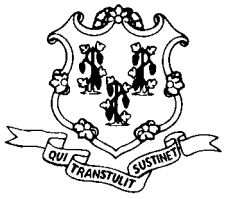
Hospital Performance Comparisons, 2004

A REPORT ON QUALITY OF CARE IN CONNECTICUT HOSPITALS

Joan Foland, M.Phil, M.H.S.

Lloyd Mueller, Ph.D.



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Health Care Quality, Statistics, Analysis, and Reporting Unit

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**A REPORT ON QUALITY OF CARE
IN CONNECTICUT HOSPITALS**

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Executive Summary

Increasing attention is being focused on evaluating and improving health care quality at both the state and national levels. Efforts are being made to provide standardized, useful and valid information to the public about hospital quality of care and also to promote quality improvement efforts within hospitals. The incentives are clear-- high quality care leads to fewer repeat hospitalizations, medical procedures, and medical errors, thereby reducing costs. Results presented in this report constitute the first step in this ongoing process to evaluate and report on health care quality in Connecticut hospitals.

Connecticut's initiative began with the passage of legislation (Sections 19a-127 l-n of the Connecticut General Statutes) during the spring of 2002 that created a quality of care program within the Department of Public Health (DPH). Under that program, hospitals are required to collect and report quality of care information to the DPH in order to produce a public report that compares all licensed hospitals in the state. Connecticut has aligned its efforts with national quality initiatives aimed at collecting similar information.

Included in this report are comparisons among adult general acute-care hospitals in Connecticut about how often they provide the recommended care to patients who have been diagnosed with a heart attack, heart failure, or pneumonia, which are three common and costly medical conditions for which people go to the hospital. Hospital performance rates are provided for ten clinical measures that focus on treatments that are well established and generally accepted recommended care based on medical evidence.

Based upon 2004 hospitalization data, Connecticut's hospitals are doing better on average than those in the U.S. on all ten of the clinical measures, yet they still fall short of the goal of 100% on most of the measures. That is, performance gaps still exist between the care that could be given and the care that is being delivered.

Performance rates are improving, however. Between 2003 and 2004, Connecticut hospitals' performances rates improved significantly for eight of the ten measures.

Connecticut's Performance Compared to the U.S. Performance, 2004

Condition	Measure	Average Connecticut Rate	Average National Rate*
Heart Attack	Aspirin at Arrival	96%	91%
	Aspirin at Discharge	97%	86%
	ACEI for LVSD at Discharge	83%	75%
	Beta-Blocker at Discharge	95%	85%
	Beta-Blocker at Arrival	94%	84%
Heart Failure	LVF Assessment	93%	78%
	ACEI for LVSD at Discharge	79%	74%
Pneumonia	Oxygenation Assessment	100%	98%
	Pneumococcal Vaccination	58%	46%
	Timely Antibiotic	75%	73%

* Source: www.hospitalcompare.hhs.gov for hospitals participating in the Hospital Quality Alliance initiative. Data are based upon patients hospitalized from 1/1/04 – 12/31/04.

Connecticut's Performance from 2003 to 2004

Condition	Measure	2003 Q3-Q4	2004 Q1-Q4
Heart Attack	Aspirin at Arrival	95%	96%
	Aspirin at Discharge	95%	97%*
	ACEI for LVSD at Discharge	76%	83%*
	Beta-Blocker at Discharge	92%	95%*
	Beta-Blocker at Arrival	92%	94%*
Heart Failure	LVF Assessment	90%	93%*
	ACEI for LVSD at Discharge	71%	79%*
Pneumonia	Oxygenation Assessment	100%	100%
	Pneumococcal Vaccination	43%	58%*
	Timely Antibiotic	68%	75%*

* Difference is significant at the 0.05 level.

Consumers should view this information as a starting point for educating themselves about hospital quality, for talking to their doctors about choosing a hospital for medical care, and for asking questions while receiving care in the hospital. This information should also be used by the medical community to heighten their awareness of the opportunity that exists to improve the care that they currently deliver.

Hospital Performance Comparisons:
A Report on Quality of Care in Connecticut Hospitals

INTRODUCTION

Increasing attention is being focused on evaluating and improving health care quality at both the state and national levels. Efforts are being made to provide standardized, useful and valid information to the public about hospital quality of care and also to promote quality improvement efforts within hospitals. The incentives are clear-- high quality care leads to fewer repeat hospitalizations, medical procedures, and medical errors, thereby reducing costs. Results presented in this report constitute the first step in this ongoing process to evaluate and report on health care quality in Connecticut hospitals. Included in this report are comparisons among adult general acute-care hospitals in Connecticut about how often they provide the recommended care to patients who have been diagnosed with a heart attack, heart failure, or pneumonia, which are three common and costly medical conditions for which people go to the hospital. Consumers should view this information as a starting point for educating themselves about hospital quality, for talking to their doctors about choosing a hospital for medical care, and for asking questions while receiving care in the hospital. This information should also be used by the medical community to heighten their awareness of the opportunity that exists to improve the care that they currently deliver.

The hospital quality measures in this report come from information collected on patients who were discharged from Connecticut's hospitals during the time period January 1, 2004 through December 31, 2004.

BACKGROUND

What is the impetus to improve quality?

Three landmark reports issued by the Institute of Medicine (IOM), a congressionally chartered advisory group to the federal government, have brought much attention to the problems regarding the quality and safety of health care. The first report, *To Err is Human: Building a Safer Health System*[1] revealed the extent to which medical errors cause harm to patients in hospitals, and it set forth a national agenda for improving patient safety. The second report, *Crossing the Quality Chasm: A New Health System for the 21st Century*[2] found that problems in the health care delivery system are the source of many errors and recommended that the Department of Health and Human Services identify a few areas for focused quality measurement and improvement. The latest report, *Leadership by Example: Coordinating Government*

Roles in Improving Health Care Quality[3] explored how the federal government can leverage its unique position as regulator, purchaser, provider, and research sponsor to improve care. In the report, the IOM proposed a national quality enhancement strategy focused on performance measurement of clinical quality and patient perceptions of care, as well as a proposed research agenda to support quality enhancement.

Federal and state governments, employers, and the medical community realize that action is needed to improve health care quality and patient safety. Pressure is coming from many directions to make information available to the public about the quality of hospital care. As a result, different types of quality information have been offered to the public by insurers, the business community, consumer organizations, and commercial enterprises that compile and sell "report cards." The potential thus exists for confusing the public with conflicting and possibly misleading information.

Efforts are being made at both the state and national level to align government efforts and to begin collecting standardized data from hospitals to provide comparable information across hospitals based on valid and reliable data.

Connecticut's Quality-in-Health-Care Initiative

During the spring of 2002, the Connecticut General Assembly passed a law creating a quality of care program within the Department of Public Health (DPH) (Sections 19a-127 l-n of the Connecticut General Statutes). The purpose of the program is to measure the quality of care provided by health care facilities in Connecticut. The intent of the legislation is twofold – to increase public accountability for the health care delivery systems of the State's hospitals and to foster improvement in the care provided by the hospitals. Hospitals are required to collect and report quality of care information to the DPH so that it can produce a public report that compares all licensed hospitals in the state on selected quality performance measures.

National Hospital Quality Alliance

A parallel quality initiative is occurring at the national level, and Connecticut has aligned its efforts to be consistent with the national initiative. The Hospital Quality Alliance (HQA) is a national public-private collaboration to encourage hospitals to voluntarily collect and report hospital quality performance information. This effort is intended to make important information about hospital performance accessible to the public and to inform and invigorate efforts to improve quality.

The HQA was initiated in December 2002 by the American Hospital Association, the Federation of American Hospitals and the Association of American Medical Colleges. The effort is also supported by the Centers for Medicare and Medicaid, the Joint Commission on Accreditation of Healthcare Organizations, the American Medical Association, the American Nurses Association, the National Association of Children's' Hospitals and Related Organizations, the Agency for Healthcare Research and Quality, the National Quality Forum, AARP, and the AFL-CIO.

Although participation by hospitals is voluntary, all 30 of Connecticut's adult general acute care hospitals are taking part in this national effort to build a permanent public resource on hospital performance. In fact, Connecticut was the first state in the nation to attain 100% participation by its hospitals.

HOSPITAL QUALITY OF CARE

What is meant by "quality" of hospital care?

Quality of hospital care can take on many meanings. It may mean that there was a successful outcome (e.g., a patient survived a heart attack or was cured of pneumonia) or it may mean that a patient was satisfied with their stay in the hospital and that they thought they were treated well. Quality care can also mean that a patient was given a needed medicine, treatment, or diagnostic test at the right time. The last definition is the one that is used in this report.

Hospitals vary in terms of their quality of care. Gaps exist between the care that could be delivered and the care that is delivered. One way to measure quality hospital care is to determine whether or not a patient got the medicine, test, or treatment that is known to be effective for his or her condition. Through extensive research, national guidelines have been established for the recommended care of patients with various medical conditions. Three common medical conditions that have been broadly studied are heart attacks, heart failure, and pneumonia. For each condition, there are a number of recommended actions, which a hospital ought to be providing to a patient.

Examples of quality care include:

- Prescribing a medication, such as aspirin, to a patient who should get it and who does not have an allergy or other medical condition making it dangerous for them to receive the medication.
- Providing an important medication or diagnostic test within the recommended time frame, for example within 24 hours of a patient having a heart attack.

What are hospital quality measures?

A hospital quality measure is an indicator that represents one aspect of the care that scientific evidence has shown to provide the best results to most people with an illness or condition. A hospital's measure of performance, also referred to as a performance rate, shows the percentage of patients who are given the right care at the right time for a specific medical condition. For example, if a hospital gives an aspirin to 80 out of 100 patients upon admission to a hospital after a heart attack, then the hospital performance rate for that particular measure is 80%.

However, standard treatment may not be the best treatment for everyone. There may be specific reasons why a patient should not get a certain treatment. For instance, a patient who is allergic to aspirin should not be given aspirin. This patient would not be counted in the measure.

This report focuses on ten hospital performance measures as follows:

Medical Condition	Performance Measure
Heart Attack	Giving an aspirin within 24 hours of arrival at a hospital if it is appropriate for the patient. Giving a drug called a beta-blocker within 24 hours of arrival at the hospital if it is appropriate for the patient. Giving a medication called an ACE inhibitor to reduce the workload of the heart, if the function of the heart has been impaired. Giving a prescription for aspirin when the patient leaves the hospital, if it is appropriate for the patient. Giving a prescription for a drug called a beta-blocker when the patient leaves the hospital if it is appropriate for the patient.
Heart Failure	Performing a diagnostic test to determine if the heart's function has been impaired, if the test has not been done previously. Giving a medication called an ACE inhibitor to reduce the workload of the heart if the function of the heart has been impaired.
Pneumonia	Giving the patient an antibiotic within 4 hours of arrival at the hospital. Performing a diagnostic test to determine if the patient is receiving enough oxygen. Screening a patient to determine if they had previously received a pneumonia vaccine, and providing the vaccine if it is appropriate for the patient.

How were the 10 hospital quality measures selected?

The ten measures included in this report focus on treatments that are considered basic recommended care for heart attack, heart failure, and pneumonia. These conditions were chosen because they represent serious medical conditions that are common reasons why patients go to hospitals. The measures for each of these conditions are considered to be a starter set for public reporting that have been extensively tested for validity and reliability and are considered best practices of care. They have been endorsed by the National Quality Forum, a national standards setting body, and have been adopted by the Centers for Medicare and Medicaid Services (CMS) as part of the Hospital Quality Alliance. In addition to these reasons, the Connecticut Department of Public Health decided to align their state reporting efforts with that of CMS in an effort to standardize the data collection process and to reduce hospitals' reporting burden.

How were the data collected and is the information accurate?

Data used to measure hospitals' performance are gathered from medical records at each hospital for patients who have been diagnosed with heart attack, heart failure, or pneumonia. Such data collection involves a combination of data obtained from existing hospital information systems and abstraction of medical records performed by trained individuals. It is the same data used by the Centers for Medicare and Medicaid and the Joint Commission on Accreditation of Healthcare Organizations in their review of hospital quality of care. Processes are in place to standardize the collection and reporting of hospital data to ensure that hospitals collect the data consistently. In addition, audits are performed to validate the accuracy of the data.

How can you use hospital quality information?

Looking at hospital quality information can be used to see how quality of care differs among hospitals. It can also be used to see how often hospitals provide the type of care considered to be recommend for several common medical conditions. It shows what treatments are usually given and how well hospitals give these treatments. This information can be used when talking to your doctor or other health care professional about the care you might need or are getting in a hospital. It can also be used when thinking about what hospital you or a family member would go to if you needed to be hospitalized.

Although this report provides information about the quality of care provided for heart attack, heart failure, and pneumonia patients, it does not include information about care provided by hospitals for other medical conditions. The care provided for the three specified conditions may or may not be reflective of the care provided for other medical conditions.

What can you do to help with your medical care?

It is important that consumers get more involved in their health care. You should contact your personal physician, if you have questions about recommended care or any exceptions that may apply to you. In addition to learning about the type of care and treatment that you might expect to receive if you need to go to a hospital, you might also consider other factors when choosing a hospital such as:

- Travel time to a hospital for you and your family
- Insurance coverage
- Cost
- Whether your family doctor is associated with a particular hospital
- Satisfaction with hospital stays experienced by others

Using this report together with other factors can help you make an informed decision about your medical care.

HOSPITAL PERFORMANCE COMPARISONS

What performance rates are presented?

For each of the 10 measures, hospital performance rates are displayed for all of the non-federal adult acute-care hospitals in Connecticut.

In order to provide valid comparisons, only those patients who were eligible for the recommended treatments are counted. Patients who do not meet the criteria for inclusion as described in the appendix are excluded from the analysis. As long as a hospital provides and documents that it provided the recommended care to the identified eligible patients, then its performance rate should be 100%. Any performance rate less than 100% suggests that either an opportunity to provide the appropriate care was missed or it was not documented.

Data for this report were collected on patients who had been in the hospital during the calendar year from January 1, 2004 through December 31, 2004. During this period of time, some hospitals treated only a small number of patients for some of the measures. When a hospital treats such a small number of patients, its performance rate is considered to be too unreliable for public reporting. Therefore, rates are shown only for those hospitals that treated a minimum of 20 eligible patients for each measure. No inferences about hospital performance should be made when results are not presented. The actual number of cases eligible for inclusion for each hospital can be found in the appendix.

