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February 26, 1999

Mr. Luis R. Marcos, M.D.
President
New York City
Health and Hospitals Corporation
125 Worth Street - Suite 514
New York, New York 10013

Re: Actions to Address the
Year 2000 Challenge
Report 98-N-6

Dear President Marcos:

Pursuant to the State Comptroller's authority as set forth in Section 7384 (9) of the New York State Unconsolidated Laws, we have audited the New York City Health and Hospitals Corporation (HHC) Year 2000 compliance efforts for the period of April 1, 1996 through March 31, 1998.

A. Background

A major challenge facing government organizations today is the need to prepare their computer systems to handle dates beyond December 31, 1999 - otherwise known as the Year 2000 problem. Until recently, most computer programs had been designed to use two digits to designate the year; therefore they cannot determine the century. For example, a computer in the year 2000 might calculate that a person born in 1997 is 97 years old, rather than 3 years old. Left uncorrected, the fundamental operations of computer systems will fail or produce incorrect results.

The problem is imposing, as it encompasses all computer hardware from mainframes to personal computers (PCs) and all computerized programs and processes, including those developed by vendors, programming staff, and end-users. Ancillary equipment such as elevators, telephone-switching devices, MRI machines, and other medical diagnostic equipment may be subject to interruptions if a microprocessor or embedded computer code that is not Year 2000-compliant controls its functions. Moreover, the amount of time available to correct this problem is limited, because some systems must process Year 2000 dates well before December 31, 1999.

Faced with the risk that systems may not become Year 2000-compliant in a timely manner, management must ensure that the resources it devotes to correcting the problem are applied to the most important systems. Contingency plans must also be established to ensure that important services

and functions can continue if systems fail because of noncompliance with Year 2000 requirements.

HHC provides comprehensive medical services to New York City residents. Through eight decentralized health care networks, HHC operates 22 major medical facilities throughout New York City. These facilities consist of 11 acute care hospitals, 6 large community diagnostic and treatment centers, and 5 long-term care facilities. The networks also include various certified home health agencies, satellite clinics, hospital-based and neighborhood clinics, and a Health Maintenance Organization. The facilities provide services that range from immediate emergency room procedures (almost 1 million per year) and life-sustaining medical treatment to routine medical examinations. HHC's facilities employ more than 35,000 staff.

HHC's corporate central office manages three main computer systems; the Clinical Information System, the Revenue Management System, and the corporate Business System. The Clinical Information System is managed by the Medical and Professional Affairs Office and directly supports medical related functions at the facilities such as patient medical histories and laboratory results. The Revenue Management System is managed by the Revenue Management/Operations Division and controls patient admissions and billings. The corporate Business System is managed by HHC's Information Services Department (ISD) and consists of payroll, general ledger, and other business functions. ISD operates a mainframe data center, which processes the major systems used by the central office and facilities, and oversees the telecommunications and data communications systems of HHC. ISD is also responsible for management of computer equipment, including networks and individual PCs, at corporate headquarters.

While central office divisions manage these major systems and provide general support to the facilities, the day-to-day operation of the systems is the responsibility of each individual facility or care network. Care networks and facilities are also responsible for the management of their individual local information systems (minicomputers, PCs, networks, and terminals), as well as infrastructure equipment and medical equipment. Each care network has a Chief Information Officer who is responsible for oversight of information systems throughout the network's facilities.

The scope of the HHC computing environment and the importance of this environment to the functioning of the municipal health care system in New York City require a well-planned and well-executed approach to the Year 2000 problem. We believe that if HHC is to succeed, it needs to have the following elements of control:

- top management involvement to raise awareness of the problem and to define a policy and organizational approach for correction of the problem;
- development of an inventory of systems that need to be corrected;
- establishment of the time frames and resource requirements for correction efforts;
- creation of a command-and-control organizational structure to manage and accomplish correction of the problem; and

- establishment of procedures for the examination, modification, and testing of non-compliant systems and the implementation of corrected systems.

These elements of control are consistent with those recommended for large organizations by the United States General Accounting Office and the Gartner Group, a leading information technology consulting organization.

ISD started Year 2000 planning efforts for the HHC central office data center in the last quarter of 1996, when its vendors began to address the problem. ISD was aware that Year 2000 compliance efforts were needed, but could not determine what action to take until its hardware and software vendors had indicated whether their products would be compliant. This information is needed to determine which problem resolution options are available.

