter-regional transfers, these data do not refer to specific HMO/PPO plans. This category was not intended to include Medicaid recipients. It does include some Medicare-eligible patients enrolled in licensed HMO/PPO plans.

MEDICAID — includes Medicaid recipients admitted to hospitals within this region for treatment of a heart attack. This category includes Medicaid fee-for-service and HMO members.

MEDICARE — includes Medicare recipients admitted to hospitals within this region for treatment of a heart attack. This category includes Medicare fee-for-service patients and some HMO-enrolled patients when the hospital identified Medicare as the primary payor.

OTHER — includes heart attack patients admitted to hospitals within this region for treatment who were covered under Workers' Compensation, government programs other than Medicare and Medicaid (for example, CHAMPUS), some self-insured employers and health and welfare funds, associations, or were self-paying patients and patients without insurance.

What is an HMO or a PPO?

An HMO provides its subscribers, through a network of selected physicians and hospitals, a basic and supplemental health insurance and treatment package in exchange for a prepaid premium. There are generally no deductibles, small co-payments, and no claims to file. Patient care is managed by a primary care physician, often called a “gatekeeper,” who is responsible for monitoring a patient’s care and deciding when specialized care or tests are needed. A PPO (Preferred Provider Organization) is similar to an HMO except that primary care gatekeepers are generally not utilized.

What is included in this section?

This report allows for comparison of heart attack hospital admission and risk-adjusted mortality rates, risk-adjusted average length of hospital stay, and average hospital charges, according to patients’ insurance coverage. The admission rates allow you to see the payor make-up of heart attack admissions to Pennsylvania hospitals. The risk-adjusted mortality rates and lengths of stay are calculated in the same way as the hospital rates. An expected rate is determined after taking into account significant patient risk factors. In the mortality graphs, these are expressed as percentage points. In the length of stay graphs, these are expressed in number of days. (As in the hospital section, patients who died or were transferred to another hospital were excluded from the length of stay analysis.) An actual to expected statistical rate is reported. Those payor groups whose participants had a significantly higher than expected mortality rate or a significantly greater than expected length of hospital stay are highlighted with an asterisk (*). Those whose patients had a significantly lower than expected mortality rate or length of stay are highlighted with a circle (o).

The information is reported by region for aggregated payor groups, and then broken down by acute care hospitals *without* advanced cardiac services and acute care hospitals *with* advanced cardiac services.

CHARGES

This report provides two ways to view the issue of hospital charges by payor group. It is important to note that charges are what hospitals bill for the cost of treatment, not what hospitals receive in payment from the payor. Physician fees are not included in these figures.

The charge per stay is a measure of resource consumption or intensity over the length of hospitalization after adjusting for the type of treatment or services provided to the patients. This is done through the case-mix index, by which the charges are adjusted according to DRG (Diagnostic Related Group).

The case-mix index is a measure of the relative “costliness” of patients treated. A case-mix index of 1 or greater indicates a greater proportion of patients in the higher cost DRGs.

The average charge per hospital day levels the playing field to a degree. Its value is that it gives a picture of the differences in intensity of resource consumption or services during an average hospital day, independent of length of stay.

LEVELS OF ADVANCED CARDIAC CARE SERVICES

Do heart attack patients across payor groups have different levels of utilization of advanced cardiac care services? This study will report data about the level or intensity of services so that appropriate questions can be raised. Further study can assist in the effort to find the right balance between utilization, efficiency and quality of patient outcomes.

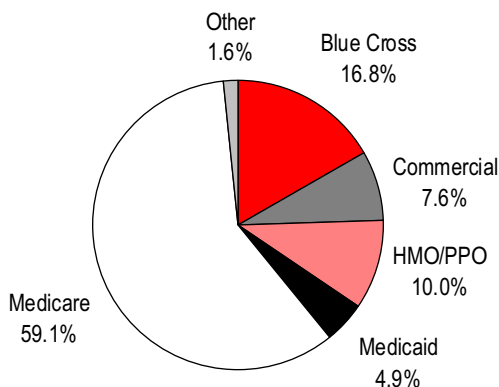
The data in the diagnostic and intervention table are based on episodes of care, not on separate hospital admissions. An episode represents the patient’s hospital stay from admission to discharge, including transfers to other hospitals for additional treatment. The figures reflect whether a patient received the listed services during this period. It does not include episodes with incomplete data about transfers to advanced cardiac care hospitals or patients who were discharged and then admitted at a later time for additional treatment.