Although hospitals should strive to achieve performance rates approaching 100%, the graphs for each of the measures include an additional reference score, the statewide average rate, to be used when looking at a hospital's performance. The average performance rate for Connecticut indicates the number of times Connecticut's hospitals, as a group, provided the recommended treatment to eligible patients in the state.

Although not presented in the graphs, a second reference score is presented in Tables 4 - 6 in the appendix. It is the national average performance rate. It is based upon data reported to CMS by hospitals that are participating in the Hospital Quality Alliance. The national scores are based upon patients hospitalized from January 1, 2004 through December 31, 2004.

The performance rates displayed are estimates of a hospital's true performance. Uncertainty exists in any estimate and this should be taken into consideration when looking at the results. For each measure, small differences in the rates may not be a sign of significant differences in care. Hospitals whose performance

rates differ significantly from the statewide average are designated by black circles in the graphs. Higher values are better and lower values are worse. Hospitals whose performance does not differ significantly from the statewide average are designated by gray circle.

The following three sections display the hospital performance comparison results for the three medical conditions of heart attack, heart failure, and pneumonia.

QUALITY OF CARE RESULTS FOR HEART ATTACK PATIENTS

Why is this information important?

Heart disease is the leading cause of death in the United States and Connecticut. Heart attacks, also called acute myocardial infarctions (AMI), kill more than 1,600 Connecticut residents each year. Appropriate medical care following a heart attack can greatly increase a patient's chances for recovery. Appropriate medications in the weeks following a heart attack, together with rehabilitation and changes in lifestyle, can help to prevent another heart attack from occurring.

How is quality of care determined for heart attack patients?

Research studies show that there are several steps in treating a heart attack that can make a significant difference in a patient's recovery. This report identifies five types of recommended care following a heart attack and how often Connecticut hospitals implement these recommended treatments. The recommended types of care include:

- Giving aspirin within 24 hours of the patient's arrival at the hospital, if appropriate for the patient
- Giving a prescription for aspirin when the patient leaves the hospital, if appropriate for the patient
- Giving a medication, such as an ACE inhibitor, to reduce the pressure in the heart, if heart function has been impaired
- Giving a prescription for a beta-blocker when the patient leaves the hospital, if appropriate for the patient
- Giving a drug called a beta-blocker within 24 hours of the patient's arrival at the hospital, if appropriate for the patient

Connecticut hospital medical records for heart attack patients (January 1, 2004 through December 31, 2004) were examined to find out how often patients were given each of these recommended treatments (see Figures 1-5). Higher percentages are better.

Measure 1. Percentage of heart attack patients who are given aspirin within 24 hours of arrival at the hospital (Figure 1)

Why is this information important?

Chewing or swallowing an aspirin as soon as symptoms of a heart attack begin may help reduce the severity of the attack. Aspirin can help prevent blood clots from forming or help dissolve blood clots that have formed. Following a heart attack, continued use of aspirin may help reduce the risk of another heart attack. Aspirin can have side effects like stomach inflammation, bleeding, or allergic reactions. Talk to your doctor before using aspirin on a regular basis.

What can you do if your hospital does not do this?

If your hospital tells you that they believe you have had a heart attack (AMI) but you have not taken an aspirin at home or in the ambulance and have not been given an aspirin on arrival to the hospital, ask your doctor or nurse if this treatment would be appropriate for you.

Measure 2. Percentage of heart attack patients who are given an aspirin at discharge (Figure 2)

Why is this information important?

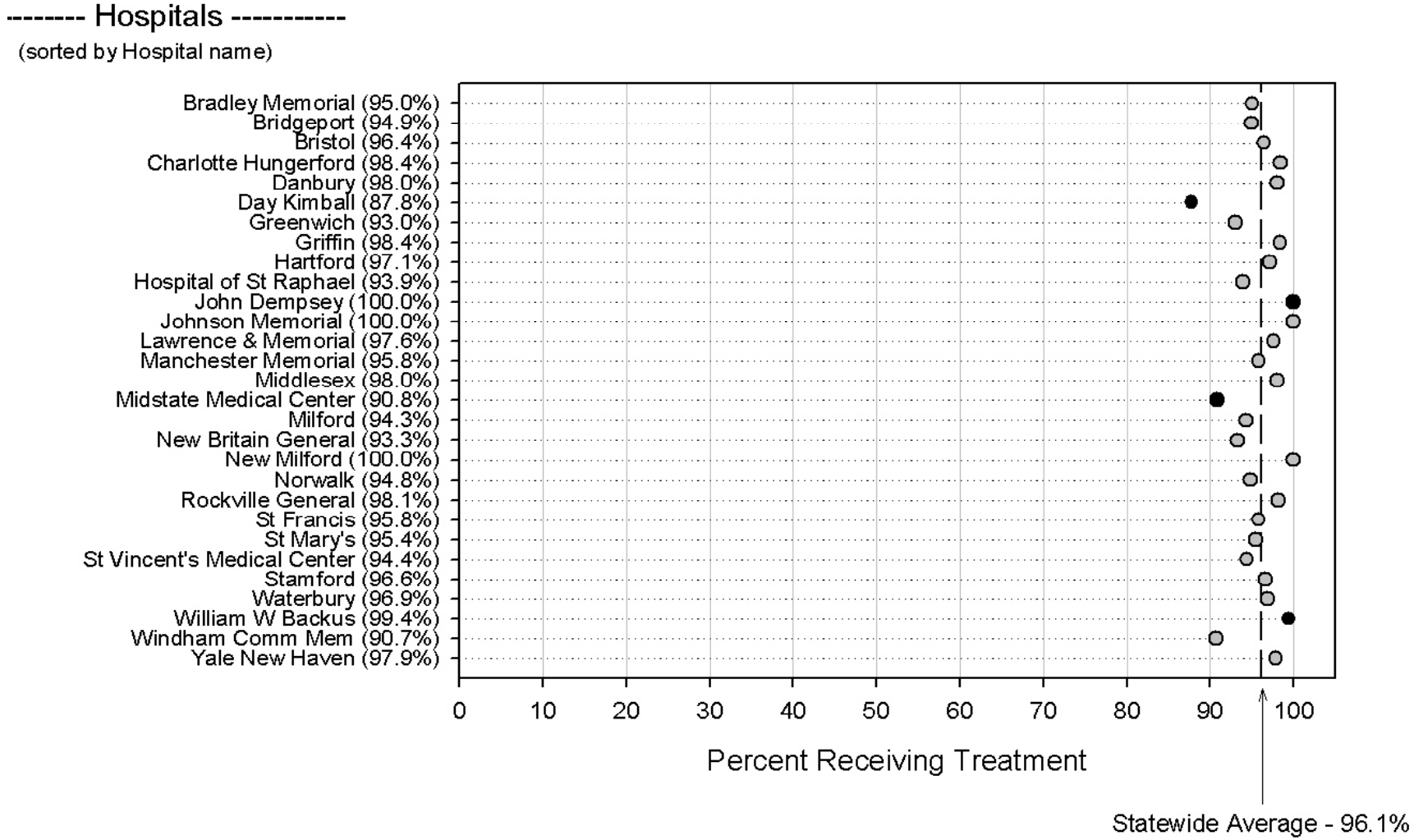
Aspirin can help prevent blood clots from forming or help dissolve blood clots that have formed. Following a heart attack, continued use of aspirin may help reduce the risk of another heart attack. Aspirin can have side effects like stomach inflammation, bleeding, or allergic reactions. Talk to your doctor before using aspirin on a regular basis.

What can you do if your hospital does not do this?

If you do not already take a daily dose of aspirin and your doctor does not prescribe one at the time of discharge, ask your doctor or nurse about taking a daily aspirin.

Figure – 1

Performance Rates* for Connecticut Hospitals
Heart Attack -- Giving an Aspirin Within 24 Hours of Hospital Arrival
January 1 - December 31, 2004



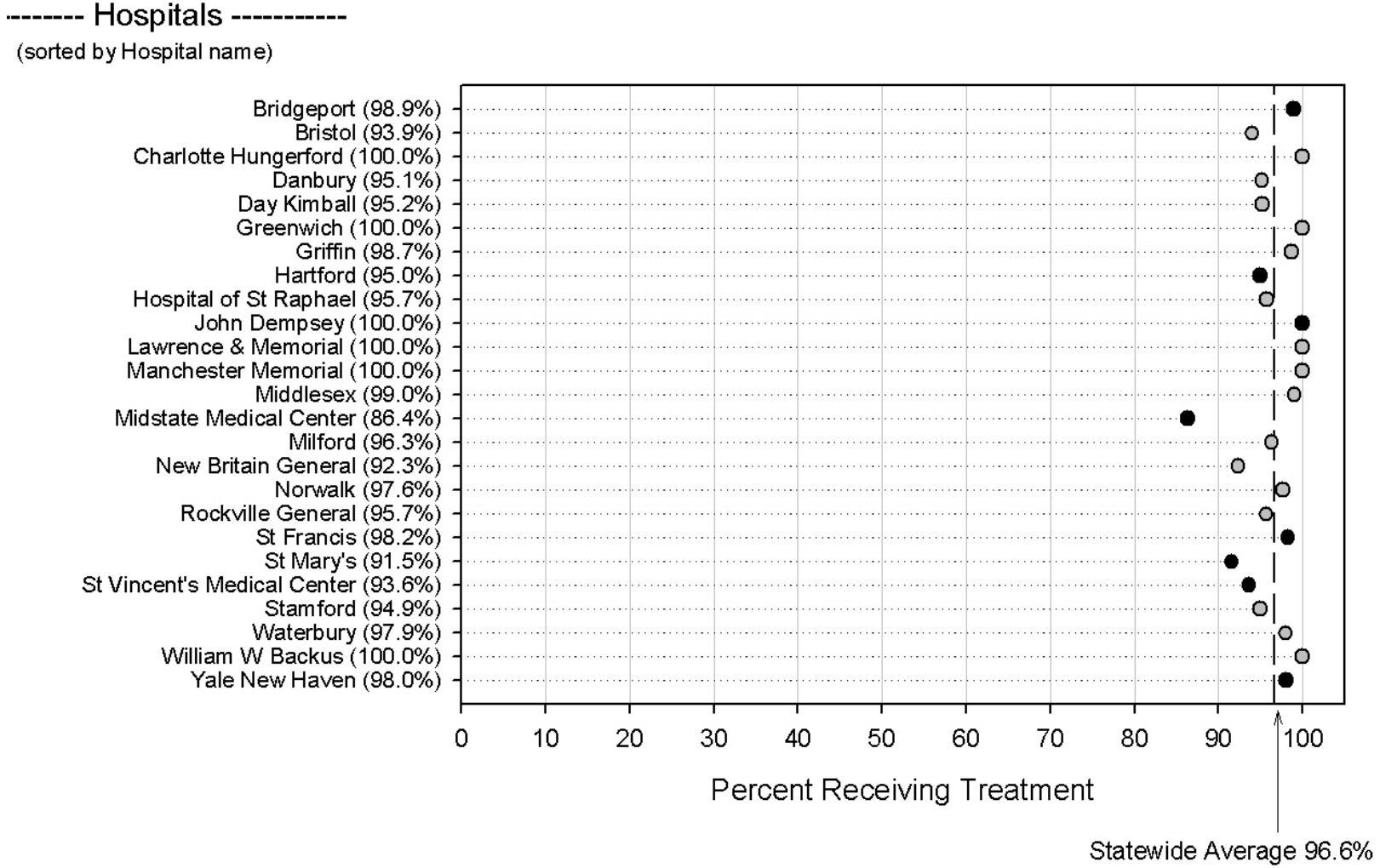
Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Figure – 2

Performance Rates* for Connecticut Hospitals
Heart Attack -- Prescribing Aspirin Upon Patient's Discharge
January 1- December 31, 2004



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Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Measure 3. Percentage of heart attack patients who are given an ACE inhibitor at discharge (Figure 3)

Why is this information important?

Angiotensin converting enzyme inhibitors, known as ACE inhibitors, are a type of medicine used to treat heart attacks, heart failure, or a decreased function of the left heart chamber (left ventricular systolic dysfunction). ACE inhibitors can help reduce the risk of death from a heart attack if taken within 24 hours of the first symptoms of a heart attack. Continued use may help prevent heart failure. ACE inhibitors work by stopping the production of a hormone (angiotensin II) that can narrow blood vessels. This helps reduce the pressure in the heart, lowering the patient's blood pressure.

What can you do if your hospital does not do this?

Not all patients can take ACE inhibitors due to allergies or other side effects, in which case physicians may prescribe angiotensin receptor blockers (ARBs). ARBs act on a more specific site to block the angiotensin II hormone. This decreases potential side effects for some patients thus making the ARB more tolerable. If you have not been given a prescription for an ACE inhibitor or an ARB upon discharge, you should ask your doctor or nurse if you should be prescribed one of the medications.

Measure 4. Percentage of heart attack patients who are given a beta blocker at discharge (Figure 4)

Why is this information important?

