CITY OF NEW YORK
OFFICE OF THE COMPTROLLER

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MANAGEMENT AUDIT

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Audit Report on the Health and Hospitals Corporation's Provision of Mammogram Services

ME10-094A

May 3, 2011

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THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
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NEW YORK, N.Y. 10007-2341

John C. Liu
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May 3, 2011

To the Residents of the City of New York

My office has audited the Health and Hospitals Corporation's (HHC's) provision of mammogram services. There are two types of mammograms: a routine screening mammogram and, in instances where a potential indication of breast cancer has been found, a more detailed diagnostic mammogram. We audit City services such as this to determine whether they are provided in a timely manner.

The audit concluded that some HHC facilities need to reduce the waiting time for screening mammography appointments. The audit also concluded that HHC needs to establish a timeliness standard for diagnostic mammography appointments to help ensure that patients receive this vital service in a timely manner.

The audit made four recommendations to HHC, including that it perform a comprehensive review of its screening services to ensure that all of its facilities can accommodate patients seeking screening mammograms within its waiting time guideline of 14 days and that it develop a written standard concerning patients' waiting time for receiving diagnostic mammograms ordered by their physicians.

The results of the audit have been discussed with HHC officials, and their comments have been considered in preparing this report. Their complete written response is attached to this report.

If you have any questions concerning this report, please e-mail my audit bureau at audit@Comptroller.nyc.gov.

Sincerely,

John C. Liu

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The City of New York
Office of the Comptroller
Management Audit

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ME10-094A

AUDIT REPORT IN BRIEF

This audit determined whether New York City Health and Hospitals Corporation (HHC) mammograms were scheduled, conducted, reviewed, and reported in a timely manner. The audit also determined whether the radiologists who interpreted the mammograms were licensed and whether HHC data is accurate on the percentage of women aged 40 to 70 who made a clinic visit to an HHC facility and also received a mammogram within the two-year period prior to the visit.

HHC serves City residents through its 11 acute care hospitals, four skilled nursing facilities, six diagnostic and treatment centers, and more than 80 community-based clinics. HHC provides comprehensive health services, such as medical, mental health, and substance abuse services, to all residents regardless of their ability to pay. HHC facilities have their own programs for cancer prevention, including mammogram services and other detection efforts, to diagnose cancers at an early stage when treatment is more effective and prognoses are more promising. There are two types of mammograms: a routine screening mammogram and, in instances where a lump or potential indication of breast cancer has been found, a more detailed diagnostic mammogram. During Fiscal Year 2009, 97,184 mammograms (both screening and diagnostic) were performed at 16 of the 17 HHC hospitals and diagnostic treatment centers. HHC reported in the Mayor's Management Report that in Fiscal Year 2009, 71 percent of the women aged 40 to 70 who made a primary care or women's health visit to an HHC facility had received a mammogram within the two-year period prior to the visit.

Audit Findings and Conclusions

Based on our sample review, HHC facility radiologists read and interpreted mammograms and communicated the results to patients in a timely manner. In addition, the radiologists who interpreted these mammograms were appropriately licensed.

However, some HHC facilities need to reduce the waiting time for screening mammography appointments. At three of the nine facilities we reviewed, the waiting time ranged from 41 days to 148 days, although the waiting time in the other six facilities was five

days or less. HHC has established a guideline of 14 days for the maximum amount of time patients should have to wait for the next available appointment for a screening mammogram. The long waiting times at these three facilities may discourage women from following up on their screening mammogram appointments. Studies have shown that women who have to wait a long time for their appointments are more likely to miss their screenings. Furthermore, HHC has not established a standard for the waiting time for diagnostic mammogram appointments. The average waiting time for diagnostic mammography appointments for Fiscal Year 2009 was about 16 days. In view of the fact that the earlier that a breast cancer patient receives treatment, the better it is for the prognosis, HHC needs to establish a standard for diagnostic mammography appointments to help ensure that patients are receiving this vital service in a timely manner.

In addition, in reference to the indicator concerning the percentage of women aged 40 to 70 who made a clinic visit to an HHC facility and also received a mammogram within the two-year period prior to the visit, a concern arose about whether HHC facilities consistently used the correct programming language in the calculation of this indicator. This concern raises questions about the accuracy of the indicator as it has been reported by HHC.

Audit Recommendations

To address the issues, the audit recommends, among other things, that HHC:

- Perform a comprehensive review of its screening services to ensure that all of its facilities can accommodate patients seeking screening mammograms within its waiting time guideline of 14 days. This review could include efficiency analyses, the identification of best practices, and a resource allocation study.

- Develop a written standard concerning patients' waiting time for receiving diagnostic mammograms ordered by their physicians.

- Ensure that all of its facilities use the correct programming language when calculating the indicator on the percentage of women aged 40 to 70 who made a clinic visit to an HHC facility and also received a mammogram within the two-year period prior to the visit.