One way to examine and compare the intensity or level of advanced cardiac services provided for patients in particular payor groups is through the case-mix index as previously described. If a payor group has a case-mix index of one or more, this indicates an intensity of advanced services such as open heart surgery. This measure applies only to the charge per stay figures, not the charge per day data.

A second way is to examine this issue is to directly compare the level of services such as cardiac catheterizations, balloon angioplasty, cardiac surgery, and medical treatment. This section of the study includes a table reporting the percent of each payor group’s heart attack population that received advanced cardiac care services. It is important to note that the numbers in this table are not adjusted for patient risk factors. Risk may have an impact on the level of advanced services patients receive. For example, some patients may not be good candidates for angioplasty or bypass surgery because of their particular clinical problems. These data are not adjusted for age, although most patients over 65 are reported in the Medicare category. The mean age of patients in the remaining payor groups is very similar.

These tables present two somewhat different pieces of information about treatment by payor. Once again, more services are not necessarily good, fewer services are not necessarily bad. The Council cautions the reader that these data do not suggest an ideal level of services; a study of medical charts would be necessary to evaluate the indications for the appropriate use of these procedures. This can only serve as a point of departure for additional research and discussion about this issue. Nonetheless, these data can lead to further dialogue between the purchaser, payor and provider communities about appropriate utilization of diagnostic services and cardiac interventions.

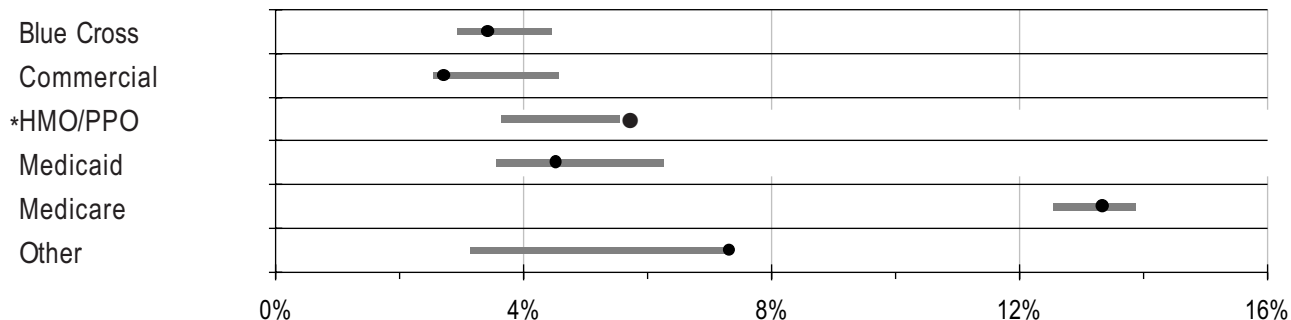
Hospitalizations by Payor, 1993
Heart Attack
Southeastern Pennsylvania



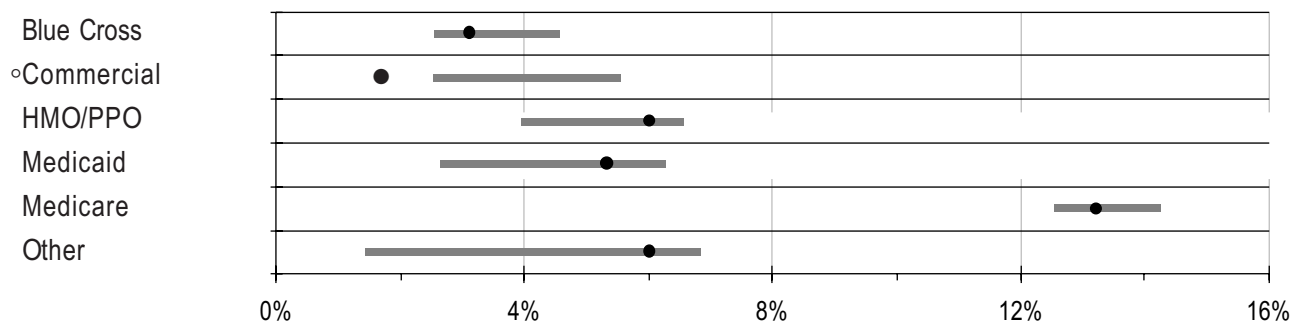
Actual to Expected In-Hospital Mortality, by Payor, 1993