In January of 1997, in response to a request from New York City's Deputy Mayor for Operations, HHC appointed the ISD's Assistant Vice President as HHC's Liaison (Liaison) to the City's Year 2000 Project. As such, he is responsible for providing quarterly reports to the City Oversight Committee regarding HHC's progress in ensuring that all of its computer systems will be able to make the transition to the Year 2000. In addition, he reports Year 2000 progress to HHC executive management and to the Audit and Finance Committees of the HHC Board. The Liaison has instructed facility personnel that they are responsible for developing and implementing their own plans for achieving Year 2000 compliance. They must report their progress to the Liaison on a quarterly basis.

B. Audit Scope, Objective and Methodology

The scope of our performance audit includes HHC's agency-wide efforts to achieve Year 2000 compliance for its computer systems. Our objective is to assess whether HHC's efforts provide reasonable assurance that important computer processing will continue without material interruptions or inaccuracies caused by the Year 2000 problem. To accomplish this objective, we reviewed and evaluated the adequacy of HHC's actions during the period of April 1, 1996 through March 31, 1998, to solve the problem. In conducting our audit, we used guidelines and criteria developed by both the Gartner Group and the United States General Accounting Office (GAO).

We conducted our audit in accordance with generally accepted government auditing standards. Such standards require that we plan and perform our audit to adequately assess those operations which are included in our audit scope. Further, these standards require that we understand HHC's internal control structure and its compliance with those laws, rules and regulations that are relevant to the operations which are included in our audit scope. An audit includes examining, on a test basis, evidence supporting transactions reported in the accounting and operating records and applying such other auditing procedures as we consider necessary in the circumstances. An audit also includes assessing the estimates, judgments and decisions made by management. We believe that our audit provides a reasonable basis for our findings, conclusions and recommendations.

We use a risk-based approach to select activities for audit. Therefore, we focus our audit efforts on those activities we have identified through a preliminary survey as having the greatest probability for improvement. Consequently, by design, we use finite audit resources to identify where and how improvements can be made. We devote little audit effort to reviewing operations that may be relatively efficient or effective. As a result, we prepare our reports on an "exception basis." This report, therefore, highlights those areas needing improvement and does not address activities that may be functioning properly.

C. Results of Audit

HHC has not established the kind of agency-wide Year 2000 command-and-control organizational structure and operating philosophy that government and computing industry leaders have indicated would be appropriate to address all Year 2000 risks in a timely manner. HHC named the ISD Assistant Vice President as Year 2000 Project Liaison (Liaison) in January 1997. Although the Liaison has monitoring and reporting responsibilities, he has no dedicated Year 2000 project staff and no direct agency-wide authority over compliance work. Each office and hospital is responsible for making its systems compliant. In addition, HHC has not instituted an agency-wide Year 2000 awareness program. Consequently, the response to the challenge by some offices and hospitals has not been adequate. The decentralized nature of HHC's Year 2000 compliance efforts may increase the risk that certain critical functions will not be Year 2000-ready in a timely manner.

Specifically, HHC's efforts did not reasonably assure that the Clinical Information System functions performed at the medical facilities are going to continue to operate and produce correct results as the Year 2000 approaches. In addition, although HHC expects its Revenue Management System upgrade to be in place on time, we questioned whether it had addressed risks that payer systems would not be compliant. HHC's efforts did provide reasonable assurance for timely correction of Year 2000 issues in its mainframe corporate Business System applications. Continued efforts and attention to the weaknesses we identified during the examination should help ensure that the mission-critical mainframe applications are corrected in a timely manner.

We found that HHC's efforts regarding specialized medical equipment that operates with the use of embedded chips or computer programs do not provide reasonable assurance that the equipment is going to operate correctly at the medical facilities as the Year 2000 approaches. The Liaison's review of all facility plans (conducted in Spring 1998, subsequent to the completion of our audit field work) indicates that significant risks remain for noncompliant medical equipment that is used to support direct patient care needs.

HHC estimated in June 1998 that it would spend \$55 million to achieve Year 2000 compliance. However, this amount was based principally on estimates provided by the networks, which the Liaison has found to be significantly understated.