Agency Response

In its response, HHC agreed with two of the audit's four recommendations and stated that it will review the other two recommendations for possible implementation.

INTRODUCTION

Background

The New York City Health and Hospitals Corporation (HHC) serves City residents through its 11 acute care hospitals, four skilled nursing facilities, six diagnostic and treatment centers, and more than 80 community-based clinics. HHC provides comprehensive health services, such as medical, mental health, and substance abuse services, to all residents regardless of their ability to pay.

Breast cancer is the second-leading cause of cancer deaths after lung cancer. Every woman is at risk, and the risk of breast cancer increases with age. According to the Centers for Disease Control and Prevention (CDC), approximately 94 percent of breast cancers are diagnosed in women 40 years of age and older. The National Cancer Institute (NCI) recommends that women 40 years of age and older have mammograms every one to two years. According to CDC, timely screening can reduce breast cancer mortality in women by 17 to 30 percent.

HHC facilities have their own programs for cancer prevention, including mammogram services and other detection efforts, to diagnose cancers at an early stage when treatment is more effective and prognoses are more promising.

When a patient visits an HHC facility or community-based clinic for the first time, the physician performs an assessment that involves a physical exam and an evaluation of the patient's personal and family medical histories. If the patient is a woman 40 years of age or older, the physician may refer the patient for a routine screening mammogram. If the physical breast exam reveals potential signs of breast cancer, the physician will refer the patient for a diagnostic mammogram.[1]

To create the patient referral, the physician generates a doctor's order using Quadramed, a computerized patient record system. A number of HHC facilities also schedule patient appointments by using the system's "next available appointment" feature that allows the physician, in conjunction with the patient and the facility's scheduling unit, to either schedule an appointment for a future date or, if there are any open slots, schedule a same-day appointment. HHC has established a guideline of 14 days for the maximum amount of time patients should have to wait for the next available appointment for a screening mammogram.

A radiologic technician conducts the mammogram exam and a radiologist reads and interprets the results. Many HHC facilities are equipped with the PenRad Management Information System (PenRad), which is used in the interpretation and reporting of mammograms.

[1] Diagnostic mammograms are detailed examinations that are conducted after a lump or other potential indication of breast cancer has been found, possibly on a screening mammogram. Signs of breast cancer may include pain, skin thickening, nipple discharge, or change in breast size or shape.

Mammogram results are forwarded to the patient's referring or primary care physician. This is generally done electronically through Quadramed. According to federal Mammography Quality Standards Act (MQSA) guidelines, if mammogram findings are normal, HHC facilities must send each patient a summary of the mammography report within 30 days of the mammogram exam. If mammogram findings are abnormal, the primary physician must notify the patient within 48 hours and ask the patient to come in for additional diagnostic services. For assessments that are "suspicious" or "highly suggestive of malignancy," the facility is required to make reasonable attempts to ensure that the results are communicated to the patient as soon as possible.

During Fiscal Year 2009, 97,184 screening and diagnostic mammograms were performed at 16 of the 17 HHC hospitals and diagnostic treatment centers.[2] HHC reported in the Mayor's Management Report that in Fiscal Year 2009, 71 percent of women aged 40 to 70 who made a primary care or women's health visit to an HHC facility received a mammogram within the two-year period prior to the visit.

Objective

The objectives of this audit were to determine whether HHC's mammograms are scheduled, conducted, reviewed, and reported in a timely manner; whether the radiologists who interpreted the mammograms were licensed; and whether HHC data is accurate on the percentage of women aged 40 to 70 who made a primary care or women's health visit to an HHC facility and received a mammogram within the two-year period prior to the visit.

Scope and Methodology

We conducted this performance audit in accordance with generally accepted government auditing standards. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives, except for our inability to obtain access to information compiled by HHC's Quality Assurance (QA) Committee related to the provision of mammography services, as disclosed in the following paragraphs. This data would have allowed us to more fully assess HHC's controls and could have provided insight into the reasons for the delays in HHC's mammogram services that we report. This audit was conducted in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, §93, of the New York City Charter.

During the course of this audit, HHC officials prohibited us from gaining access to information compiled by its QA Committee relating to the provision of mammography services. Mammography service information is gathered by each HHC facility and presented to HHC's central office and its Board of Directors through the QA Committee.

[2] Mammograms were not performed at one facility: the Renaissance Diagnostic and Treatment Center in Harlem.

HHC officials cited New York Public Health Law § 2805-m, which directs the hospitals and those involved in the QA process to maintain the confidentiality of QA information. HHC officials stated that the information we were requesting was protected by this law. According to HHC, the only entities authorized to have access to QA information are the New York State Department of Health and the Joint Commission on Accreditation of Healthcare Organizations (JCAHO).