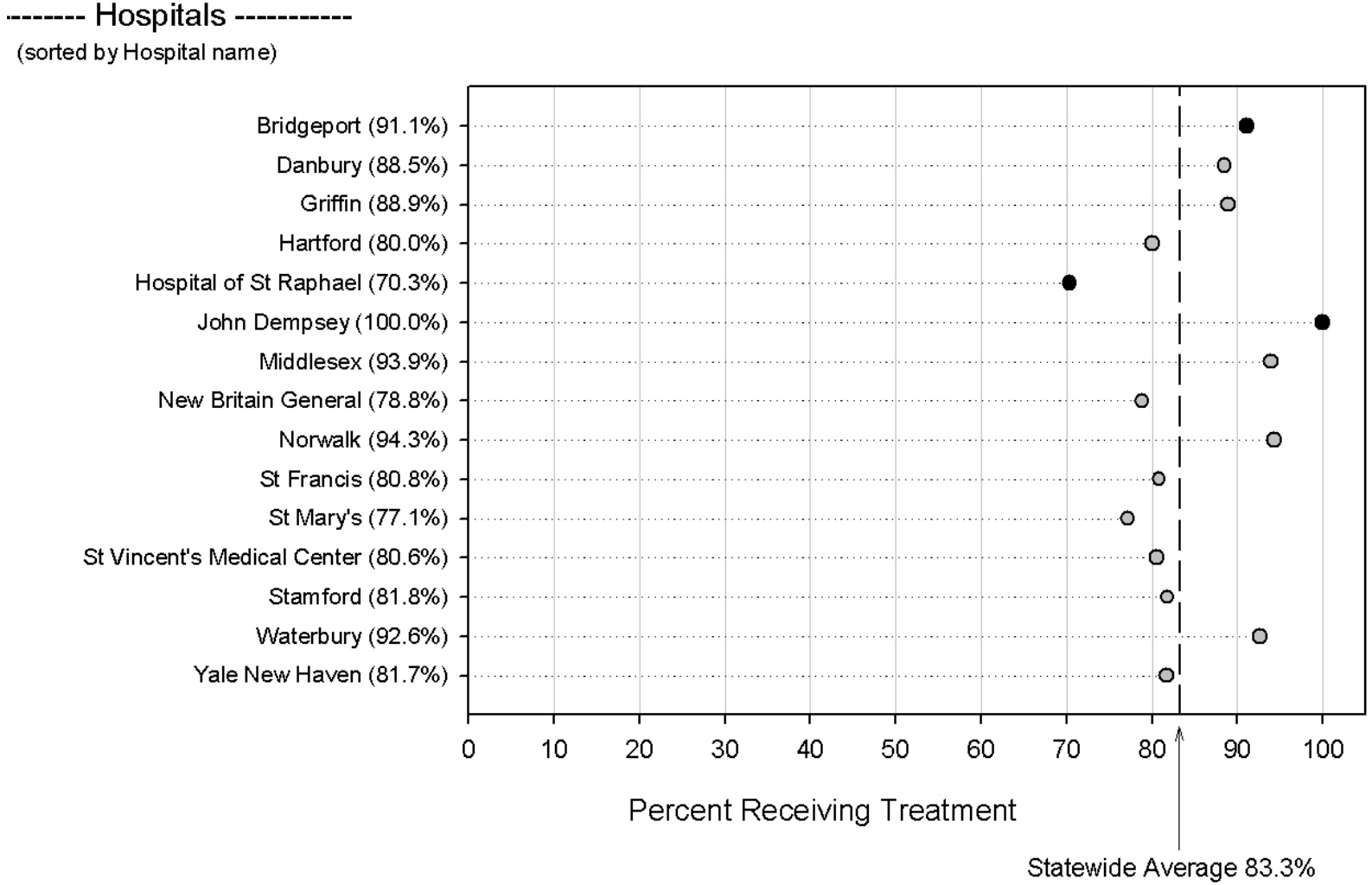
Beta blockers are a type of medicine that is used to lower blood pressure, treat chest pain (angina) and heart failure, and to help prevent a heart attack. Beta blockers relieve the stress on the heart by slowing the heart rate and reducing the force with which the heart muscles contract to pump blood. They also help keep blood vessels from constricting in the heart, brain, and body.

What can you do if your hospital does not do this?

Not everyone can take a beta blocker. If you are unsure if you can take a beta blocker and your doctor does not give you one at the time of discharge, ask your doctor whether or not it is appropriate for you.

Figure – 3

Performance Rates* for Connecticut Hospitals
Heart Attack -- Giving an ACE Inhibitor if Heart is Impaired
January 1- December 31, 2004



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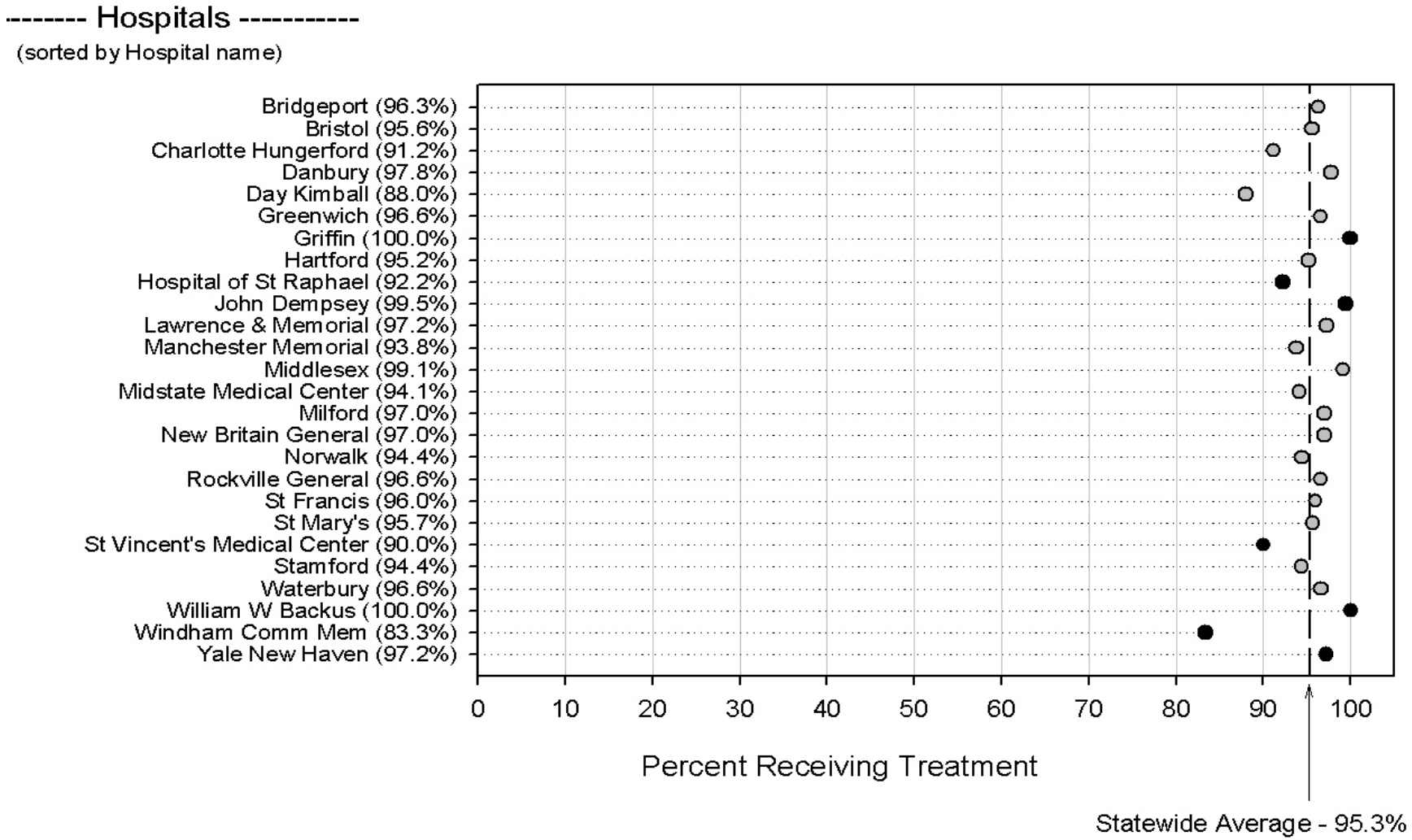
Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Figure – 4

Performance Rates* for Connecticut Hospitals
Heart Attack -- Prescribing a Beta-Blocker Upon Patient's Discharge
January 1- December 31, 2004



Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Measure 5. Percentage of heart attack patients who are given a beta-blocker within 24 hours of arrival at the hospital (Figure 5)

Why is this information important?

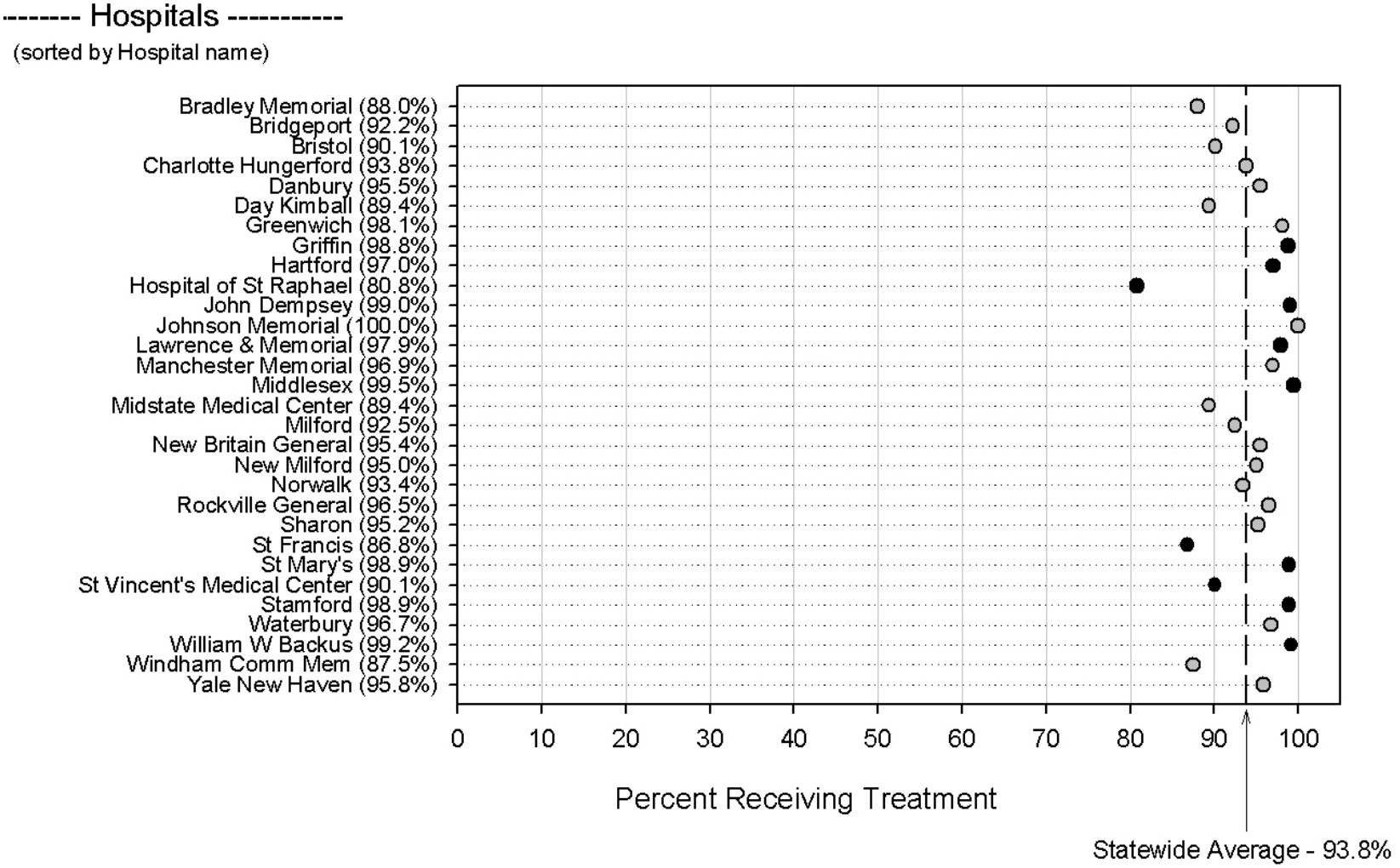
Beta blockers are a type of medicine that is used to lower blood pressure, treat chest pain (angina) and heart failure, and to help prevent a heart attack. Beta blockers relieve the stress on the heart by slowing the heart rate and reducing the force with which the heart muscles contract to pump blood. They also help keep blood vessels from constricting in the heart, brain, and body.

What can you do if your hospital does not do this?

Not everyone can take a beta blocker. However, if you have not received a beta blocker on arrival to the hospital, ask your doctor or nurse if you should receive a beta blocker.

Figure – 5

Performance Rates* for Connecticut Hospitals
Heart Attack -- Giving a Beta-Blocker Within 24 Hours of Hospital Arrival
January 1- December 31, 2004



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Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

QUALITY OF CARE RESULTS FOR HEART FAILURE PATIENTS

Why is this information important?

Heart failure, also called "congestive heart failure," kills more than 500 Connecticut residents each year. Congestive heart failure patients are frequently hospitalized and proper hospital care is important to improve their quality of life and to prevent additional hospitalizations. Heart failure can result from a heart attack, coronary artery disease, cardiomyopathy (heart muscle damage), or an overworked heart due to long-term conditions such as high blood pressure, diabetes, or a defect from birth. The recommended treatments for someone who is getting hospital care for heart failure include:

- Giving a diagnostic test, called a left ventricular function (LVF) assessment, to determine if heart function is impaired
- Giving a medication that reduces the workload of the heart such as an ACE inhibitor or an ARB

Connecticut hospital medical records were reviewed for heart failure patients (January 1, 2004 through December 31, 2004) to find out how often patients were given each of these recommended treatments (see Figures 6 and 7). Higher percentages are better.

Measure 1. Percentage of heart failure patients given a left ventricular function (LVF) assessment before, during, or after their hospitalization (Figure 6)

Why is this information important?

The proper treatment for heart failure depends on what area of the heart is affected. An important test to check how the left chamber of the heart is pumping is the left ventricular function (LVF) assessment. It can tell the doctor whether the left side of the patient's heart is pumping properly or not. Other evaluations include getting the patient's medical history, examining the patient, listening to the heart sounds, and other tests as ordered by a physician. These tests may include ECG (electrocardiogram), chest x-ray, blood work, and an echocardiogram.

What should you do if you don't receive a left ventricular function assessment?

Anyone admitted to the hospital for heart failure should be assessed for left ventricular function before or during admission, or scheduled for this assessment after discharge. If you have not received an LVF assessment, ask your doctor to schedule one.

Measure 2. Percentage of heart failure patients who are given an ACE inhibitor at discharge (Figure 7)

Why is this information important?