Heart Attack

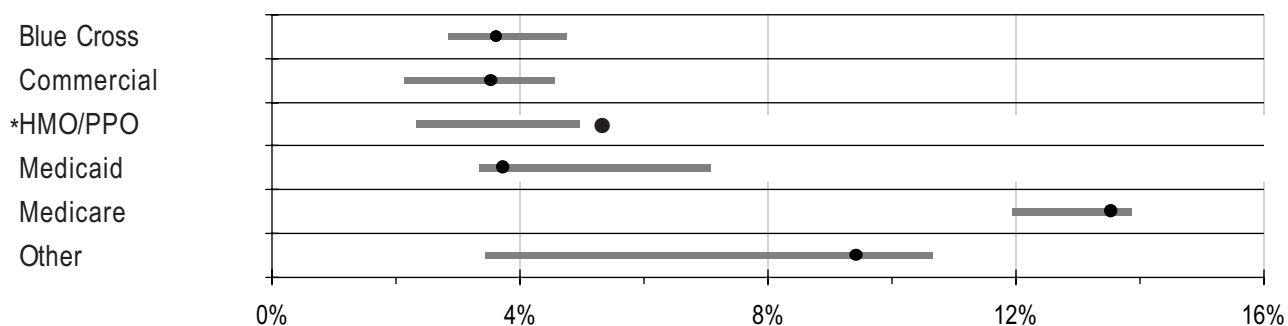
ALL SOUTHEASTERN HOSPITALS



ACUTE CARE HOSPITALS



ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES



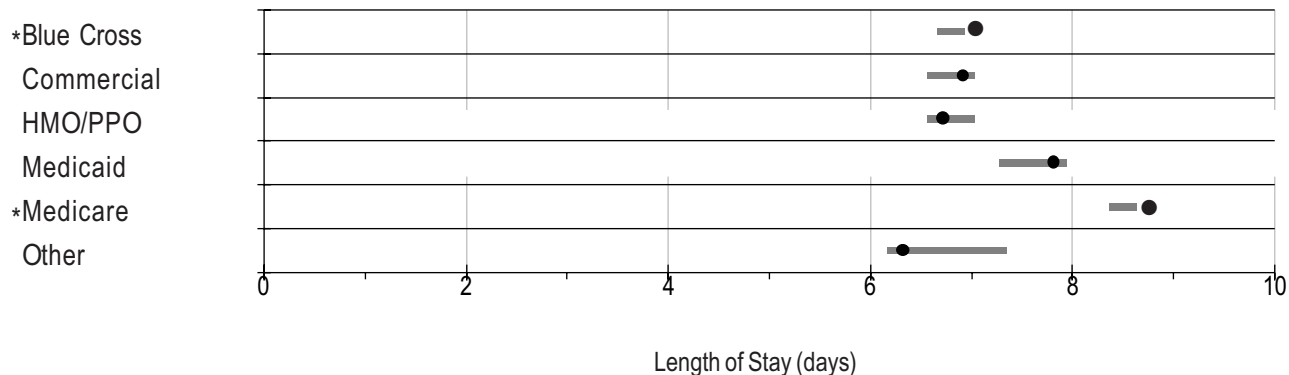
KEY

- Actual Mortality Rate, 1993
- Range of Expected Mortality
- * Actual Mortality significantly higher than Expected Range
- Actual Mortality significantly lower than Expected Range