1. Executive Management Direction and Year 2000 Awareness

The accomplishment of an agency-wide Year 2000 initiative is best ensured when top management prepares and issues both a timely policy directive and a program charter that make it possible to broadcast and show formal support for resolution of the problem. In addition, top management can help to ensure timely correction by assigning a project director with authority to implement the project and establishing a steering committee that will review and endorse plans and strategies for achieving Year 2000 system compliance. Top management must also be provided with an accurate estimate of the costs of correcting the problem so that adequate attention can be paid to planning for the resources necessary to do the job. It is particularly important to promote agency-wide awareness of the Year 2000 problem and to provide a forum in which all stakeholders can communicate about efforts to resolve the problem and related difficulties.

The Year 2000 problem is a major concern of top management at HHC, and the HHC President and Board members have given the issue high priority. In January 1997, HHC's President wrote a letter to network Senior Vice Presidents and facility Executive Directors, informing them of the designation of the Year 2000 Liaison and the importance of the Year 2000 project. He asked them to cooperate in providing information and assistance the Liaison would be requesting, within certain time frames. However, no formal program charter was issued and no effort was made to create awareness among all employees and encourage their support and cooperation by "broadcasting" the President's sponsorship of the project agency-wide.

We found that the Year 2000 Liaison has become the driving force in ensuring that all critical operations in HHC are compliant. Although he is monitoring the project and reporting to upper management, he does not have the authority to make decisions over the entire scope of HHC's technology, as had been suggested by the New York City Year 2000 Project Office when it originally requested that HHC appoint a liaison. He must carry out his Year 2000 responsibilities as well as his regular role as an ISD Assistant Vice President. No dedicated Year 2000 corporate project team was established. HHC officials emphasize that their Year 2000 efforts are the responsibilities of many people at various levels within the decentralized organization.

In Spring 1998, the Liaison and HHC's Internal Auditor met with officials of each network to review network plans and progress and to make appropriate recommendations. The Liaison and the Internal Auditor found that the networks were far behind in their efforts and recommended that each network establish a Steering Committee/Task Force and a Project Manager for their Year 2000 efforts. The Liaison believes that continued meetings with network officials will result in satisfactory progress toward Year 2000 compliance. Although HHC operates as a decentralized agency, central management is ultimately responsible for assuring that the entire agency is Year 2000-compliant. We believe that HHC needs to take a more control-oriented approach if network efforts do not show sufficient progress.

HHC has not established a corporate-wide Year 2000 Steering Committee or Council to coordinate the agency-wide effort, determine priorities, resolve conflicts or share information.

Consequently, HHC has no designated multi-disciplinary committee or council within the agency to oversee and critique Year 2000 preparation efforts and ensure that all relevant functional areas are addressed. GAO guidelines recommend the establishment of such a group as an effective tool which could serve in fostering better communication and cooperation.

In addition, at a meeting held after our field work ended, the Liaison raised concerns about the ability of providers of critical supplies to continue operations in the Year 2000. He also raised concerns about his difficulties in obtaining compliance certifications from HHC's electric and telephone utility companies. These are critical issues that a Steering Committee could address and help resolve while the Liaison focuses on managing the project.

To promote awareness of the Year 2000 issue, the Liaison has made presentations to the HHC's Council of Executive Directors. He also addresses the Health Care Information Management and Systems Executive Council on a monthly basis in an effort to make them aware of the Year 2000 problem and to obtain their cooperation in developing appropriate equipment and software inventories. In addition, he has written to Chief Financial Officers and Information Services officials at the facility level to alert them to the problem, and his Spring 1998 meetings with network officials was also an attempt to increase awareness.

However, HHC has not undertaken an agency-wide awareness campaign to reach all HHC staff. Department and facility heads were not asked to make their staff aware of the impact of the Year 2000 until the Liaison's Spring 1998 review was completed. Management has not required that facilities report progress on awareness efforts back to the Liaison. Consequently, there is little assurance that such outreach efforts are resulting in the identification of all potential risks to HHC and its customers.

For example, when we initially discussed the problem with HHC's Legal Department officials, they advised us that they were not aware of any action they needed to take regarding the Year 2000. Subsequently, the Legal Department distributed a memo requiring the inclusion of specific Year 2000 compliance language in all future contracts; the Legal Department is now taking a more active role in compliance efforts.