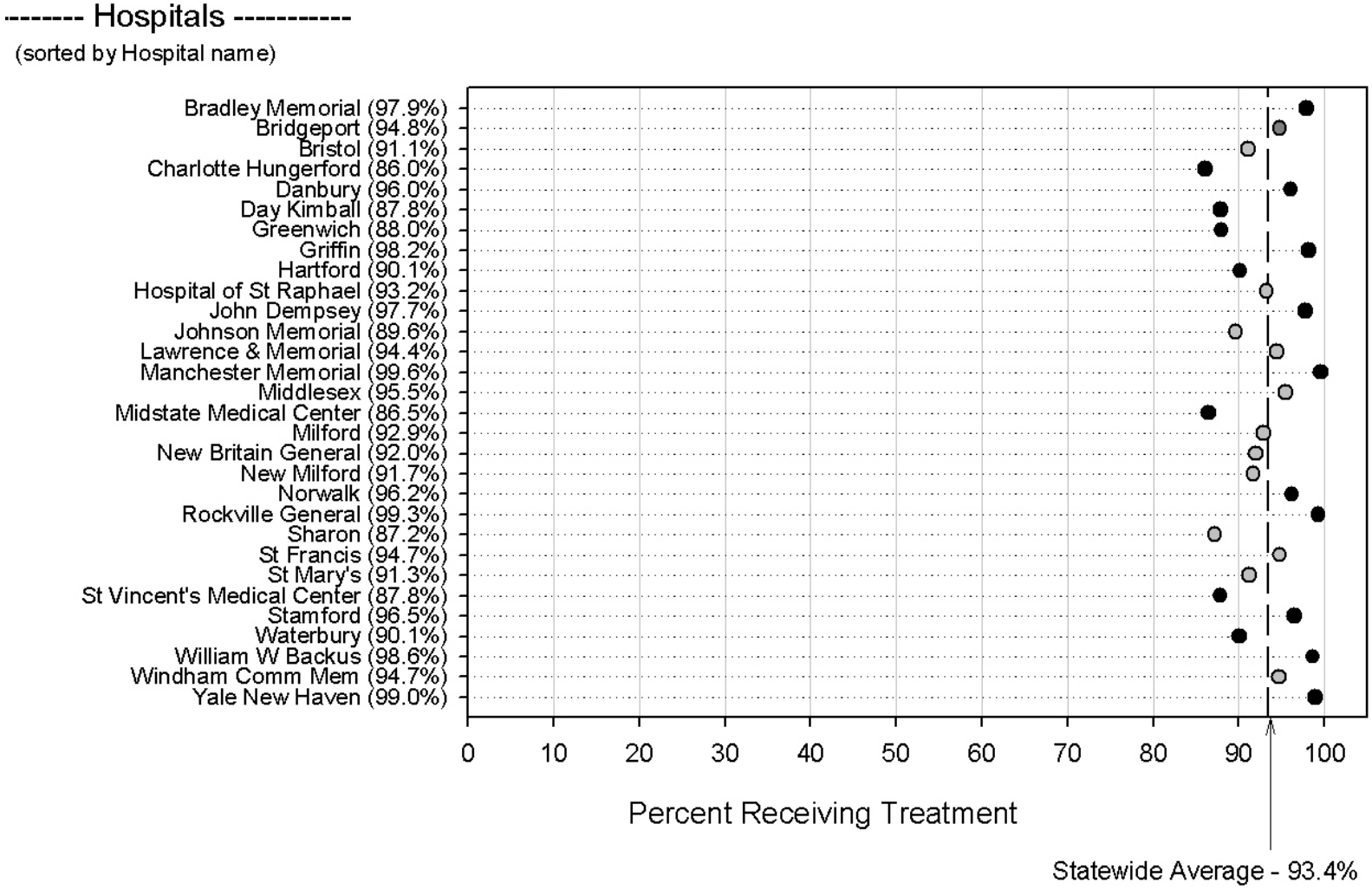
Angiotensin converting enzyme inhibitors, known as ACE inhibitors, are a type of medicine used to treat heart attacks, heart failure, or a decreased function of the left heart chamber (left ventricular systolic dysfunction). Continued use of an ACE inhibitor may help prevent heart failure. ACE inhibitors work by stopping the production of a hormone (angiotensin II) that can narrow blood vessels. This helps reduce the pressure in the heart, lowering the patient's blood pressure.

What can you do if your hospital does not do this?

Not all patients can take ACE inhibitors due to allergies or other side effects, in which case physicians may prescribe angiotensin receptor blockers (ARBs). ARBs act on a more specific site to block the angiotensin II hormone. This decreases potential side effects for some patients thus making the ARB more tolerable. If you have not been given a prescription for an ACE inhibitor or an ARB upon discharge, you should ask your doctor or nurse if you should be prescribed one of the medications.

Figure – 6

Performance Rates* for Connecticut Hospitals
Heart Failure -- Testing the Function of the Heart
January 1- December 31, 2004



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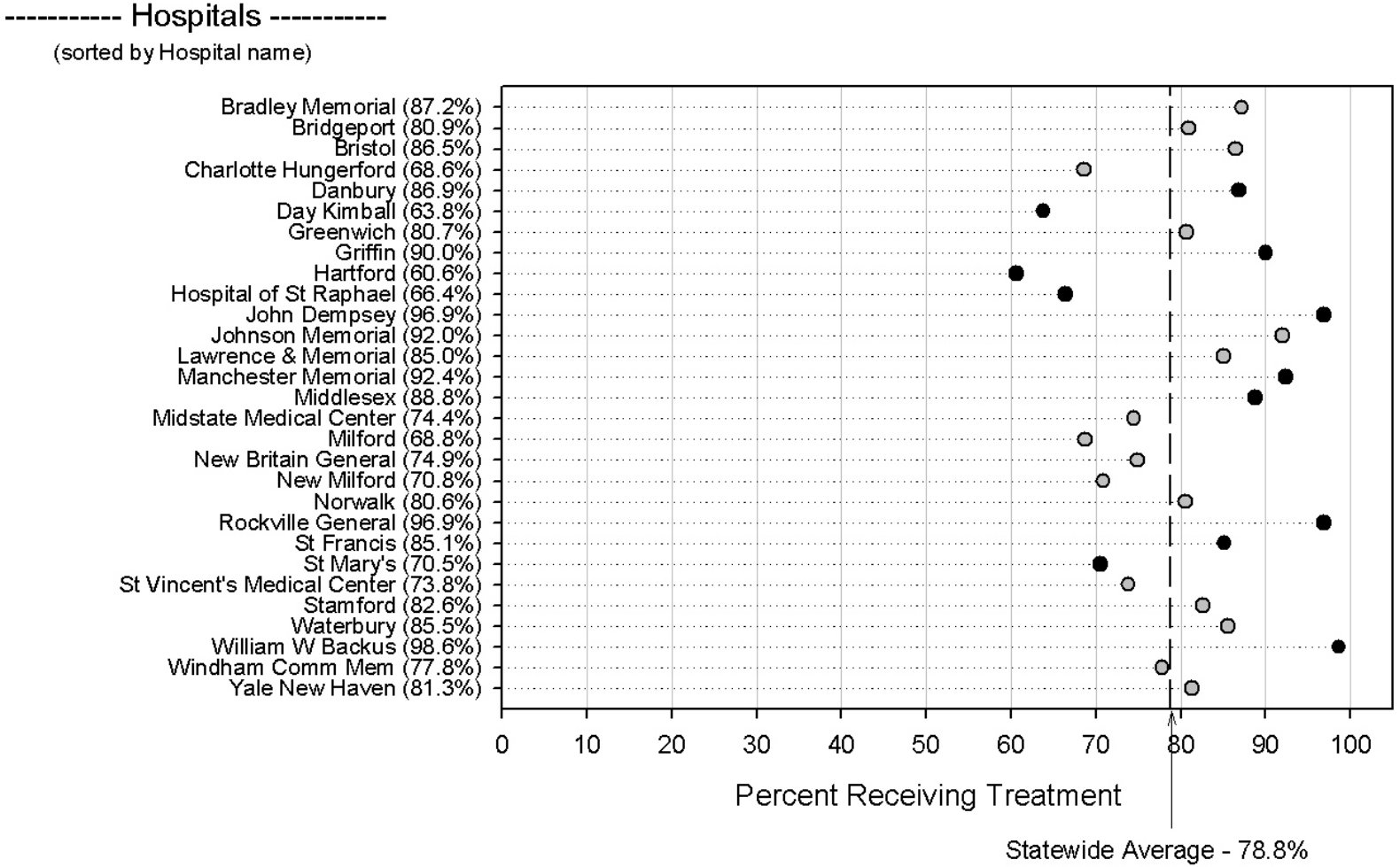
Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Figure - 7

Performance Rates* for Connecticut Hospitals
Heart Failure -- Giving an ACE Inhibitor if Heart is Impaired

January 1- December 31, 2004



Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

QUALITY OF CARE RESULTS FOR PNEUMONIA PATIENTS

Why is this information important?

Pneumonia kills more than 800 Connecticut residents each year. Patients who receive the appropriate care for pneumonia are less likely to be hospitalized again for the illness. The following quality information shows the care that is the recommended treatment for persons getting hospital care for pneumonia:

- A diagnostic test to determine whether the patient is receiving enough oxygen
- A screening test to determine whether the patient has received a pneumonia vaccine and, if not, providing the vaccine if appropriate
- Giving an antibiotic to the patient within four hours of arrival at the hospital

Connecticut hospital medical records for pneumonia patients (January 1, 2004 through December 31, 2004) were examined to find out how often patients were given each of these recommended treatments (see Figures 8-10). Higher percentages are better.

Measure 1. Percentage of patients with pneumonia who are given an oxygenation assessment within 24 hours of arrival at the hospital (Figure 8)

Why is this information important?

It is important to measure the amount of oxygen in your blood to see if you need oxygen therapy. Pneumonia can lower the oxygen in your blood because the air spaces in your lungs fill with fluid. The oxygen you breathe does not get into your bloodstream. The assessment may include an arterial blood gas (ABG) or pulse oximetry (electrodes attached to a part of your body like a finger, earlobe, or skin fold).

What can you do if your hospital does not do this?

If you do not have an assessment of your oxygen level through pulse oximetry or an ABG on arrival to the hospital, ask your doctor or nurse if you should have the test.

Measure 2. Percentage of patients with pneumonia who are screened for and/or given a pneumonia vaccination before discharge from the hospital (Figure 9)

Why is this information important?

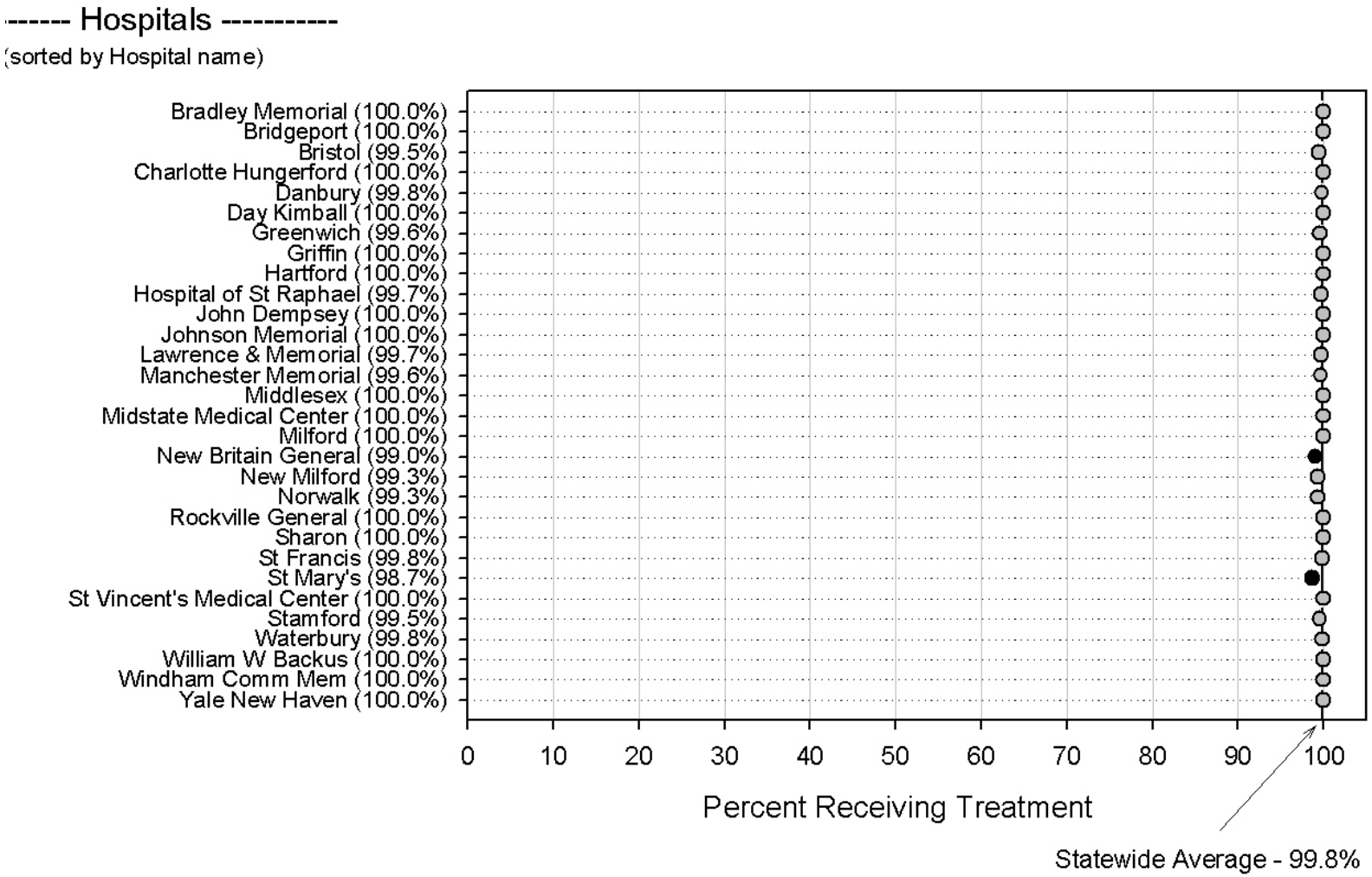
The pneumococcal vaccine may help prevent, or lower the risk of complications of pneumonia caused by bacteria. It may also help prevent future infections.

What can you do if your hospital does not do this?

Patients who have previously received a pneumonia vaccination may not need to be vaccinated again. You should keep a record of your vaccinations that can be shown to hospital staff at the time of admission. If, during your hospital stay, you do not have a fever and have not received a pneumonia vaccination, ask your doctor or nurse about vaccination.