HHC officials did provide certain data that they said was comparable to QA data. However, we were unable to verify whether the data provided to us was the same data that was submitted to the Board. This and other relevant QA information that we were unable to review could have provided us with insight into the reasons for the delays in HHC's mammogram services that we report and into any actions taken by HHC management to minimize those delays. This information also might have enabled us to provide HHC management with more detailed recommendations for reducing the noted delays.

The primary scope period covered by this audit was Fiscal Year 2009 (July 1, 2008, through June 30, 2009).

To gain an understanding of HHC policies, procedures, and practices for mammogram services, we interviewed HHC's Senior Executive staff, including the Executive Vice President/Corporate Chief Financial Officer, the Senior Vice President/Deputy Chief Medical Officer, the Senior Assistant Vice President of Clinical Affairs, the Senior Assistant Vice President of Community Health and Public Health Services, and the Chief Medical Informatics Officer. In addition, we conducted walk-throughs at five HHC facilities, including the Belvis Diagnostic and Treatment Center (Bronx), Coney Island Hospital (Brooklyn), Kings County Hospital (Brooklyn), Metropolitan Hospital (Manhattan), and Queens Hospital (Queens). At each of these facilities, we met with staff from the radiology and quality assurance departments, as well as with representatives from each facility's management information systems unit.

In addition, we reviewed the federal MQSA guidelines, which establish procedures for facilities that are Food and Drug Administration (FDA) approved to perform screening and diagnostic mammograms. We also reviewed the American College of Radiology Breast Imaging Reporting and Database System (BI-RADS), which is a quality assurance guide designed to standardize breast imaging reporting and facilitate outcome monitoring, as well as general guidelines set forth by the American Cancer Society (ACS) and NCI. Finally, we reviewed the written mammography policies and procedures for each HHC facility that performed mammograms.

To determine whether HHC facilities schedule and conduct mammograms in a timely manner, we reviewed HHC reports that showed the number of mammograms performed and the waiting time for mammogram appointments at each HHC facility during Fiscal Year 2009. We selected nine of the 16 facilities that performed mammograms and asked them to provide us with the next available dates for mammogram appointments as of the dates of our visits to those

facilities.[3] Of the nine facilities selected for review, four were randomly selected, four were judgmentally selected, and one facility (Queens Hospital) was selected by HHC for our initial walk-through visit. For five of the nine facilities,[4] we performed more detailed testing, which included a review of patient records[5]. Of the five facilities selected for detailed testing, four were randomly selected and one (Queens Hospital) was selected after it had been chosen by HHC for the initial walk-through. For these five facilities, we assessed the reliability of data generated from Quadramed and PenRad as part of our review of controls. PenRad was used by four of the five facilities[6] for interpreting and reporting the results of mammograms.

HHC provided lists of all mammograms performed during Fiscal Year 2009 at each of the five selected facilities. The lists were generated from Quadramed and showed the types of tests that were performed (screening or diagnostic), the dates that the mammograms were ordered, and the dates the exams took place. We examined the lists for consistency and accuracy. We randomly selected a sample of 270 patients who received mammograms at these five facilities during Fiscal Year 2009 and determined whether the information on the lists was consistent with patient records found on Quadramed and PenRad. Specifically, we determined whether order and exam dates on the lists were consistent with order and exam dates found in the two systems. To determine whether mammogram results were read and communicated to patients on a timely basis, we compared the dates of the 270 mammogram exams at the five facilities to the dates that the radiologists read the results and the dates that the results were communicated to the patients.

To determine whether interpreting radiologists had current licenses to practice medicine, we obtained the names and titles of all the radiologists who interpreted mammography results in Fiscal Year 2009 at the five facilities we visited. For each physician, we reviewed the online license verification database of the New York State Education Department's Office of Professions.

To gain an understanding of how HHC calculated the percentage of women aged 40 to 70 who made a primary care or women's health visit to an HHC facility and also received a mammogram during the two-year period prior to the visit, we met with HHC's Director of Corporate Planning Services and the Chief Informatics Officer. We also reviewed documentation, such as the HHC Monthly Corporate Dashboard Report, which provided certain information on the calculation process. In addition, we reviewed the accuracy of the programming language used to calculate this indicator in conjunction with a review of a Quadramed list showing the patients (represented by number identifiers assigned for the audit)

[3] We selected one facility in the Bronx, three facilities in Brooklyn, three in Manhattan, and two in Queens. Of the nine facilities, seven were hospitals and two were diagnostic and treatment centers.
[4] The five facilities selected were Belvis Diagnostic and Treatment Center, Coney Island Hospital, Kings County Hospital, Metropolitan Hospital, and Queens Hospital.
[5] HHC redacted the names of patients and other patient identification information from the patient records we reviewed. We tracked the patients by mutually agreed-upon number identifiers assigned to patients for purposes of the audit.
[6] Queens Hospital does not use PenRad.

who had a clinic visit to Queens Hospital in June 2009, the dates of these patients' clinic visits, and the dates of their mammograms, if any.