Awareness efforts, which can be undertaken through newsletters, paycheck flyers, posters, and Internet sites, help raise the consciousness of everyone within the agency regarding the effort to identify and to resolve Year 2000 issues. In his meetings with network officials, the Liaison recommended that the networks increase awareness through newsletters, meetings and various communications from network senior vice-presidents. However, we continue to believe that an agency-wide awareness program initiated by HHC's upper management would be more effective at promoting Year 2000 knowledge among all employees.

As of June 1998, after our audit field work was completed, HHC estimated that its total cost of achieving Year 2000 compliance would be \$55 million. However, this estimate was based on reports from the eight networks, including three in which costs were substantially undervalued

according to the Liaison. In addition, six of the networks have not included in their budgets potential Year 2000 costs which have been estimated to total \$21.4 million. Officials from one network reported that they were not sure if their Year 2000 cost estimate of \$7 million had been included in their budget and officials of another network reported budgeting for just part of their estimated \$7.2 million in Year 2000 costs. As these examples demonstrate, HHC's overall estimate of costs related to the Year 2000 is subject to change and plans must be made to ensure that such costs are covered by operating and capital budgets. Officials informed us that HHC has obtained a \$500 million Community Health Partnership grant that will provide funding to facilities for investments in technology. They advised us that some of this funding can be used to upgrade computer equipment and make it Year 2000-compliant.

2. Inventories

The Year 2000 problem is not just an information technology problem; it is primarily a business problem. Correction of the problem starts with an inventory of all the software, hardware, and data exchange interfaces used within the organization to meet its business needs. This inventory then serves as a foundation for determining which systems have priority for correction and for assessing which systems require business continuity plans.

In March 1997, the Liaison asked the facilities to provide a comprehensive inventory of all of the local computer systems in use. In the following month, he asked them to provide an inventory of their infrastructure systems (elevators, generators, alarm systems, etc.) and specialized medical equipment (MRI, CAT Scans, laboratory equipment, etc.) that might need attention to become Year 2000-compliant. Each facility's executive management was required to certify the inventory and identify Year 2000 exposure and compliance activity with respect to the inventory items.

However, the Liaison has had difficulty getting the facilities to provide complete inventories with certifications in a timely manner. This may have occurred partly because he does not have direct authority over the central divisions, care networks, or facilities and he has had to seek active assistance from upper management to obtain the information he needs on a timely basis.

By the completion of our field work, the Liaison had obtained inventories from all of the major medical facilities. However, he concluded that the inventories may have been incomplete, and could have been improved. The management of two hospitals we visited informed us that they could not assure the accuracy and completeness of their inventories. One manager indicated that his facility was hiring a consultant to perform a complete inventory; another facility was considering the same step. This lack of assurance by the facilities had not been reflected in their certifications of the inventory sent to the Year 2000 Liaison. Ideally, correct inventory assessments should have already been completed at the time we visited and efforts to test, replace, or repair equipment and systems should have been well underway.

Our review of the inventories disclosed that all of HHC's major medical facilities are listed individually. However, all four of its corporate business locations, all 14 health centers, and one

diagnostic and treatment center are not listed, indicating the possibility that some Year 2000 exposures may have been overlooked. For example, there is no inventory of building equipment (elevators, alarms, etc.) for the building that contains the data center operations. HHC has correspondence from the building's management assuring that this equipment will be compliant.

The Liaison has used the inventories to monitor, assess and report Year 2000 progress to HHC's executive management and the New York City Oversight Committee. However, the inventories do not provide enough information to function as a useful monitoring and assessment tool. For example, they do not make it clear which core business processes are at risk, which internal or external data exchanges need to be corrected, or what testing methodology for corrected systems is needed. Moreover, the inventory items are listed on an exception-only basis; facilities and departments do not list items they believe are compliant. All items should be listed on the inventory so that an independent review can be made to assure that all of them are compliant.

The Liaison has been providing all facilities with copies of each inventory he receives. This procedure allows the opportunity for independent reviews and increases the chance that all potential items will be identified for inclusion on the inventories. Although it is useful to share inventory information, it may not allow the risks to be assessed in a timely manner.

3. Patient-Related Systems

The Revenue Management System and the Clinical Information System have significant impact on the operation of all HHC facilities.