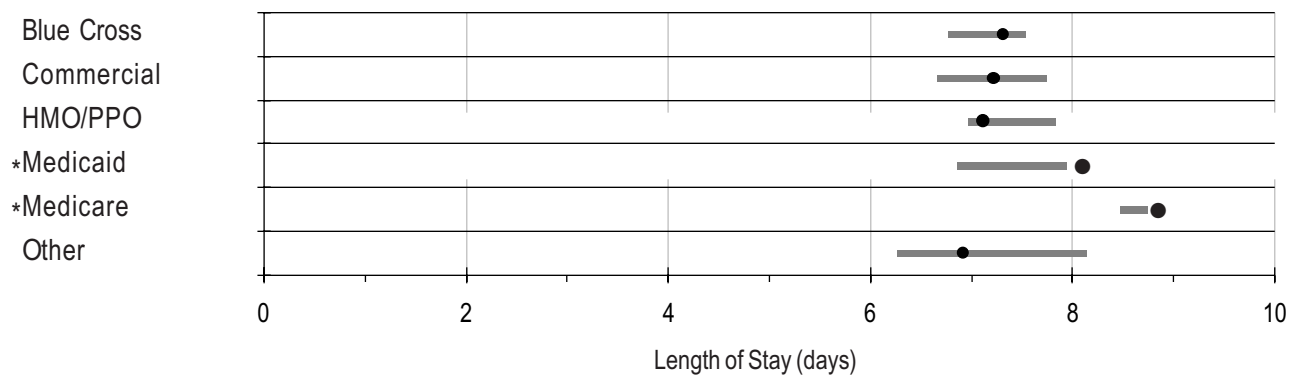
Actual to Expected In-Hospital Length of Stay, by Payor, 1993 [▽]

Heart Attack

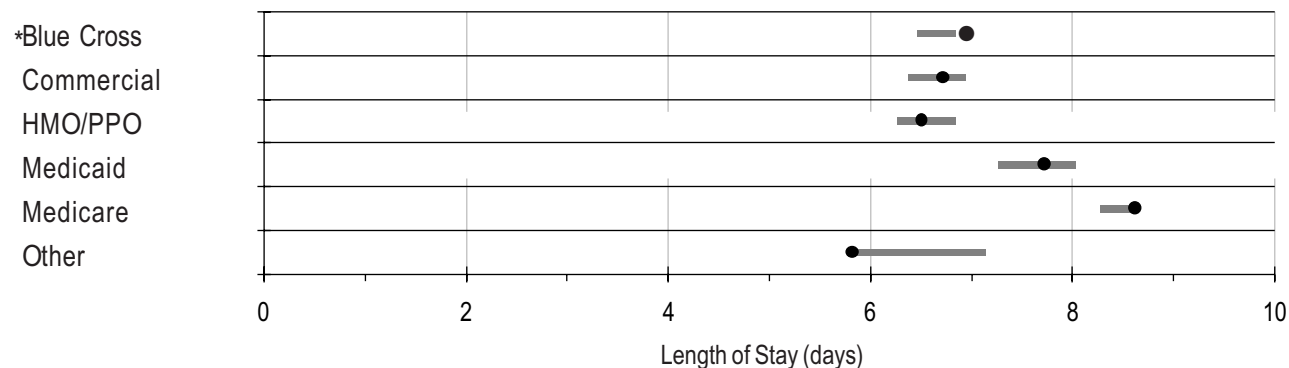
ALL SOUTHEASTERN HOSPITALS



ACUTE CARE HOSPITALS



ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES



[▽] Length of Stay is based on a geometric mean

KEY

- Actual Length of Stay, 1993
- Range of Expected Length of Stay
- * Actual Length of Stay significantly higher than Expected Range
- Actual Length of Stay significantly lower than Expected Range

Payor Information, 1993

Heart Attack

ALL SOUTHEASTERN HOSPITALS

Payor	# Cases	Mortality Rate %		Length of Stay	
		Actual	Expected Range	Actual	Expected Range
Blue Cross	2,265	3.4	3.0 — 4.4	*7.0	6.7 — 6.9
Commercial	1,021	2.7	2.6 — 4.5	6.9	6.6 — 7.0
HMO/PPO	1,355	*5.7	3.7 — 5.5	6.7	6.6 — 7.0
Medicaid	665	4.5	3.6 — 6.2	7.8	7.3 — 7.9
Medicare	7,972	13.3	12.6 — 13.8	*8.7	8.4 — 8.6
Other	218	7.3	3.2 — 7.3	6.3	6.2 — 7.3

ACUTE CARE HOSPITALS

Payor	# Cases	Mortality Rate %		Length of Stay	
		Actual	Expected Range	Actual	Expected Range
Blue Cross	1,106	3.1	2.6 — 4.5	7.3	6.8 — 7.5
Commercial	420	°1.7	2.6 — 5.5	7.2	6.7 — 7.7
HMO/PPO	803	6.0	4.0 — 6.5	7.1	7.0 — 7.8
Medicaid	338	5.3	2.7 — 6.2	*8.1	6.9 — 7.9
Medicare	4,753	13.2	12.6 — 14.2	*8.8	8.5 — 8.7
Other	133	6.0	1.5 — 6.8	6.9	6.3 — 8.1

ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES

Payor	# Cases	Mortality Rate %		Length of Stay	
		Actual	Expected Range	Actual	Expected Range
Blue Cross	1,159	3.6	2.9 — 4.7	*6.9	6.5 — 6.8
Commercial	601	3.5	2.2 — 4.5	6.7	6.4 — 6.9
HMO/PPO	552	*5.3	2.4 — 4.9	6.5	6.3 — 6.8
Medicaid	327	3.7	3.4 — 7.0	7.7	7.3 — 8.0
Medicare	3,219	13.5	12.0 — 13.8	8.6	8.3 — 8.6
Other	85	9.4	3.5 — 10.6	5.8	5.8 — 7.1

* Actual is significantly higher than the Expected Range

° Actual is significantly lower than the Expected Range

Average Hospital Charges, by Payor, 1993

Heart Attack

SOUTHEASTERN ACUTE CARE HOSPITALS

Payor	Charge per Day	Charge per Stay	Case-Mix Index
Blue Cross	\$ 2,750	\$15,797	.9655
Commercial	\$ 2,757	\$16,005	.9525
HMO/PPO	\$ 3,136	\$17,160	.9931
Medicaid	\$ 2,535	\$17,169	.9953
Medicare	\$ 2,329	\$16,676	1.0464
Other	\$ 3,028	\$17,156	1.0162

SOUTHEASTERN ACUTE CARE HOSPITALS WITH ADVANCED CARDIAC SERVICES

Payor	Charge per Day	Charge per Stay	Case-Mix Index
Blue Cross	\$ 4,107	\$33,567	1.0357
Commercial	\$ 4,204	\$32,551	1.0400
HMO/PPO	\$ 5,052	\$37,427	1.0598
Medicaid	\$ 4,065	\$37,899	1.0372
Medicare	\$ 3,528	\$35,188	1.0215
Other	\$ 5,464	\$41,169	.9372

Payor Information, Diagnostic and Interventions, 1993

Heart Attack

ALL SOUTHEASTERN HOSPITALS

Payor	# Episodes	Cardiac Catheterization	Balloon Angioplasty*	Cardiac Surgery*	Medical Treatment *
		Rate %	Rate %	Rate %	Rate %
Blue Cross	1,546	73.4	32.4	15.1	54.1
Commercial	717	79.2	33.1	16.7	52.2
HMO/PPO	919	60.8	23.2	14.7	63.0
Medicaid	522	56.3	19.5	10.5	70.5
Medicare	6,557	35.4	11.9	9.3	79.2
Other	165	53.9	20.0	9.7	70.3

* These figures total more than 100% because 75 patients had both balloon angioplasty and cardiac surgery.

Payor	Mean Age	General Acute Hospitals		Advanced Cardiac Hospitals		
		Direct Admits	Transferred Out/ Lived %	Total Admits	Direct Admits	Transferred In
		#		#	%	%
Blue Cross	56.5	1,015	56.7	1,103	48.1	51.9
Commercial	54.8	458	61.2	544	47.6	52.4
HMO/PPO	58.1	721	51.5	559	35.4	64.6
Medicaid	55.0	303	35.3	322	68.0	32.0
Medicare	75.9	4,568	29.3	3,168	62.8	37.2
Other	56.1	119	44.1	101	45.5	54.5

Council

The Pennsylvania Health Care Cost Containment Council was established as an independent state agency by the Pennsylvania General Assembly in 1986. The Council is mandated to collect, analyze, and publish information about the comparative cost and quality of treatments in Pennsylvania hospitals in order to stimulate a competitive health care marketplace.

Summary Reports for Southeastern Pennsylvania and Central/Northeastern Pennsylvania, as well as the *Technical Report and Research Methods and Findings* are also available. In addition, the Council has published *A Consumer Guide to Coronary Artery Bypass Graft Surgery*.

HOW TO OBTAIN THESE REPORTS

Copies of these reports can be obtained by contacting:

Pennsylvania Health Care Cost Containment Council
225 Market Street, Suite 400
Harrisburg, PA 17101
Phone (717) 232-6787
Fax (717) 232-3821

Other Sources of Information

Pennsylvania Health Care Cost Containment Council
225 Market Street, Suite 400
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