Figure – 8

Performance Rates* for Connecticut Hospitals
Pneumonia -- Measuring the Oxygen Levels in the Blood
January 1- December 31, 2004



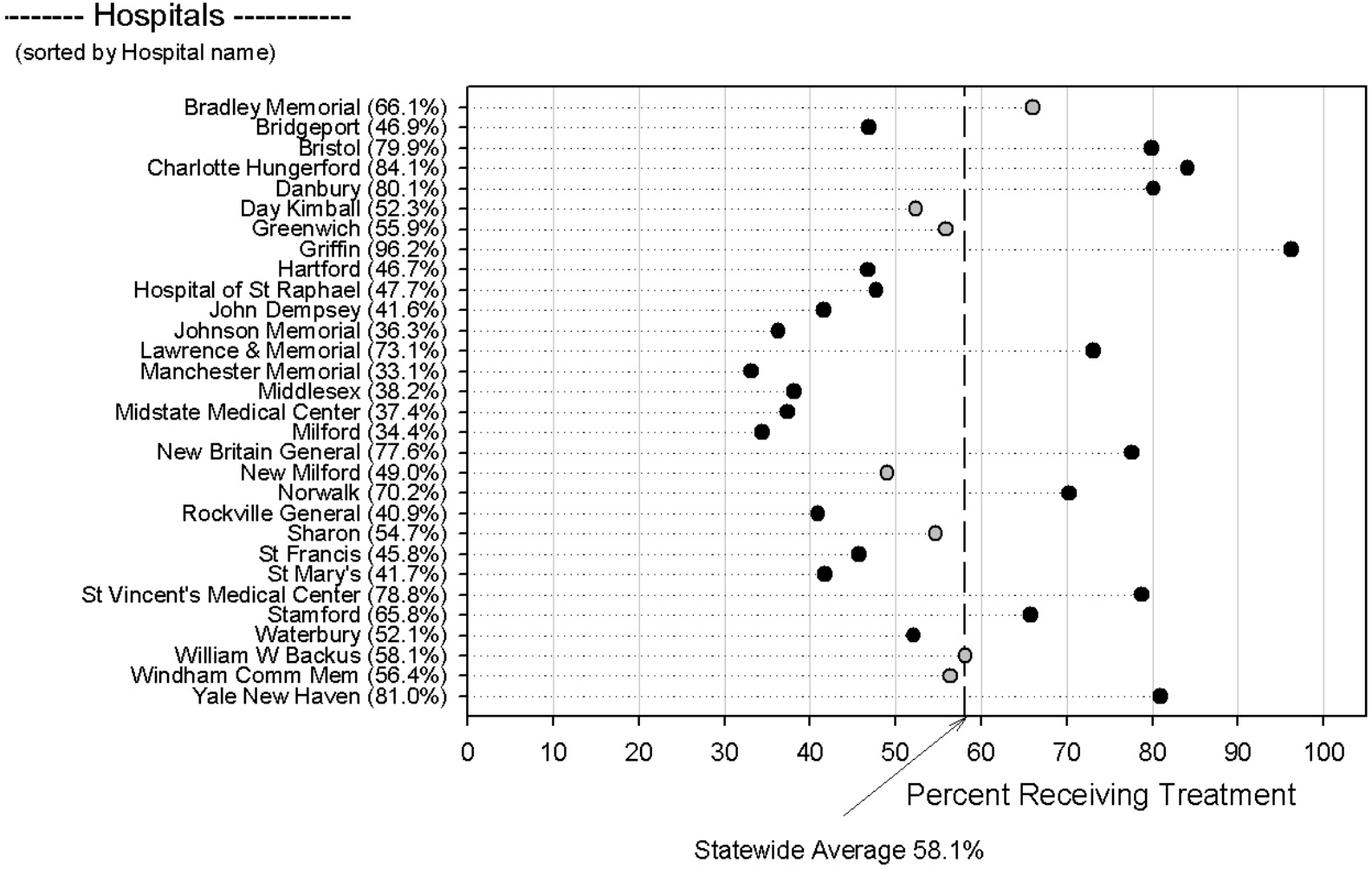
Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Figure – 9

Performance Rates* for Connecticut Hospitals
Pneumonia -- Screening and/or Providing Pneumonia Vaccine
January 1- December 31, 2004



Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

Measure 3. Percentage of patients with pneumonia who got antibiotics within 4 hours of arrival to the hospital (Figure 10)

Why is this information important?

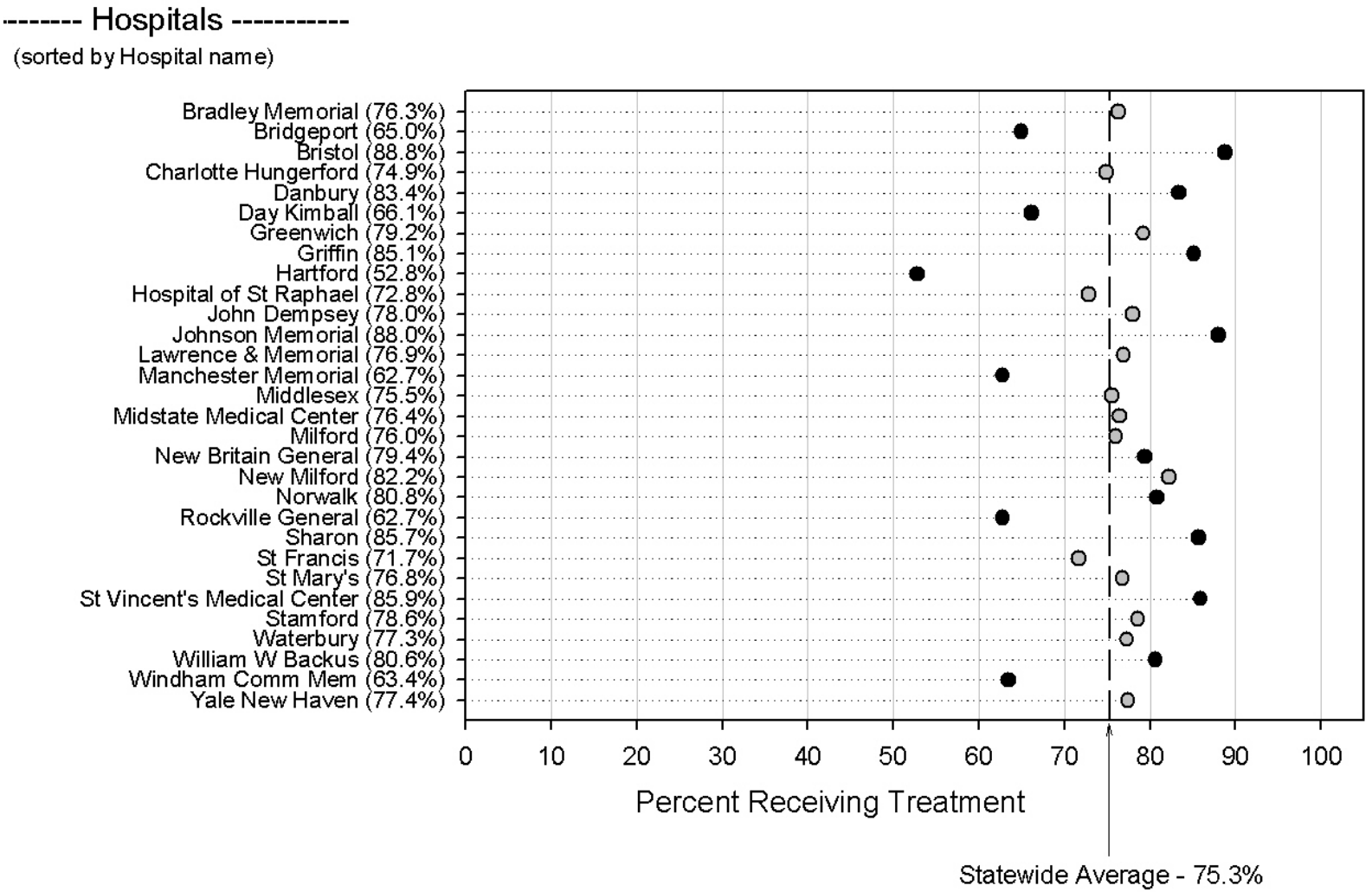
Antibiotics are used to treat pneumonia caused by bacteria. Early treatment with antibiotics can cure bacterial pneumonia and reduce the possibility of complications.

What can you do if your hospital does not do this?

You may have received antibiotics from your physician before admission to the hospital; therefore you may not receive antibiotics within 4 hours of arrival at the hospital. If you have not received antibiotics before your admission to the hospital, ask your doctor or nurse if you will be receiving an antibiotic.

Figure – 10

Performance Rates* for Connecticut Hospitals
Pneumonia -- Giving Antibiotics Within 4 Hours of Hospital Arrival
January 1- December 31, 2004



Key: The black-shaded circles identify those hospitals whose rates differ from the statewide score, based on a statistical test for significant differences ($p<0.05$). The grey-shaded circles identify values that are not significantly different from the statewide values.

Source: Connecticut Department of Public Health, Planning Branch, Healthcare Quality, Statistics, Analysis & Reporting. December, 2005.

* Performance rates are not displayed if the number of eligible patients was less than 20.

DISCUSSION

Performance Rates for 2004

During 2004, some hospitals treated only a small number of patients for some of the measures. When a hospital treats such a small number of patients, its performance rate is considered to be too unreliable for public reporting. Therefore, rates are shown only for those hospitals that treated a minimum of 20 eligible patients for each measure. No inferences can be made for those hospitals whose results are not presented. There were 22 out of a possible 300 hospital performance rates (8%) that could not be displayed due to the small number of patients being treated. This is much lower than the 23% of the rates that were suppressed in the April 2004 report based on one quarter of data from 2003. While some reported rates appear to differ from the average rate for Connecticut hospitals, we may not be able to say that they differ with adequate statistical certainty due to the limited number of cases that were treated.

Table 1 shows a comparison of Connecticut hospitals' average performance rates to the average performance rates of hospitals in the United States. Connecticut's hospitals are doing better on average than those in the U.S. on all ten of the clinical measures yet they still fall short of the goal of 100% on most of the measures. That is, performance gaps still exist between the care that could be given and the care that is being delivered.

Table 1

Connecticut's Performance Compared to the U.S. Performance, 2004

Condition	Measure	Average Connecticut Rate 2004	Average National Rate* 2004
Heart Attack	Aspirin at Arrival	96%	91%
	Aspirin at Discharge	97%	86%
	ACEI for LVSD at Discharge	83%	75%
	Beta-Blocker at Discharge	95%	85%
	Beta-Blocker at Arrival	94%	84%
Heart Failure	LVF Assessment	93%	78%
	ACEI for LVSD at Discharge	79%	74%
Pneumonia	Oxygenation Assessment	100%	98%
	Pneumococcal Vaccination	58%	46%
	Timely Antibiotic	75%	73%

* Source: www.hospitalcompare.hhs.gov for hospitals participating in the Hospital Quality Alliance initiative. Data are based upon patients hospitalized from 1/1/04 – 12/31/04.

At both the state and national levels, performance rates are low for the two measures related to the administration of an angiotensin converting enzyme inhibitor (ACEI) for either heart attack or heart failure patients, as well as for the pneumonia measures related to the administration of timely antibiotics and pneumococcal vaccinations. These four measures also have the widest range of reported performance rates, suggesting that significant differences in practice patterns exist and that better performing hospitals may have developed practices that might ultimately benefit other hospitals that choose to adopt similar methods.

Average Connecticut performance rates are low for the measures related to the administration of an ACEI for either heart attack (83%) or heart failure (79%) patients. Although guidelines recommend that ACE inhibitors be considered the first line therapy for patients with reduced left ventricular ejection fractions (LVEF), some patients do not tolerate ACEIs well and they may be receiving angiotensin II receptor blockers (ARBs) instead. In recent years, several clinical studies have been published comparing the use of ARBs with that of ACEIs and have found them to provide similar benefits with fewer adverse effects[4]. Therefore, physicians who are concerned about the potential adverse effects of ACEIs are prescribing ARBs as an alternative. Such usage can affect hospital performance rates in one of two ways. If the physician specifically documents that he/she used an ARB rather than an ACEI, this would remove the case from the number of patients who should have received an ACEI and would reduce the volume of cases for that measure. However, if the physician prescribes an ARB rather than an ACEI but does not specifically document it on the patient's chart, then it would be counted as failing to give an ACEI, resulting in a lower performance rate. Given that there are still many patients with heart failure and reduced LVEF who do not receive either medication, it is important that hospitals recognize the need to provide treatment with one of these medications and to document the treatment choice. In recognition of the similar efficacy of ACEI and ARB for the treatment of patients with LVSD, the two performance measures related to the treatment of patients with LVSD will change with January 1, 2005 discharges to reflect the acceptable use of either ACEI or ARB for treatment of patients with LVSD.

Connecticut hospitals have had varying success in vaccinating all eligible patients aged 65 and over for pneumonia. Even though almost half of the hospitals (14 out of 30; Table 3) have seen a significant increase in their performance rates from 2003 to 2004 for this measure, overall performance rates remain low. In 2004, pneumococcal vaccination rates in Connecticut range from 33% to 96% with an average rate of 58%. The hospitals with the greatest success have used a variety of methods including pre-printed order sets, worksheets or stickers with vaccine reminders for physicians, and close follow-up by patient

case managers[5]. Some of the reasons that have been identified for the lower vaccination rates by hospitals include patient refusal due to fear of side effects, difficulty determining whether the patient had previously received the vaccine, physicians forgetting to order the vaccine[6], or most notably because hospitals have been required by Connecticut law to obtain an individual physician order for each patient vaccination. Recent studies in the medical literature show that a standing hospital policy (sometimes termed a "standing order") that allows nurses to screen patients for contraindications and administer the vaccine when appropriate, without requiring an individual physician order for each patient, is far more effective in achieving high levels of vaccination than other strategies[7]. In recognition of this, the federal Centers for Medicare and Medicaid Services modified federal law in 2002 to allow the use of standing hospital policies for certain vaccinations. Connecticut followed suit in 2004 with the passage of Public Act 04-164 allowing a hospital to administer influenza and pneumococcal polysaccharide vaccines to patients without an individual physician's order. However, implementation regulations were only recently approved during the fall of 2005. It is anticipated that future performance rates in Connecticut will improve as a result of this legislative change.

The percentage of pneumonia patients who receive an antibiotic within four hours of arrival at the hospital is another indicator with potential for improvement despite the fact that 13 out of 30 hospitals showed significant improvement in their rates between 2003 and 2004 (Table 3). Performance rates in 2004 vary widely by hospital from 53% to 89% with a statewide average rate of 75%. One explanation for this is that the Centers for Medicare and Medicaid Services only recently changed its recommended target time for antibiotic administration from eight hours to four hours based on a new study showing that a more timely administration of the first dose of antibiotic decreases morbidity and mortality from complications of pneumonia, and hospitals may not yet have adapted to the newer time thresholds[8]. In order to meet the new CMS target, many hospitals are redesigning their processes to administer the first dose of antibiotic as soon as the diagnosis of pneumonia is confirmed, which may occur in the emergency department, rather than waiting until the patient reaches his/her room in the patient care unit, which takes more time.

Another possible reason for the delayed administration of antibiotics is that many patients are treated by their primary care physician for pneumonia before they need hospitalization, in which case patients may be placed on antibiotics while still at home. Many of the new antibiotics are longer acting and may be given only once or twice a day. Therefore, a patient already taking an antibiotic who is then admitted to a

hospital may not receive the next dose until the next time that it is due to be given, which may exceed the four-hour target being measured. If this information is not documented in the patient's medical record, the case will be incorrectly counted as a failure to give timely antibiotics.