The results of the above tests, while not statistically projected to their respective populations, provided a reasonable basis for assessing HHC's internal controls relative to those aspects of the agency's provision of mammogram services that were reviewed by this audit.

Discussion of Audit Results

The matters in this report were discussed with HHC officials during and at the conclusion of this audit. A preliminary draft report was sent to HHC officials on February 24, 2011, and discussed at an exit conference held on March 10, 2011. On March 18, 2011, we submitted a draft report to HHC officials with a request for comments. We received a written response on April 8, 2011. In its response, HHC agreed with two of the audit's four recommendations and stated that it will review the other two recommendations for possible implementation.

The full text of the HHC response is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

Based on our sample review, HHC facility radiologists read and interpreted mammograms and communicated the results to patients in a timely manner. In addition, the radiologists who interpreted these mammograms were appropriately licensed.

However, some HHC facilities need to reduce the waiting time for screening mammography appointments. At three of the nine facilities we reviewed, the waiting time ranged from 41 days to 148 days, although the waiting time in the other six facilities was five days or less. HHC has established a guideline of 14 days for the maximum amount of time patients should have to wait for the next available appointment for a screening mammogram. The long waiting times at these three facilities may discourage women from following up on their screening mammogram appointments. Studies have shown that women who have to wait a long time for their appointments are more likely to miss their screenings. Furthermore, HHC has not established a standard for the waiting time for diagnostic mammogram appointments. The average waiting time for diagnostic mammography appointments for Fiscal Year 2009 was about 16 days. In view of the fact that the earlier that a breast cancer patient receives treatment, the better it is for the prognosis, HHC needs to establish a standard for diagnostic mammography appointments to help ensure that patients are receiving this vital service in a timely manner.

In addition, in reference to the indicator concerning the percentage of women aged 40 to 70 who made a clinic visit to an HHC facility and also received a mammogram within the two-year period prior to the visit, there is a question as to whether HHC facilities consistently used the correct programming language in the calculation of this indicator. Consequently, the accuracy of the indicator as it has been reported by HHC is also in question.

HHC Facilities Complied with Timeliness Standards for Reading and Interpreting Mammogram Results

In accordance with federal MQSA guidelines, HHC radiologists read and interpreted exam results in a timely manner in Fiscal Year 2009. Our review of the records for a sample of 270 patients at five selected facilities revealed that 99 percent of the exams were read and interpreted in a timely manner. In addition, 99 percent of the patients were notified of the results within 30 days of the exams, as required by U.S. Food and Drug Administration guidelines.

Radiologists are responsible for reading and interpreting mammography results and the facilities are responsible for communicating those results. According to U.S. Food and Drug Administration guidelines, each facility must prepare a written report of the results of each mammography examination performed. The mammography report must include the name of the patient, the date of the examination, the name of the radiologist who interpreted the mammogram, and the test results. In addition, facilities are required to send each patient a summary of the mammography report written in lay terms within 30 days of the mammographic examination. If assessments are “suspicious” or “highly suggestive of malignancy,” the facility

must make reasonable attempts to ensure that the results are communicated to the patient as soon as possible.

We found that 203 (99%) of the 205 screening mammograms we reviewed were read and interpreted by radiologists within 30 days. For one of the screening mammograms, it took 32 days for the radiologist to read and interpret the results, while for another mammogram it took 44 days. Additionally, all 65 (100%) of the diagnostic mammograms we reviewed were read and interpreted within 30 days. Facilities are required to send letters to patients to notify them of the test results. We obtained copies of these letters for all 270 patient records reviewed. For 27 (10%) of these cases, the supporting documentation did not indicate when the results were communicated to the patients. For 241 (99%) of the remaining 243 cases, mammogram results were communicated to the patients within 30 days of the exam, as required by the MQSA guidelines. For one of the screening mammograms, it took 32 days for the radiologist to communicate the results, while for another mammogram it took 47 days.

HHC Did Not Ensure Timely Screening Mammograms at Three Facilities

Six of the nine facilities we visited met HHC's guideline for patient wait time for screening mammograms. For these six facilities, the wait time for the next available appointments ranged from zero to five days. However, at the remaining three facilities, the wait times were considerably more than the 14-day target set by the HHC. For these facilities, the wait times ranged from 41 days at Woodhull to 148 days at Elmhurst. Table I below shows elapsed time from the date of our visit to the next available screening mammogram appointment for the nine facilities visited.