Patient admitting and billing is managed through HHC's Revenue Management System, a proprietary, vendor-supplied system. This system manages patient intake and registration at all facilities, and handles the billing and accounts receivable for all medical services provided to HHC patients, including the billing of insurance companies and government agencies for covered services. This system and the management of its contract is managed by HHC's Revenue Management/Operations Division of the Finance Office. Because the existing system is not Year 2000-compliant, it is being replaced by a new version that has been certified compliant by the vendor who provides and maintains this system. Installation at all the facilities was expected to be completed by November 1998. The compliant version requires each HHC care network to purchase new hardware, an effort that will require continued monitoring by the Liaison.

HHC's Revenue Management System bills Medicare and other government and private organizations for medical services HHC provides. Because of the high volume of HHC's transactions, the billing is processed electronically. The United States General Accounting Office recently reported that the Federal Medicare payment system is not completely Year 2000-compliant. HHC has not addressed the possibility that this risk may delay the Medicare payments it expects to receive. The risk should be considered, and contingency plans should be made for it. HHC officials agree that this is a legitimate concern that has not been raised but needs to be discussed and evaluated.

After our field work was completed, the Liaison provided us with a copy of his recent review of the replacement plan for the Revenue Management System. This report disclosed several critical Year 2000 areas including planning, testing, documentation of effort, and contingency steps that need to be addressed more effectively as soon as possible.

The existing Clinical Information System (System) is a set of 15 vendor-supplied software packages, some of which provide direct support to various medical related functions at the facilities. These functions include patient medical histories, resource management, medication profiles, laboratory test results, test scheduling, patient classification, and data analysis. The Medical and Professional Affairs Office has overall responsibility for management of the vendors and the System, some parts of which are not yet compliant. Several of the components are being replaced by a new Health Care Information System that is considered Year 2000-compliant; others may need to be upgraded to become compliant.

Our review noted that there appears to be some confusion concerning the compliance status of components of the Clinical Information System. For example, the Medical and Professional Affairs Office reported that the Physician Credentialing System component, including its hardware and operating system, was compliant. However, our review of five hospital inventory reports found that four indicated this software was non-compliant and that two indicated the hardware and operating system were non-compliant. Our follow-up showed that the Medical and Professional Affairs Office reported the component as compliant because upgrades were available for purchase by the facilities. However, hospitals that had not purchased or had not installed the upgrade reported a non-compliant status. The status of all components of the Clinical Information System must be identified clearly to all affected parties so that they can plan accordingly to meet important processing needs.

At a meeting after our audit was completed, the Liaison provided a copy of his review of the Year 2000 plan for the Clinical Information System. This report discloses a concern that sufficient time and resources may not exist to remedy the numerous Year 2000 compliance exposures that currently exist with some of the System's components. The Liaison concluded that Medical and Professional Affairs should prepare an improved plan that would detail implementation schedules, identify resource requirements and provide for the close monitoring that are going to be needed to ensure the timely correction of the System.

4. Business System

The Business System consists of the Payroll, General Ledger, and other administrative applications. Maintenance and support of this system is the responsibility of the ISD. The Liaison has prioritized affected business processes within the central Business System and has developed a work plan for bringing the applications into compliance, including work assignments and due dates. ISD has employed in-house and consultant programmers to upgrade the program code for the Year 2000, an effort that is currently underway and is expected to be completed by the end of 1998.

Most guidance regarding Year 2000 efforts indicates that organizations need to prioritize their corrective efforts based on risks to core business services. Less significant systems and services would be handled later, or be covered by contingency plans. The Liaison expects all critical applications to be compliant in time if the current work plan is followed. Therefore, he believes there is no further need to set priorities or develop written contingency plans to cover potential problems. We believe that proper management of the Year 2000 problem requires the establishment of priorities and the design of contingency plans.

When HHC mainframe programs are changed, the changes are reviewed, tested, and approved by the Quality Assurance Unit (QA). We found that the Senior Director of the Quality Assurance Unit was not aware that the New York City Year 2000 Task Force was requiring agencies, including HHC, to ensure that all corrected systems could correctly process several specific dates associated with Year 2000 compliance. Therefore, QA had not initiated any policies or procedures to document and ensure that the necessary Year 2000 compliance testing was performed using these key dates. The Senior Director agreed that procedural requirements concerning the dates should be implemented within QA.