Changes in the Quality of Hospital Care

Although some performance rates are still relatively low, they are improving. Between 2003 and 2004, Connecticut hospitals' average performances rates increased significantly for eight of the ten measures (Table 2). Those measures with the lowest rates in 2003 tended to increase the most. On a hospital-measure-specific level, 72 out of 249 hospital performance measures showed statistically significant rate increases from 2003 to 2004 (Table 3). Fifty-one hospital measures were excluded due to small sample sizes. Nearly half of the hospitals showed significant improvement on two of the three pneumonia measures, but there is still much room for improvement here. Details by hospital for each of the 81 hospital performance measures with significant differences between 2003 and 2004 can be found in the appendices. Although the improvement observed in some of the measures may have resulted in part from increased attention to documentation rather than patient care, it does appear that hospital performance is improving in Connecticut.

Table 2

Connecticut's Performance from 2003 to 2004

Condition	Measure	Average Performance Rate 2003 Q3-Q4	Average Performance Rate 2004 Q1-Q4
Heart Attack	Aspirin at Arrival	95%	96%
	Aspirin at Discharge	95%	97%*
	ACEI for LVSD at Discharge	76%	83%*
	Beta-Blocker at Discharge	92%	95%*
	Beta-Blocker at Arrival	92%	94%*
Heart Failure	LVF Assessment	90%	93%*
	ACEI for LVSD at Discharge	71%	79%*
Pneumonia	Oxygenation Assessment	100%	100%
	Pneumococcal Vaccination	43%	58%*
	Timely Antibiotic	68%	75%*

* Difference is statistically significant ($p < 0.05$).

Table 3

Change in Hospital Performance from 2003 to 2004*

Measure	No. of Hospitals (out of 30) with 20+ Cases	No. of Hospitals with Significant Rate Increases	No. of Hospitals with Significant Rate Decreases	No. of Hospitals with no Significant Rate Changes
Heart Attack				
Aspirin at Arrival	26	3	1	22
Aspirin at Discharge	20	5	0	15
ACEI for LVSD at Discharge	9	2	0	7
Beta-Blocker at Discharge	22	9	0	13
Beta-Blocker at Arrival	25	6	1	18
Heart Failure				
LVF Assessment	30	11	2	17
ACEI for LVSD at Discharge	27	8	0	19
Pneumonia				
Oxygenation Assessment	30	1	0	29
Pneumococcal Vaccination	30	14	4	12
Timely Antibiotic	30	13	1	16
	249	72	9	158

* 2003 included data from the 3rd and 4th quarters only. Hospitals were excluded from a measure if they had fewer than 20 cases for either 2003 or 2004. Differences are significant if $p<0.05$.

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RESOURCES

Below are some useful resources if you would like more information about hospital quality of care.

The **Connecticut Department of Public Health** is the state agency responsible for developing the Hospital Performance Comparisons Report. It is also the agency responsible for the licensing and regulatory oversight of Connecticut hospitals. For more information about the activities in the Connecticut Department of Public Health, visit their website at www.dph.state.ct.us.

The **Connecticut Hospital Association** represents and serves Connecticut's hospitals. For more information about the hospitals in Connecticut, contact the Connecticut Hospital Association at www.cthosp.org or 203-294-7213.

Qualidigm® is the Quality Improvement Organization for Connecticut under the direction of the Centers for Medicare and Medicaid. They implement quality improvement programs with hospitals and serve as advocates for Medicare beneficiaries. Contact them at www.qualidigm.org or 860-632-2008.

For more information about the **Hospital Quality Alliance** initiative of the **Centers for Medicare and Medicaid**, visit the web site www.cms.hhs.gov/quality/hospital or www.hospitalcompare.hhs.gov/.

The **Joint Commission on Accreditation of Healthcare Organizations** (JCAHO) evaluates the quality and safety of care of health care organizations and accredits them. They have prepared information to help consumers select a hospital. Go to their website at www.jcaho.org or call their Customer Service Department at 630-792-5800.

The **Agency for Health Research and Quality** (AHRQ) is the lead federal agency responsible for research on quality, cost, access, utilization, and health care outcomes and patient safety. AHRQ has a variety of resources for consumers including *Your Guide to Choosing Quality Health Care*. Visit their website at www.ahcpr.gov.

The **Connecticut Attorney General's Office** has prepared a consumer guide: *Navigating the Health Care System: A Resource Guide for Consumers*. It can be found on the web at http://www.ct.gov/ag/site/default.asp.

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CONNECTICUT HOSPITALS

Only licensed hospitals that regularly care for adults with heart attacks, heart failure, and pneumonia are included in this report. This report does not contain information from pediatric, psychiatric, or rehabilitation hospitals.

For more information about the quality of care provided by hospitals in Connecticut, contact the quality improvement department of any of the hospitals listed below or visit the hospital's web site.

The William W. Backus Hospital 326 Washington Street Norwich, CT 06360-2733 Joe Hughes 860-889-8331 ext. 2345 jhughes@wwbh.org	**John Dempsey Hospital** 263 Farmington Avenue Farmington, CT 06032-1941 Rhea Sanford, RN, Ph.D. 860-679-3519 rsanford@nso1.uchc.edu
Bradley Memorial Hospital 81 Meriden Avenue Southington, CT 06489-3297 Helayne Lightstone 860-224-5470 hlightstone@nbgh.org	**Greenwich Hospital** 5 Perryridge Road Greenwich, CT 06830-4697 George Pawlush 203-863-3126 georgep@greenhosp.org
Bridgeport Hospital 267 Grant Street Bridgeport, CT 06610-0120 Tom Wilson 203-384-3557 gtwils@bpthosp.org	**Griffin Hospital** 130 Division Street Derby, CT 06418-1326 William C. Powanda 203-732-7515 bpowanda@griffinhealth.org
Bristol Hospital Brewster Road Bristol, CT 06011-0977 Karen Poole 860-585-3528 kpoole@bristolhospital.org	**Hartford Hospital** 80 Seymour Street Hartford, CT 06102-5037 Laura Caramanica 860-545-2895 lcarama@harthosp.org
Danbury Hospital 24 Hospital Avenue Danbury, CT 06810-6099 Matthew Miller, MD 203-797-7966 matthew.miller@danhosp.org	**The Charlotte Hungerford Hospital** 540 Litchfield Street Torrington, CT 06790-0988 Daniel McIntyre 860-496-6474 dmcintyre@hungerford.org
Day Kimball Hospital 320 Pomfret Street Putnam, CT 06260-0901 Ron Coderre 860-928-7141 rcoderre@daykimball.org	**Johnson Memorial Hospital** 210 Chestnut Hill Road Stafford Springs, CT 06076-0860 Debra Abel 860-684-4251 dabel@jmhosp.org

Lawrence & Memorial Hospital 365 Montauk Avenue New London, CT 06320-4769 Alan Bier, MD 860-442-0711, ext. 2073 abier@lmhosp.chime.org	**Saint Francis Hospital and Medical Center** 114 Woodland Street Hartford, CT 06105-1200 Rolf Knoll, MD 860-714-4361 rknoll@stfranciscare.org
Manchester Memorial Hospital 71 Haynes Street Manchester, CT 06040-4188 Andrew Beck 860-647-4751 abeck@echn.org	**Saint Mary's Hospital** 56 Franklin Street Waterbury, CT 06706-1281 Sandra Roosa, RN 203-709-6095 sroosa@stmh.org
Middlesex Hospital 28 Crescent Street Middletown, CT 06457-3650 Susan Menichetti 860-704-3010 susan_menichetti@midhosp.org	**Hospital of Saint Raphael** 1450 Chapel Street New Haven, CT 06511-1450 Jeanne Scinto, PhD 203-789-6061 jscinto@srhs.org
MidState Medical Center 435 Lewis Avenue Meriden, CT 06451-2101 Barbara Kaplowe 203-694-8365 bkaplow@harthosp.org	**St. Vincent's Medical Center** 2800 Main Street Bridgeport, CT 06606-4292 Kerry Eaton 203-576-5850 keaton@svhs-ct.org
Milford Hospital 300 Seaside Avenue Milford, CT 06460-4603 Lloyd Friedman, MD 203-876-4288 Lloyd.Friedman@milfordhospital.org	**Sharon Hospital** 50 Hospital Hill Road Sharon, CT 06069-0789 Teri Gillette 860-364-4228 Teri.Gillette@sharonhospital.com
New Britain General Hospital 100 Grand Street New Britain, CT 06052-2017 Kate Betancourt 860-224-5900 ext. 2646 ebetancourt@nbgh.org	**The Stamford Hospital** Shelburne Road and West Broad Street Stamford, CT 06904-9317 John Rodis, MD 203-325-7295 jrodis@stamhealth.org
New Milford Hospital 21 Elm Street New Milford, CT 06776-2993 Linda Vryhof 860-350-7276 vryhof@newmilfhosp.org	**Waterbury Hospital** 64 Robbins Street Waterbury, CT 06708-2600 Deborah Quetti 203-573-7128 dquetti@wtbyhosp.chime.org
Norwalk Hospital 34 Maple Street Norwalk, CT 06850-3894 Jim Judson 203-852-2866 jim.judson@norwalkhealth.org	**Windham Community Memorial Hospital** 112 Mansfield Avenue Willimantic, CT 06226-2040 Kathy Arbuckle 860-456-3852 karbuckle@wcmh.org
Rockville General Hospital 31 Union Street Vernon, CT 06066-3160 Andrew Beck 860-647-4751 abeck@echn.org	**Yale-New Haven Hospital** 20 York Street New Haven, CT 06510-3202 William Crede, MD 203-688-4634 crede@ynhh.org

Appendices A - B

Appendix A

DEFINITIONS OF MEASURES

Acute Myocardial Infarction (AMI or Heart Attack)

For the purposes of this report the AMI population consists of those patients over the age of 18 with a discharge ICD-9-CM code indicating an initial AMI episode (410.x1).

Each measure within the AMI measure set is calculated individually based on the inclusion/exclusion criteria for that particular measure; therefore, the denominators for each measure may be different.

Aspirin at arrival

Exclusion criteria:

- Less than 18 years of age
- Patients transferred from another acute care hospital on the day of arrival
- Patients received in transfer from another hospital, including another emergency department
- Patients discharged on day of arrival
- Patients expired on day of arrival
- Patients who left against medical advice on day of arrival
- Patients with contraindication to aspirin including:
    - active bleeding on arrival or within 24 hours of arrival,
    - aspirin allergy,
    - on warfarin/Coumadin prior to arrival
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for not giving aspirin on arrival

Aspirin at discharge

Exclusion criteria:

- Less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice

- Patients with contraindication to aspirin including:
    - active bleeding on arrival or within 24 hours of arrival,
    - aspirin allergy,
    - on warfarin/Coumadin prior to arrival
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for not prescribing aspirin at discharge

ACEI for LVSD

Inclusion criteria:

- Chart documentation of Left Ventricular Ejection Fraction (LVEF) less than 40% or a narrative description of LVF consistent with moderate or severe systolic dysfunction

Exclusion criteria:

- Less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Patients with chart documentation of participation in a clinical trial testing alternatives to ACEI documented in the medical record:
    - ACEI allergy,
    - moderate or severe aortic stenosis
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for not prescribing ACEI

Beta blocker prescribed at discharge

Exclusion criteria:

- Less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Patients with one or more of the following beta blocker contraindications/reasons for not prescribing:

    - Beta blocker allergy,
    - Bradycardia (heart rate less than 60 bpm) on day of discharge or day prior to discharge while not on beta blocker
    - Second or third degree heart block on ECG on arrival or during hospital stay and does not have a pacemaker
    - Systolic BP less than 90 mmHg on day of discharge or day prior to discharge while not on beta blocker
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistance

Beta blocker at arrival

Exclusion criteria:

- Less than 18 years of age
- Patients transferred from another acute care hospital on the day of arrival
- Patients received in transfer from another hospital, including another emergency department
- Patients discharged on day of arrival
- Patients expired on day of arrival
- Patients who left against medical advice on day of arrival
- Patients with one or more of the following beta blocker contraindications/reasons for not prescribing:
    - Beta blocker allergy,
    - Bradycardia (heart rate less than 60 bpm) on arrival or within 24 hours of arrival while not on beta blocker
    - Heart failure on arrival or within 24 hours after arrival
    - Second or third degree heart block on ECG on arrival or within 24 hours after arrival and does not have a pacemaker
    - Shock on arrival or within 24 hours after arrival
    - Systolic BP less than 90 mmHg on arrival or within 24 hours after arrival
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for not giving a beta blocker within 24 hours after hospital arrival

Heart Failure

For the purposes of this report the Heart Failure population consists of those patients over the age of 18 with a discharge ICD-9-CM code indicating a Heart Failure episode (402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428.0, 428.1, 428.20, 428.21, 428.22, 428.23, 428.30, 428.31, 428.32, 428.33, 428.40, 428.41, 429.42, 428.43, 428.9).

Each measure within the Heart Failure measure set is calculated individually based on the inclusion/exclusion criteria for that particular measure; therefore, the denominators for each measure may be different.

Left Ventricular Function (LVF) Assessment

Exclusion criteria:

- Patients less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for no LVF assessment

ACEI for LVSD

Inclusion criteria:

- Chart documentation of Left Ventricular Ejection Fraction (LVEF) less than 40% or a narrative description of LVF consistent with moderate or severe systolic dysfunction

Exclusion criteria:

- Less than 18 years of age
- Patients transferred to another acute care hospital
- Patients who expired
- Patients who left against medical advice
- Patients discharged to hospice
- Patients with chart documentation of participation in a clinical trial testing alternatives to ACEI documented in the medical record:
    - ACEI allergy,

    - moderate or severe aortic stenosis
- Other explicitly linked reason documented by a physician, nurse practitioner or physician assistant for not prescribing ACEI

Pneumonia

For the purposes of this report the pneumonia population consists of those patients over the age of 29 days with a discharge ICD-9-CM code indicating a principal diagnosis of pneumonia or a principal diagnosis of septicemia or respiratory failure with a secondary diagnosis of pneumonia.

Patients without a working diagnosis of pneumonia on admission or those for whom "comfort measures only" are prescribed during their hospitalization are immediately excluded from the population.

Each measure within the pneumonia measure set is calculated individually based on the inclusion/exclusion criteria for that particular measure; therefore, the denominators for each measure may be different.