Table I
Elapsed Time from Date of Visit to Next Available Appointment at Nine HHC Facilities Visited

	Facility	Borough	Date of Visit	Date of Next Available Appointment	Elapsed Time in Days
1	Bellevue	Manhattan	8/25/2010	8/25/2010	0
2	Belvis	Bronx	6/9/2010	6/9/2010	0
3	Kings County	Brooklyn	6/24/2010	6/24/2010	0
4	Metropolitan	Manhattan	9/15/2010	9/15/2010	0
5	Coney Island	Brooklyn	7/6/2010	7/9/2010	3
6	Gouverneur	Manhattan	8/25/2010	8/30/2010	5
7	Woodhull	Brooklyn	8/26/2010	10/6/2010	41
8	Queens Hospital	Queens	7/20/2010	9/7/2010	49
9	Elmhurst	Queens	8/26/2010	1/21/2011	148

As shown in Table I, there was no wait time for next available appointments at Bellevue, Belvis, Kings County, and Metropolitan. At these facilities, patients could be screened the same

day they received their physician referrals for mammograms. Officials at these four facilities told us that they have adequate capacity in terms of their screening equipment, technicians, and radiologists to screen all patients who prefer to have their screening exams take place the same day that they obtain physician referrals for mammograms. At two other facilities—Coney Island and Gouverneur—the wait time was relatively short: three and five days, respectively.

However, at the remaining three facilities, the wait times for screening mammograms were well above the guideline set by HHC. HHC's guideline of 14 calendar days was exceeded by Queens, Elmhurst, and Woodhull Hospitals. These three facilities provided various reasons for the long wait times, as follows:

Queens Hospital

On July 20, 2010, we met with officials at Queens Hospital to determine their wait time for screening mammograms. Hospital officials provided documentation from their scheduling unit that showed that the next available appointment was September 7, 2010, a total of 49 calendar days from the date of our visit. This was considerably more than HHC's guideline of 14 days. Queens Hospital officials stated that due to many hospital closings in Queens, they are often overwhelmed with patients seeking their services. According to HHC data, Queens Hospital conducted the second largest number of mammograms (10,544) among HHC facilities during Fiscal Year 2009. As such, Queens officials stated that they do not have adequate capacity to accommodate patients and to meet HHC's performance guideline. Furthermore, Queens Hospital stated that budget cutbacks have also hindered their ability to provide screening mammograms within HHC's standard time frame.

Elmhurst Hospital

On August 26, 2010, we visited Elmhurst Hospital in Queens to determine their wait time for screening mammogram appointments. Hospital officials provided documentation from their scheduling unit that showed that the next available appointment was January 21, 2011, a total of 148 calendar days from the date of our visit. As with Queens Hospital, Elmhurst noted the high volume of patients they serve in Queens. According to HHC data, Elmhurst Hospital conducted the largest number of mammograms (11,425) among HHC facilities during Fiscal Year 2009. In addition, according to Elmhurst officials, because of budget cuts, the facility no longer provides evening or weekend screenings. However, the officials claimed that the actual waiting time in August 2010 was 45 days.

Elmhurst claimed that the next available appointment date that was automatically generated by Quadramed did not reflect the facility's actual capacity. According to Elmhurst officials, Quadramed is programmed for 50 patients per day, whereas the facility had enough capacity to accommodate at least 70 patients per day. The officials stated that they maintain a list of scheduled appointments and when they have reached 50 scheduled appointments, staff from the Scheduling Unit print the schedule and make hand-written additions to the list. Through an override feature, the additional appointments can then be added to the schedule in

Quadramed. The updated patient schedule list is printed and distributed to staff in the Radiology Department. Subsequent to our visit, we had several discussions with Elmhurst officials on this matter. On October 14 and 15, 2010, in an effort to support their position, hospital officials printed schedules (with patient names redacted) for October 15, 2010, through November 23, 2010. The schedules showed more than 70 patient appointments for each day in which screening mammograms were performed up until October 22, 2010, for which only 66 mammograms had been scheduled. The schedules, if accurate, indicate that as of October 14, the next available appointment was in eight days (on October 22), since Elmhurst officials claimed that they could accommodate at least 70 patients per day.

HHC's Women Health Initiative[7] Performance Indicator Report for Fiscal Year 2009, however, stated that the waiting time for screening mammograms at Elmhurst Hospital during this period averaged about 45 working days (or about 63 calendar days). This reported average waiting time, which was reported to HHC by Elmhurst based on Quadramed data, differs considerably from the October 14, 2010, waiting time of eight calendar days as reflected on Elmhurst's schedules for October 2010.

After the exit conference, Elmhurst officials provided us with scheduling reports showing the next available date for a screening mammogram at the facility as of March 11, 2011. These reports showed that the next available date would be April 1, 2011—a waiting period of 15 working days (or 21 calendar days). Furthermore, Elmhurst stated that they put a number of changes in place to decrease the waiting time for the next available appointment from 45 calendar days in August 2010 to 21 days in March 2011. These changes included the prompt removal of duplicate appointments from the schedule.