5. Infrastructure Devices and Medical Equipment

Infrastructure devices (e.g. elevator, heating, telephone, and alarm systems) and medical equipment may be controlled through computer programs or embedded chips (micro technology components that are embedded within a larger piece of equipment). These devices and equipment must be checked for Year 2000 compliance. For example, some of the equipment will shut down if it is unable to properly calculate the century while it is performing internal checking activities. Other equipment and medical devices may simply display the wrong year on a screen or diagnostic image. The Gartner Group predicts that more than 50,000,000 equipment items/devices will exhibit Year 2000 date anomalies. The challenge is determining which ones will have anomalies and, therefore, will require repairs, upgrades, or replacements.

Discovering problems related to embedded chips is much harder than discovering problems with software code, because there may not be either a visual display of date/time or specific documentation related to internal date functions. Generally, vendors must be contacted, either to provide assurance that the device/equipment is unaffected by the Year 2000 problem or to assist in diagnosing and correcting potential problems. Even then, critical equipment needs to be tested and monitored carefully.

Health care facilities such as HHC's depend on the reliable operation of both a variety of biomedical equipment that can record, process, analyze, display, or transmit medical data and diagnostic equipment such as computerized nuclear magnetic resonance imaging (MRI) systems, cardiac monitoring systems, cardiac defibrilators, and various tools for laboratory analysis. Such equipment may depend on a computer for calibration or for day-to-day operation. To avoid adverse affects on general safety and patient care, this equipment must all be checked and certified for Year 2000 compliance.

We found that HHC's efforts regarding infrastructure devices and medical equipment controlled with embedded chips or computer programs provides inadequate assurance that the operation of such equipment and devices at the medical facilities will be unaffected significantly by the Year 2000 problem. For example, some facilities are still not confident that all compliance risks have been identified for the equipment and devices in their environments. Although major concerns regarding the biomedical equipment at the hospitals have been expressed by the Liaison since March 1997, he still had concerns over the accuracy of inventories for the infrastructure devices and specialized medical equipment one year later. We found wide variances in the number of these items listed on the inventories of the various facilities. For example, one hospital listed less fewer than 20 items, while, in contrast, another listed almost 70 items. Most of the latter still had not been certified for compliance.

According to the Liaison's Spring 1998 review, none of the eight networks had a complete plan for ensuring timely Year 2000 compliance for their specialized medical equipment and infrastructure devices. In addition, officials at seven of the eight networks indicated that testing critical medical equipment may be a problem because of the significant number of devices presently identified. Moreover, the Liaison indicates that the cost of correcting infrastructure devices and medical equipment is very difficult to calculate because there are so many vendors and because the facility compliance efforts in this area have not been thoroughly assessed. These problems suggest that facility efforts to inventory their equipment, contact manufacturers, and perform necessary testing may be more efficient and effective with a coordinated approach. For example, the Federal Veteran's Health Administration has designated a team comprised of internal experts from a variety of fields to take the lead in reviewing information from medical equipment manufacturers and preparing a database of this information for all of their facilities. Without specific direction on how to address this complex problem, there is risk that HHC facility efforts regarding infrastructure devices and medical equipment may be ineffective or duplicated. This translates into a risk for failure of vital patient support and public and employee safety.

Recommendations

1. *Convey top management sponsorship of the corporate Year 2000 effort by issuing a policy directive and program charter explaining the approach, organizational structure, and responsibilities for the resolution of the Year 2000 problem.*
2. *Reinforce the Year 2000 efforts by establishing an awareness effort that seeks to involve HHC employees through newsletters and other corporate communications.*
3. *Continue Liaison's efforts to monitor Year 2000 correction activities by corporate central office units and Networks, ensuring that all significant risks are being addressed. Be prepared to take a more control-oriented approach if agency-wide project efforts under the current facilitative approach do not show sufficient progress. Develop contingency plans to provide services for systems where compliance may not be achieved in time.*