Oxygenation assessment

Exclusion criteria:

- Patients received in transfer from another acute care hospital
- Patients who have no working diagnosis of pneumonia at the time of admission
- Patients receiving "comfort measures only"
- Patients less than 29 days of age

Pneumococcal screening and/or vaccination

Inclusion criteria:

- Patients over 65 years of age with a principal diagnosis of pneumonia or a principal diagnosis of septicemia or respiratory failure with a secondary diagnosis of pneumonia

Exclusion criteria:

- Patients received in transfer from another acute care hospital
- Patients who left against medical advice
- Patients who have no working diagnosis of pneumonia at the time of admission
- Patients receiving "comfort measures only"

- Patients less than 65 years of age
- Patient expired

Antibiotic timing

Exclusion criteria:

- Patients received in transfer from another acute care hospital
- Patients who have no working diagnosis of pneumonia at the time of admission
- Patients who do not receive antibiotics during hospitalization
- Patients receiving “comfort measures only”
- Patients less than 29 days of age
- Patients whose initial antibiotic was administered more than 36 hours from the time of arrival
- Does not include antibiotics received prior to hospitalization but this may cause an extended time to initial antibiotic in the hospital

Appendix B

HEART ATTACK, HEART FAILURE, AND PNEUMONIA PERFORMANCE RATES

Tables 4 - 6 display 2003, quarters 3 and 4, performance rates and the number of eligible patients for each hospital and individual measure for each of the three medical conditions -- heart attack, heart failure, and pneumonia. Comparison scores include the statewide average rate. National averages are not available.

Tables 7 - 9 display 2004 performance rates and the number of eligible patients for each hospital and individual measure for each of the three medical conditions -- heart attack, heart failure, and pneumonia. Comparison scores include the statewide average rate and the national average rate.

Table 10 shows the change in hospital performance rates from 2003 to 2004 for those hospital-specific measures with statistically significant differences. Data are displayed by hospital.

Table 4

Heart Attack Performance Rates for Connecticut Hospitals

July 1, 2003 to December 31, 2003

	Aspirin at Arrival	Aspirin at Discharge	ACEI for LVSD	Beta Blocker at Discharge	Beta Blocker at Arrival
National Average Rate	**Not available**	**Not available**	**Not available**	**Not available**	**Not available**
Connecticut Average Rate	**95%**	**95%**	**76%**	**92%**	**92%**
Bradley Memorial Hospital & Health Center	**	**	**	**	**
Bridgeport Hospital	95% of 166 patients	98% of 285 patients	81% of 91 patients	95% of 294 patients	89% of 132 patients
Bristol Hospital	88% of 43 patients	**	**	90% of 21 patients	77% of 48 patients
Charlotte Hungerford Hospital	96% of 27 patients	**	**	**	83% of 30 patients
Danbury Hospital	97% of 70 patients	94% of 35 patients	**	87% of 39 patients	96% of 67 patients
Day Kimball Hospital	80% of 41 patients	**	**	77% of 22 patients	83% of 42 patients
Greenwich Hospital Association	100% of 38 patients	100% of 22 patients	**	100% of 27 patients	100% of 43 patients
Griffin Hospital	93% of 45 patients	75% of 20 patients	**	85% of 27 patients	88% of 52 patients
Hartford Hospital	100% of 263 patients	95% of 458 patients	86% of 132 patients	90% of 463 patients	97% of 259 patients
Hospital Of St Raphael	96% of 195 patients	95% of 276 patients	71% of 63 patients	95% of 287 patients	90% of 191 patients
John Dempsey Hospital	100% of 50 patients	100% of 70 patients	100% of 25 patients	99% of 76 patients	98% of 53 patients
Johnson Memorial Hospital	79% of 24 patients	**	**	**	**
Lawrence & Memorial Hospital	94% of 90 patients	93% of 42 patients	**	93% of 45 patients	87% of 89 patients
Manchester Memorial Hospital	93% of 71 patients	97% of 33 patients	**	86% of 42 patients	89% of 76 patients
Middlesex Hospital	99% of 99 patients	100% of 61 patients	92% of 24 patients	100% of 65 patients	99% of 93 patients
MidState Medical Center	91% of 70 patients	92% of 36 patients	**	76% of 38 patients	88% of 69 patients
Milford Hospital	97% of 34 patients	**	**	**	94% of 31 patients
New Britain General Hospital	91% of 117 patients	76% of 68 patients	65% of 26 patients	92% of 84 patients	86% of 111 patients
New Milford Hospital	**	**	**	**	**
Norwalk Hospital	95% of 93 patients	100% of 43 patients	**	100% of 48 patients	96% of 83 patients
Rockville General Hospital	86% of 35 patients	**	**	**	92% of 39 patients
Sharon Hospital	**	**	**	**	**
St Francis Hospital & Medical Center	96% of 146 patients	95% of 356 patients	79% of 106 patients	92% of 352 patients	88% of 144 patients
St Mary's Hospital	98% of 100 patients	96% of 50 patients	**	86% of 49 patients	94% of 94 patients
St Vincent's Medical Center	88% of 161 patients	91% of 230 patients	58% of 60 patients	84% of 247 patients	82% of 152 patients
Stamford Hospital	99% of 89 patients	87% of 47 patients	**	92% of 50 patients	93% of 89 patients
Waterbury Hospital	99% of 129 patients	94% of 62 patients	**	94% of 64 patients	99% of 114 patients
William W Backus Hospital	97% of 86 patients	89% of 36 patients	**	93% of 43 patients	94% of 86 patients
Windham Community Memorial Hospital	**	**	**	**	**
Yale-New Haven Hospital	97% of 155 patients	98% of 358 patients	71% of 97 patients	94% of 377 patients	92% of 142 patients

*** Performance rates are not displayed if denominators were less than 20 during the reporting period.*

Table 5

Heart Failure Performance Rates for Connecticut Hospitals

July 1, 2003 to December 31, 2003

	LVF Assessment	ACEI for LVSD
National Average Rate	**Not available**	**Not available**
Connecticut Average Rate	**90%**	**71%**
Bradley Memorial Hospital & Health Center	86% of 72 patients	64% of 25 patients
Bridgeport Hospital	97% of 246 patients	78% of 103 patients
Bristol Hospital	76% of 172 patients	74% of 61 patients
Charlotte Hungerford Hospital	81% of 79 patients	73% of 22 patients
Danbury Hospital	95% of 176 patients	90% of 61 patients
Day Kimball Hospital	85% of 93 patients	73% of 26 patients
Greenwich Hospital Association	99% of 86 patients	79% of 38 patients
Griffin Hospital	95% of 102 patients	81% of 21 patients
Hartford Hospital	91% of 329 patients	61% of 143 patients
Hospital Of St Raphael	89% of 387 patients	46% of 98 patients
John Dempsey Hospital	99% of 67 patients	100% of 40 patients
Johnson Memorial Hospital	82% of 51 patients	**
Lawrence & Memorial Hospital	91% of 235 patients	63% of 60 patients
Manchester Memorial Hospital	82% of 104 patients	57% of 21 patients
Middlesex Hospital	97% of 142 patients	88% of 56 patients
MidState Medical Center	85% of 151 patients	77% of 61 patients
Milford Hospital	88% of 91 patients	69% of 29 patients
New Britain General Hospital	84% of 306 patients	66% of 104 patients
New Milford Hospital	98% of 45 patients	**
Norwalk Hospital	94% of 176 patients	79% of 68 patients
Rockville General Hospital	91% of 79 patients	75% of 28 patients
Sharon Hospital	95% of 42 patients	**
St Francis Hospital & Medical Center	92% of 451 patients	70% of 207 patients
St Mary's Hospital	83% of 183 patients	65% of 66 patients
St Vincent's Medical Center	74% of 318 patients	73% of 116 patients
Stamford Hospital	90% of 179 patients	66% of 67 patients
Waterbury Hospital	96% of 168 patients	82% of 44 patients
William W Backus Hospital	96% of 127 patients	86% of 35 patients
Windham Community Memorial Hospital	96% of 55 patients	80% of 20 patients
Yale-New Haven Hospital	96% of 386 patients	65% of 136 patients

*** Performance rates are not displayed if the number of eligible patients was less than 20 during the reporting period.*

Table 6

Pneumonia Performance Rates for Connecticut Hospitals

July 1, 2003 to December 31, 2003

	Oxygenation Assessment	Pneumococcal Vaccination	Timely Antibiotic
National Average Rate	**Not available**	**Not available**	**Not available**
Connecticut Average Rate	**100%**	**43%**	**68%**
Bradley Memorial Hospital & Health Center	97% of 76 patients	85% of 40 patients	74% of 70 patients
Bridgeport Hospital	100% of 223 patients	41% of 126 patients	38% of 215 patients
Bristol Hospital	100% of 193 patients	58% of 134 patients	80% of 189 patients
Charlotte Hungerford Hospital	99% of 184 patients	70% of 108 patients	75% of 182 patients
Danbury Hospital	100% of 213 patients	44% of 140 patients	80% of 210 patients
Day Kimball Hospital	100% of 131 patients	64% of 74 patients	65% of 129 patients
Greenwich Hospital Association	100% of 130 patients	78% of 89 patients	91% of 126 patients
Griffin Hospital	100% of 145 patients	94% of 111 patients	80% of 143 patients
Hartford Hospital	99% of 375 patients	28% of 228 patients	49% of 368 patients
Hospital Of St Raphael	100% of 238 patients	10% of 180 patients	61% of 234 patients
John Dempsey Hospital	100% of 109 patients	67% of 72 patients	76% of 105 patients
Johnson Memorial Hospital	100% of 100 patients	32% of 66 patients	75% of 97 patients
Lawrence & Memorial Hospital	100% of 270 patients	18% of 157 patients	60% of 257 patients
Manchester Memorial Hospital	98% of 128 patients	36% of 85 patients	57% of 125 patients
Middlesex Hospital	100% of 252 patients	63% of 168 patients	67% of 252 patients
MidState Medical Center	100% of 215 patients	17% of 160 patients	75% of 214 patients
Milford Hospital	100% of 101 patients	26% of 68 patients	69% of 99 patients
New Britain General Hospital	99% of 271 patients	58% of 161 patients	66% of 268 patients
New Milford Hospital	100% of 68 patients	56% of 36 patients	70% of 66 patients
Norwalk Hospital	99% of 213 patients	59% of 123 patients	78% of 209 patients
Rockville General Hospital	100% of 102 patients	40% of 62 patients	56% of 100 patients
Sharon Hospital	100% of 63 patients	56% of 41 patients	77% of 56 patients
St Francis Hospital & Medical Center	100% of 317 patients	12% of 182 patients	62% of 316 patients
St Mary's Hospital	99% of 149 patients	13% of 68 patients	72% of 147 patients
St Vincent's Medical Center	100% of 307 patients	35% of 208 patients	68% of 305 patients
Stamford Hospital	99% of 233 patients	60% of 133 patients	69% of 229 patients
Waterbury Hospital	99% of 345 patients	34% of 228 patients	70% of 342 patients
William W Backus Hospital	100% of 255 patients	56% of 147 patients	83% of 254 patients
Windham Community Memorial Hospital	100% of 170 patients	45% of 96 patients	54% of 167 patients
Yale-New Haven Hospital	100% of 312 patients	44% of 131 patients	74% of 303 patients

*** Performance rates are not displayed if the number of eligible patients was less than 20 during the reporting period.*

Table 7

Heart Attack Performance Rates for Connecticut Hospitals

January 1, 2004 to December 31, 2004

	Aspirin at Arrival	Aspirin at Discharge	ACEI for LVSD	Beta Blocker at Discharge	Beta Blocker at Arrival
National Average Rate*	**91%**	**86%**	**75%**	**85%**	**84%**
Connecticut Average Rate	**96%**	**97%**	**83%**	**95%**	**94%**
Bradley Memorial Hospital & Health Center	95% of 20 patients	**	**	**	88% of 25 patients
Bridgeport Hospital	95% of 257 patients	99% of 544 patients	91% of 123 patients	96% of 564 patients	92% of 217 patients
Bristol Hospital	96% of 84 patients	94% of 33 patients	**	96% of 45 patients	90% of 91 patients
Charlotte Hungerford Hospital	98% of 62 patients	100% of 31 patients	**	91% of 34 patients	94% of 64 patients
Danbury Hospital	98% of 151 patients	95% of 82 patients	88% of 26 patients	98% of 89 patients	95% of 155 patients
Day Kimball Hospital	88% of 49 patients	95% of 21 patients	**	88% of 25 patients	89% of 47 patients
Greenwich Hospital Association	93% of 57 patients	100% of 25 patients	**	97% of 29 patients	98% of 53 patients
Griffin Hospital	98% of 182 patients	99% of 77 patients	89% of 27 patients	100% of 96 patients	99% of 169 patients
Hartford Hospital	97% of 451 patients	95% of 933 patients	80% of 210 patients	95% of 946 patients	97% of 439 patients
Hospital Of St Raphael	94% of 330 patients	96% of 440 patients	70% of 91 patients	92% of 412 patients	81% of 328 patients
John Dempsey Hospital	100% of 99 patients	100% of 184 patients	100% of 68 patients	99% of 182 patients	99% of 98 patients
Johnson Memorial Hospital	100% of 25 patients	**	**	**	100% of 25 patients
Lawrence & Memorial Hospital	98% of 165 patients	100% of 79 patients	**	97% of 72 patients	98% of 144 patients
Manchester Memorial Hospital	96% of 95 patients	100% of 33 patients	**	94% of 48 patients	97% of 98 patients
Middlesex Hospital	98% of 204 patients	99% of 99 patients	94% of 33 patients	99% of 115 patients	99% of 184 patients
MidState Medical Center	91% of 98 patients	86% of 44 patients	**	94% of 51 patients	89% of 94 patients
Milford Hospital	94% of 53 patients	96% of 27 patients	**	97% of 33 patients	92% of 53 patients
New Britain General Hospital	93% of 194 patients	92% of 104 patients	79% of 33 patients	97% of 133 patients	95% of 175 patients
New Milford Hospital	100% of 24 patients	**	**	**	95% of 20 patients
Norwalk Hospital	95% of 194 patients	98% of 85 patients	94% of 35 patients	94% of 108 patients	93% of 151 patients
Rockville General Hospital	98% of 54 patients	96% of 23 patients	**	97% of 29 patients	96% of 57 patients
Sharon Hospital	**	**	**	**	95% of 21 patients
St Francis Hospital & Medical Center	96% of 260 patients	98% of 564 patients	81% of 172 patients	96% of 621 patients	87% of 205 patients
St Mary's Hospital	95% of 197 patients	92% of 106 patients	77% of 35 patients	96% of 115 patients	99% of 179 patients
St Vincent's Medical Center	94% of 356 patients	94% of 484 patients	81% of 144 patients	90% of 531 patients	90% of 332 patients
Stamford Hospital	97% of 118 patients	95% of 59 patients	82% of 22 patients	94% of 71 patients	99% of 89 patients
Waterbury Hospital	97% of 223 patients	98% of 97 patients	93% of 27 patients	97% of 118 patients	97% of 184 patients
William W Backus Hospital	99% of 159 patients	100% of 62 patients	**	100% of 82 patients	99% of 121 patients
Windham Community Memorial Hospital	91% of 54 patients	**	**	83% of 24 patients	88% of 40 patients
Yale-New Haven Hospital	95% of 20 patients	98% of 708 patients	82% of 153 patients	97% of 779 patients	96% of 264 patients