On a related matter, in discussing the waiting time issue with Elmhurst Hospital officials, the facility provided information showing the numbers of scheduled and completed mammograms during the month of July 2010. The data indicated that there had been a high number of no-shows. When we asked Elmhurst officials whether they contacted patients to remind them of upcoming appointments, they stated that they did not. Other facilities that we discussed this issue with stated that they do make reminder calls or send reminder letters. Such calls or letters are very important considering the fact that a screening mammogram appointment might be made weeks or months in advance. A study[8] available on the National Institutes of Health (NIH) website reported that:

> "Being too busy and forgetting to make or keep mammography appointments were commonly reported and associated with annual-interval use. These barriers have been among the most commonly-mentioned barriers since they were first

[7] The Women's Health Initiative (WHI) was established to address the most common causes of death, disability, and impaired quality of life in postmenopausal women. The WHI addresses cardiovascular disease, cancer, and osteoporosis.

[8] *Factors Associated with Annual-Interval Mammography for Women in Their 40s*, Jennifer M. Gierisch, PhD, MPH, et al., Author manuscript, NIH PubMed Central website (July 1, 2010): p. 5.

assessed. They underscore the importance of reminders in promoting regular screening."

Woodhull Hospital

On August 26, 2010, we visited Woodhull Hospital, which is located in Brooklyn. Hospital officials provided documentation from their scheduling unit that showed that the next available appointment was October 6, 2010, a total of 41 calendar days from the date of our visit and, 27 days beyond HHC's 14-day standard. Woodhull officials attributed the long wait time to several factors, including the loss of two full-time radiologists in December 2009 and January 2010, which led to the scheduling of fewer mammograms. In addition, officials cited an increase in diagnostic exams because of its conversion from analog screening equipment to digital screening equipment. Officials stated that the digital equipment identifies more potential indicators of breast cancer than the analog equipment did. The officials claimed that this resulted in a significant increase in diagnostic exams, which reduced the facility's capacity to handle routine screening mammograms. Furthermore, hospital officials stated that they have had to reduce the number of Saturday appointments due to budget cuts.

The long waiting times at these three facilities may discourage women from following up on their screening mammogram appointments. Women who have to wait a long time for their appointments are more likely to miss their screenings. A study in the *Journal of General Internal Medicine* found that women failed to keep about 25 percent of scheduled mammograms.[9] The waiting interval for mammogram appointments was cited as an important predictor of missed appointments, with long waiting times being associated with higher rates of missed appointments. HHC should perform a comprehensive review of its screening mammogram services to identify opportunities to improve timeliness.

At the exit conference, HHC officials told us that the 14-day guideline for screening mammography appointments was only an "improvement target" and not a performance standard that facilities had to strictly follow. The officials also told us that they believe that the 14-day target encourages HHC facilities to endeavor to meet a high standard. HHC officials stated that screening mammograms, although an important cancer-detection tool, are elective procedures that have less urgency than certain other procedures, such as diagnostic mammograms.

Recommendations

HHC should:

1. Perform a comprehensive review of its screening services to ensure that all of its facilities can accommodate patients seeking screening mammograms within its

[9] *Predictors of Failure to Attend Scheduled Mammography Appointments at a Public Teaching Hospital,* Karen Margolis, MD, MPH, et al., Journal of General Internal Medicine, Volume 8 (1993): pp. 602-605.

waiting time guideline of 14 days. This review could include efficiency analyses, the identification of best practices, and a resource allocation study.

HHC Response: "HHC is committed to the ongoing review and assessment of mammography screening services. On a quarterly basis, the Quality Assurance Committee of the Board of Directors (QAC) reviews the statistics for the Health and Hospitals Corporation's mammography screening services and compares the performance with our internal imposed 14-day target. Factors such as staffing, equipment and an increase in patient load are important factors the QAC considers in their review when facilities do not meet the HHC performance target. Our facilities will continue to be held to our target for performance, but we also realize the need to remain flexible when facilities have to respond to external factors beyond their control such as closures of area clinics, as in the case with our facilities located in Queens. It is important to note that HHC's 14-day target is aggressive when compared to the national standard of 30 days. HHC deemed it necessary to set an operational target for performance to guide our facilities, but would like to differentiate this 'performance target' from a 'guideline.'"

2. Ensure that its facilities call their patients to remind them of their scheduled appointments.

HHC Response: "Each of the HHC facilities will review the recommendation and determine if existing resources would allow for them to implement reminder calls within the scheduling process."

HHC Does Not Have a Measure to Evaluate Diagnostic Mammogram Waiting Times

As previously stated, diagnostic mammograms are used to check for breast cancer after a lump or other potential indication of breast cancer has been found, possibly on a screening mammogram. During diagnostic mammograms, more detailed pictures are taken to carefully study any areas of concern. Unlike what we found for screening mammograms, however, HHC does not have a written time standard for the maximum amount of time patients should have to wait for a diagnostic mammogram.