* *Source: CMS Hospital Compare based on data 1/1/04-12/31/04.*

** *Performance rates are not displayed if denominators were less than 20 during the reporting period.*

Table 8

Heart Failure Performance Rates for Connecticut Hospitals

January 1, 2004 to December 31, 2004

	LVF Assessment	ACEI for LVSD
National Average Rate*	**78%**	**74%**
Connecticut Average Rate	**93%**	**79%**
Bradley Memorial Hospital & Health Center	98% of 145 patients	87% of 39 patients
Bridgeport Hospital	95% of 515 patients	81% of 194 patients
Bristol Hospital	91% of 280 patients	86% of 96 patients
Charlotte Hungerford Hospital	86% of 222 patients	69% of 51 patients
Danbury Hospital	96% of 455 patients	87% of 183 patients
Day Kimball Hospital	88% of 181 patients	64% of 58 patients
Greenwich Hospital Association	88% of 183 patients	81% of 57 patients
Griffin Hospital	98% of 272 patients	90% of 70 patients
Hartford Hospital	90% of 810 patients	61% of 325 patients
Hospital Of St Raphael	93% of 942 patients	66% of 241 patients
John Dempsey Hospital	98% of 177 patients	97% of 64 patients
Johnson Memorial Hospital	90% of 106 patients	92% of 25 patients
Lawrence & Memorial Hospital	94% of 360 patients	85% of 107 patients
Manchester Memorial Hospital	100% of 257 patients	92% of 92 patients
Middlesex Hospital	95% of 265 patients	89% of 98 patients
MidState Medical Center	87% of 326 patients	74% of 90 patients
Milford Hospital	93% of 197 patients	69% of 48 patients
New Britain General Hospital	92% of 600 patients	75% of 191 patients
New Milford Hospital	92% of 72 patients	71% of 24 patients
Norwalk Hospital	96% of 364 patients	81% of 103 patients
Rockville General Hospital	99% of 134 patients	97% of 32 patients
Sharon Hospital	87% of 78 patients	**
St Francis Hospital & Medical Center	95% of 852 patients	85% of 356 patients
St Mary's Hospital	91% of 343 patients	71% of 112 patients
St Vincent's Medical Center	88% of 665 patients	74% of 233 patients
Stamford Hospital	97% of 404 patients	83% of 115 patients
Waterbury Hospital	90% of 382 patients	86% of 83 patients
William W Backus Hospital	99% of 294 patients	99% of 74 patients
Windham Community Memorial Hospital	95% of 131 patients	78% of 36 patients
Yale-New Haven Hospital	99% of 773 patients	81% of 230 patients

* *Source: CMS Hospital Compare based on data 1/1/04-12/31/04.*

** *Performance rates are not displayed if the number of eligible patients was less than 20 during the reporting period.*

Table 9

Pneumonia Performance Rates for Connecticut Hospitals

January 1, 2004 to December 31, 2004

	Oxygenation Assessment	Pneumococcal Vaccination	Timely Antibiotic
National Average Rate*	**98%**	**46%**	**73%**
Connecticut Average Rate	**100%**	**58%**	**75%**
Bradley Memorial Hospital & Health Center	100% of 149 patients	66% of 109 patients	76% of 131 patients
Bridgeport Hospital	100% of 400 patients	47% of 239 patients	65% of 371 patients
Bristol Hospital	99% of 376 patients	80% of 264 patients	89% of 338 patients
Charlotte Hungerford Hospital	100% of 256 patients	84% of 176 patients	75% of 231 patients
Danbury Hospital	100% of 441 patients	80% of 317 patients	83% of 391 patients
Day Kimball Hospital	100% of 269 patients	52% of 151 patients	66% of 248 patients
Greenwich Hospital Association	100% of 254 patients	56% of 188 patients	79% of 226 patients
Griffin Hospital	100% of 210 patients	96% of 159 patients	85% of 195 patients
Hartford Hospital	100% of 693 patients	47% of 428 patients	53% of 614 patients
Hospital Of St Raphael	100% of 634 patients	48% of 463 patients	73% of 567 patients
John Dempsey Hospital	100% of 191 patients	42% of 137 patients	78% of 182 patients
Johnson Memorial Hospital	100% of 149 patients	36% of 91 patients	88% of 133 patients
Lawrence & Memorial Hospital	100% of 370 patients	73% of 208 patients	77% of 329 patients
Manchester Memorial Hospital	100% of 275 patients	33% of 172 patients	63% of 255 patients
Middlesex Hospital	100% of 452 patients	38% of 304 patients	76% of 433 patients
MidState Medical Center	100% of 442 patients	37% of 313 patients	76% of 403 patients
Milford Hospital	100% of 254 patients	34% of 183 patients	76% of 225 patients
New Britain General Hospital	99% of 595 patients	78% of 379 patients	79% of 558 patients
New Milford Hospital	99% of 141 patients	49% of 102 patients	82% of 135 patients
Norwalk Hospital	99% of 429 patients	70% of 289 patients	81% of 390 patients
Rockville General Hospital	100% of 160 patients	41% of 110 patients	63% of 153 patients
Sharon Hospital	100% of 125 patients	55% of 86 patients	86% of 112 patients
St Francis Hospital & Medical Center	100% of 587 patients	46% of 354 patients	72% of 512 patients
St Mary's Hospital	99% of 308 patients	42% of 187 patients	77% of 271 patients
St Vincent's Medical Center	100% of 562 patients	79% of 363 patients	86% of 524 patients
Stamford Hospital	100% of 405 patients	66% of 266 patients	79% of 387 patients
Waterbury Hospital	100% of 612 patients	52% of 405 patients	77% of 568 patients
William W Backus Hospital	100% of 472 patients	58% of 289 patients	81% of 459 patients
Windham Community Memorial Hospital	100% of 302 patients	56% of 172 patients	63% of 290 patients
Yale-New Haven Hospital	100% of 464 patients	81% of 210 patients	77% of 451 patients

* *Source: CMS Hospital Compare based on data 1/1/04-12/31/04.*

*** Performance rates are not displayed if the number of eligible patients was less than 20 during the reporting period.*

Table 10

Hospital Performance Rates with Significant Differences from 2003 to 2004*

Hospital	Measure#	2003 Performance Rate	2004 Performance Rate	Difference	P-value
Bradley Memorial Hospital	HF-2	86.1	97.9	11.8	0.001
Bradley Memorial Hospital	PN-2	85.0	66.1	-18.9	0.026
Bridgeport Hospital	AMI-3	81.3	91.1	9.7	0.042
Bridgeport Hospital	PN-5b	38.1	65.0	26.8	0.000
Bristol Hospital	AMI-6	77.1	90.1	13.0	0.045
Bristol Hospital	HF-2	75.6	91.1	15.5	0.000
Bristol Hospital	PN-2	58.2	79.9	21.7	0.000
Bristol Hospital	PN-5b	80.4	88.8	8.3	0.013
Charlotte Hungerford Hospital	PN-2	70.4	84.1	13.7	0.007
Danbury Hospital	AMI-5	87.2	97.8	10.6	0.027
Danbury Hospital	PN-2	44.3	80.1	35.8	0.000
Greenwich Hospital Association	HF-2	98.8	88.0	-10.9	0.002
Greenwich Hospital Association	PN-2	77.5	55.9	-21.7	0.001
Greenwich Hospital Association	PN-5b	91.3	79.2	-12.1	0.004
Griffin Hospital	AMI-2	75.0	98.7	23.7	0.001
Griffin Hospital	AMI-5	85.2	100.0	14.8	0.002
Griffin Hospital	AMI-6	88.5	98.8	10.4	0.003
Hartford Hospital	AMI-1	100.0	97.1	-2.9	0.003
Hartford Hospital	AMI-5	90.3	95.2	5.0	0.001
Hartford Hospital	PN-1	98.9	100.0	1.1	0.015
Hartford Hospital	PN-2	27.6	46.7	19.1	0.000
Hospital Of St Raphael	AMI-6	90.1	80.8	-9.3	0.006
Hospital Of St Raphael	HF-2	89.4	93.2	3.8	0.025
Hospital Of St Raphael	HF-3	45.9	66.4	20.5	0.001
Hospital Of St Raphael	PN-2	10.0	47.7	37.7	0.000
Hospital Of St Raphael	PN-5b	60.7	72.8	12.2	0.001
John Dempsey Hospital	PN-2	66.7	41.6	-25.1	0.001
Johnson Memorial Hospital	AMI-1	79.2	100.0	20.8	0.022
Johnson Memorial Hospital	PN-5b	75.3	88.0	12.7	0.014
Lawrence & Memorial Hospital	AMI-2	92.9	100.0	7.1	0.040
Lawrence & Memorial Hospital	AMI-6	86.5	97.9	11.4	0.001
Lawrence & Memorial Hospital	HF-3	63.3	85.0	21.7	0.002
Lawrence & Memorial Hospital	PN-2	17.8	73.1	55.2	0.000
Lawrence & Memorial Hospital	PN-5b	60.3	76.9	16.6	0.000
Manchester Memorial Hospital	HF-2	81.7	99.6	17.9	0.000
Manchester Memorial Hospital	HF-3	57.1	92.4	35.2	0.000
Middlesex Hospital	PN-2	63.1	38.2	-24.9	0.000
Middlesex Hospital	PN-5b	67.1	75.5	8.5	0.021
Midstate Medical Center	AMI-5	76.3	94.1	17.8	0.025
Midstate Medical Center	PN-2	16.9	37.4	20.5	0.000

Hospital Performance Rates with Significant Differences from 2003 to 2004 (cont.)

Hospital	Measure	2003 Performance Rate	2004 Performance Rate	Difference	P-value
New Britain General Hospital	AMI-2	76.5	92.3	15.8	0.006
New Britain General Hospital	AMI-6	86.5	95.4	8.9	0.012
New Britain General Hospital	HF-2	84.0	92.0	8.0	0.000
New Britain General Hospital	PN-2	57.8	77.6	19.8	0.000
New Britain General Hospital	PN-5b	66.4	79.4	13.0	0.000
New Milford Hospital	PN-5b	69.7	82.2	12.5	0.048
Norwalk Hospital Association	PN-2	59.3	70.2	10.9	0.039
Rockville General Hospital	AMI-1	85.7	98.1	12.4	0.033
Rockville General Hospital	HF-2	91.1	99.3	8.1	0.005
Rockville General Hospital	HF-3	75.0	96.9	21.9	0.020
St Francis Hospital & Medical Center	AMI-2	95.2	98.2	3.0	0.014
St Francis Hospital & Medical Center	AMI-5	92.0	96.0	3.9	0.012
St Francis Hospital & Medical Center	HF-2	91.6	94.7	3.1	0.032
St Francis Hospital & Medical Center	HF-3	70.0	85.1	15.1	0.000
St Francis Hospital & Medical Center	PN-2	11.5	45.8	34.2	0.000
St Francis Hospital & Medical Center	PN-5b	61.7	71.7	10.0	0.004
St Mary's Hospital	AMI-5	85.7	95.7	9.9	0.044
St Mary's Hospital	AMI-6	93.6	98.9	5.3	0.022
St Mary's Hospital	HF-2	83.1	91.3	8.2	0.007
St Mary's Hospital	PN-2	13.2	41.7	28.5	0.000
St Vincent's Medical Center	AMI-1	87.6	94.4	6.8	0.012
St Vincent's Medical Center	AMI-3	58.3	80.6	22.2	0.002
St Vincent's Medical Center	AMI-5	83.8	90.0	6.2	0.017
St Vincent's Medical Center	AMI-6	82.2	90.1	7.8	0.018
St Vincent's Medical Center	HF-2	73.6	87.8	14.2	0.000
St Vincent's Medical Center	PN-2	35.1	78.8	43.7	0.000
St Vincent's Medical Center	PN-5b	67.9	85.9	18.0	0.000
Stamford Hospital	HF-2	89.9	96.5	6.6	0.002
Stamford Hospital	HF-3	65.7	82.6	16.9	0.012
Stamford Hospital	PN-5b	69.4	78.6	9.1	0.012
Waterbury Hospital Health Center	HF-2	95.8	90.1	-5.8	0.027
Waterbury Hospital Health Center	PN-2	33.8	52.1	18.3	0.000
Waterbury Hospital Health Center	PN-5b	70.5	77.3	6.8	0.023
William W Backus Hospital	AMI-2	88.9	100.0	11.1	0.016
William W Backus Hospital	AMI-5	93.0	100.0	7.0	0.039
William W Backus Hospital	HF-3	85.7	98.6	12.9	0.013
Windham Comm Mem Hosp	PN-5b	53.9	63.4	9.6	0.048
Yale-New Haven Hospital	AMI-5	94.2	97.2	3.0	0.020
Yale-New Haven Hospital	HF-2	95.6	99.0	3.4	0.000
Yale-New Haven Hospital	HF-3	65.4	81.3	15.9	0.001
Yale-New Haven Hospital	PN-2	43.5	81.0	37.4	0.000

*2003 included data from the 3rd and 4th quarters only. Comparisons were excluded if fewer than 20 cases per hospital-measure were eligible during 2003 or 2004. Differences are significant if $p<0.05$.

# Measure	Description	# Measure	Description	# Measure	Description
AMI-1	Aspirin at Arrival	AMI-6	Beta Blocker at Arrival	PN-1	Oxygenation Assessment
AMI-2	Aspirin at Discharge	HF-2	LVF Assessment	PN-2	Pneumococcal Vaccination
AMI-3	ACEI for LVSD	HF-3	ACEI for LVSD	PN-5b	Antibiotic received within 4 hrs
AMI-5	Beta Blocker at Discharge				