We reviewed HHC's Women Health Initiative Performance Indicator Report for Fiscal Year 2009 for the nine facilities we visited. The report, among other things, presents information on the average waiting times for obtaining diagnostic mammography appointments at the nine facilities, as shown in Table II below:

Table II
Waiting Time for Obtaining Appointments for Diagnostic Mammograms at Nine HHC Facilities Visited by Auditors
Fiscal Year 2009

	Facility	Average Waiting Time for Diagnostic Mammography Appointments (in Working Days)
1.	Elmhurst	50
2.	Woodhull	28
3.	Kings County	21
4.	Gouverneur	20
5.	Bellevue	17
6.	Coney Island	2
7.	Belvis	1
8.	Metropolitan	1
9.	Queens Hospital	1
	Average	**16**

As shown in Table II, at five of the nine facilities, the waiting times for obtaining diagnostic mammography appointments was 17 or more working days. However, there are no time standards for scheduling diagnostic mammography appointments. The absence of time standards results in there being no benchmark for HHC to use in gauging facility performance in this area. By not evaluating facility performance in conducting diagnostic mammograms, HHC is less likely to take steps to address excessive delays.

Officials at Queens Hospital, which had a higher than average waiting time for screening mammograms, told us that they place a high priority on conducting diagnostic mammograms in a very timely manner. HHC data indicate that during Fiscal Year 2009 Queens Hospital had among the shortest average waiting times among HHC facilities for providing this service.

At the exit conference, HHC officials stated that they would work on developing a performance improvement target for scheduling and conducting diagnostic mammograms in a timely manner.

In view of the fact that the earlier that a breast cancer patient receives treatment, the better it is for the prognosis, it is very important for HHC to ensure that the diagnostic mammograms that have been ordered by a physician are conducted in a timely manner.

Recommendation

HHC should:

3. Develop a written standard concerning patients' waiting time for receiving diagnostic mammograms ordered by their physicians.

HHC Response: "Currently, there is no clear national standard or requirement for diagnostic mammography. However, the Health and Hospitals Corporation would consider implementation of an operational target for performance to guide our facilities. The Quality Assurance Committee of the Board of Directors will review and assess possible targeted goals."

Percentage of Women Aged 40 to 70 Receiving Mammograms

Early detection of breast cancer with screening mammography can lead to treatment starting earlier in the course of the disease, possibly before it has spread. Results from randomized clinical trials and other studies show that screening mammography can help reduce the number of deaths from breast cancer among women aged 40 to 70. HHC has established an indicator to measure the percentage of all of the women in this age range who had a mammogram during the two years preceding their most recent medical and/or gynecological visit to an HHC facility. In Fiscal Year 2009, the target for this indicator was 70 percent; HHC reported that it achieved 71 percent.

To determine the percentage, HHC uses patient medical records in the Quadramed system and performs a query of key fields, including age and gender of the patient, name of the clinic the patient visited, date of the clinic visit, and date of the last mammogram. Using the system, HHC then determines whether the last mammogram was performed during the two-year period prior to the clinic visit. We reviewed the programming language created to calculate this indicator in conjunction with a review of a Quadramed list that shows the 3,000 patients (represented by number identifiers assigned for the audit) who made a clinic visit to Queens Hospital in June 2009, the dates of these patients' clinic visits, and the dates of their mammograms, if any. Although we concluded that the programming language created to calculate this indicator was appropriate, Queens Hospital did not consistently use this programming language in that it identified some mammograms that were performed after the dates of the patients' last clinic visit during the month. The list indicated that 178 mammograms took place after the dates of the patients' last clinic visit during the month. HHC subsequently gave us an updated list that corrected this inconsistency. As a result, the facility's percentage of women aged 40 to 70 who received mammograms within the two-year period prior to their June 2009 clinic visits was reduced slightly from 81 percent to 78 percent. HHC officials stated that the error occurred because Queens Hospital did not use the correct programming language when it generated the June 2009 list or when it provided the data to HHC for the calculation of the indicator. This raises questions as to whether other facilities consistently used the correct

programming language in the calculation of this indicator. As a result, we could not verify the accuracy of this indicator as it has been reported by HHC.

Recommendation

HHC should:

4. Ensure that all of its facilities use the correct programming language when calculating the percentage of women aged 40 to 70 who had a mammogram during the two years preceding their most recent medical and/or gynecological visit to an HHC facility.

HHC Response: "In FY 09, Queens and Elmhurst were the only two facilities that performed their programming locally. Programming for all other HHC facilities were performed by Corporate Information Services. Effective January 2011, Queens and Elmhurst no longer perform programming separately and Corporate Information Services has assumed responsibility. Therefore, identical queries will be used for Queens and Elmhurst as for the rest of the Corporation."

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Alan D. Aviles
President

April 8, 2011

Tina Kim
Deputy Comptroller for Audits
City of New York Office of the Comptroller
1 Centre Street, Room 1100
New York, New York 10007

RE: Audit Report – New York City Health and Hospitals Corporation's Provision of Mammogram Services ME10-094A

Dear Ms. Kim:

Thank you for the opportunity to respond to your draft audit report regarding the above subject.

As you know, HHC remains committed to achieve/surpass local and national performance for specific health interventions and efficient delivery of health services. As stated in the Mayor's Management Report for 2010, we are proud to report the percentage of eligible women age 40 to 70 receiving a mammogram increased from 71.0 percent at the end of Fiscal 2009 to 72.8 percent at the end of Fiscal 2010. HHC has invested in the latest technology, including digital mammography systems and stereotactic mammography equipment, to increase the number and quality of screenings to enhance breast cancer detection and reduce mortality. HHC is continuing its outreach efforts such as the "Give your Mother a Gift" mammogram campaign which offers mammograms at no cost to eligible patients during the month of May each year.

We were pleased that the audit found HHC facility radiologists read and interpreted mammograms and communicated results to patients in a timely manner. We also shared your concerns regarding the waiting time at three of our facilities, as referenced in your report, and are pleased to report the improvement in those services. We are in agreement with your recommendations and Attachment A provides a more detailed response to the audit findings/issues as outlined in the draft audit report.

If you have any questions regarding our response, please call Mr. Christopher Telano, Chief Internal Auditor/ Assistant Vice President, Office of Internal Audits, at 646-458-5623.

Sincerely,

Alan D. Aviles

C: Ramanathan Raju, MD, MBA, FACHE, Executive Vice President/Corporate Chief Operating Officer
Ross Wilson, MD, Senior Vice President/ Chief Medical Officer
Salvatore J. Russo, Esq., General Counsel, Legal Affairs
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LaRay Brown, Senior Vice President, Corporate Planning and Community Health
Ana Marengo, Senior Vice President, Communications & Marketing
Christopher Telano, Chief Internal Auditor/AVP, Office of Internal Audits

AUDIT COORDINATION AND REVIEW
AGENCY IMPLEMENTATION PLAN

ATTACHMENT A

PART A

Audit Title: **Audit Report on the Health and Hospital Corporation's Provision of Mammogram Services** Date: **April 8, 2011**
Audit Agency: **City of New York Office of the Comptroller**

Agency: **New York City Health and Hospitals Corporation** Draft Audit Report Date: **March 18, 2011**
Audit No: **ME10-094A**

RECOMMENDATION WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATE
Recommendation # 1 Perform a comprehensive review of its screening services to ensure that all of its facilities can accommodate patients seeking screening mammograms within its waiting time guideline of 14 days. This review could include efficiency analyses, the identification of best practices and a resource allocation study. (p.12)	HHC is committed to the ongoing review and assessment of mammography screening services. On a quarterly basis, the Quality Assurance Committee of the Board of Directors (QAC) reviews the statistics for the Health and Hospitals Corporation's mammography screening services and compares the performance with our internal imposed 14-day target. Factors such as staffing, equipment and an increase in patient load are important factors the QAC considers in their review when facilities do not meet the HHC performance target. Our facilities will continue to be held to our target for performance, but we also realize the need to remain flexible when facilities have to respond to external factors beyond their control such as closures of area clinics, as in the case with our facilities located in Queens. It is important to note that HHC's 14-day target is aggressive when compared to the national standard of 30 days. HHC deemed it necessary to set an operational target for performance to guide our facilities, but would like to differentiate this "performance target" from a "guideline".	Already implemented-Ongoing

AUDIT COORDINATION AND REVIEW
AGENCY IMPLEMENTATION PLAN

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PART A

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RECOMMENDATION WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATE
Recommendation # 2 Ensure that its facilities call their patients to remind them of their scheduled appointments. (p.12)	Each of the HHC facilities will review the recommendation and determine if existing resources would allow for them to implement reminder calls within the scheduling process.	June 2011
Recommendation # 3 Develop a written standard concerning patients' waiting time for receiving diagnostic mammograms ordered by their physicians. (p.14)	Currently, there is no clear national standard or requirement for diagnostic mammography. However, the Health and Hospitals Corporation would consider implementation of an operational target for performance to guide our facilities. The Quality Assurance Committee of the Board of Directors will review and assess possible targeted goals.	September 2011
Recommendation # 4 Ensure that all of its facilities use the correct programming language when calculating the percentage of women aged 40 to 70 who had a mammogram during the two years preceding their most recent medical and/or gynecological visit to an HHC facility. (p.15)	In FY 09, Queens and Elmhurst were the only two facilities that performed their programming locally. Programming for all other HHC facilities were performed by Corporate Information Services. Effective January 2011, Queens and Elmhurst no longer perform programming separately and Corporate Information Services has assumed responsibility. Therefore, identical queries will be used for Queens and Elmhurst as for the rest of the Corporation.	Already implemented-January 2011