4. *Consider the need to develop a corporate-level steering committee or council to coordinate and support the agency-wide Year 2000 efforts.*
5. *Ensure that accurate Year 2000 cost estimates are available, budgeted for and planned appropriately.*
6. *Ensure that complete and accurate inventories are available showing the Year 2000 compliance status for all hardware, software, data interface, and technology-dependent equipment and devices.*
7. *Continue to monitor progress in the upgrading and testing of the Revenue Management System, including both equipment and software. Consider the potential risk of delays in medical bill payments and the need for contingency plans to address such a risk.*
8. *Ensure Clinical Information System inventories supplied by the facilities are reconciled with the Medical and Professional Affairs Office to ensure that compliance risks are reported consistently and accurately to management.*
9. *Ensure that Year 2000 plans for the Revenue Management System, the Clinical Information System, and the Business System are strengthened to address weaknesses and improvement opportunities identified in this report.*
10. *Provide Quality Assurance procedures for testing Year 2000 compliance with specific date fields that have been identified by the New York City Year 2000 Task Force.*
11. *Ensure that all Year 2000 compliance testing procedures, including those procedures specifically recommended by industry experts, are disseminated to appropriate staff, and that related test results are documented, reviewed, and certified.*
12. *Concentrate additional attention on identifying problematic infrastructure and specialized medical equipment that need Year 2000 correction. Consider using a coordinated, system-wide approach.*

A draft copy of this report was provided to HHC officials for their review and comment. Their comments have been considered in the preparation of this report and are included in Appendix A. HHC officials indicate that the Corporation has made significant strides in achieving Y2K goals since our audit fieldwork concluded. Officials indicate that they are confident that all reasonable, appropriate actions are being taken to limit the risk of severe disruption and to protect patients, visitors and staff. They point out that HHC has established a Y2K Steering Committee and has accelerated Y2K project reporting from a quarterly to a monthly basis.

Major milestones that HHC indicates have been achieved include vastly increasing the number of specialized medical equipment inventoried and identified, using consultants and requirements contracts for product testing, scheduling full compliance of business systems for the first quarter of

1999 and full compliance of revenue systems for the second quarter of 1999, and preparing clinical information systems for compliance by the second quarter of 1999. Officials also responded that HHC is actively participating in quarterly meetings with the Mayor's Office of Operations and in monthly meetings of the New York City Metropolitan Area Y2K Work Group. Through the Public Service Commission, the Corporation's Y2K Project Coordinator is reportedly working to attain assurances from public utilities that Y2K power and voice communications outages will not seriously disrupt HHC operations. HHC officials also state that facility contingency plans are currently under review by the Y2K Project Coordinator and the Steering Committee. In addition, HHC's Office of Internal Audit will continue to be auditing Y2K efforts of facilities.

HHC indicated general agreement with our specific recommendations and identified a number of steps that have been or are being taken to implement them. HHC's detailed response to these recommendations is presented in Appendix A. (See pp. A-10 through A-19)

Within 90 days after release of the final audit report, the President of the New York City Health and Hospitals Corporation should report to the State Comptroller, advising what steps were taken to implement the recommendations contained herein, and where not implemented, the reasons therefore.

Major contributors to this report were Robert Mehrhoff, Richard Perreault, James Thompson, and Kenneth Ramos.

We wish to thank the management and staff at the Health and Hospitals Corporation for the courtesies and cooperation extended to our auditors during this audit.

Very truly yours,

Jerry Barber
Audit Director

cc: Robert L. King
Alex Scoufaras
Arnold McCormick



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Luis R. Marcos, M.D.
President

January 25, 1999

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Alfred E. Smith State Office Building
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**Re: Actions to Address the Year 2000 Challenge
Report 98-N-6**

Dear Mr. Barber:

Thank you for the opportunity to respond to the draft audit report regarding the appropriateness and completeness of the Corporation's actions to address the Year 2000 (Y2K) challenge. Since your fieldwork concluded approximately one year ago, the Corporation has made significant strides in achieving our Y2K goals. Based on recent internal reviews, we are confident that all reasonable, appropriate actions are being taken to limit the risk of severe disruption and to protect our patients, visitors and staff. Since the audit exit conference on July 29, 1998, we have dramatically raised Y2K awareness throughout the Corporation and ensured that the Corporation's senior managers assure that all Y2K actions within their operations are identified and addressed.

We established a Y2K Steering Committee to monitor the progress and resolve any impediments as they relate to HHC's Y2K project. The Committee reports to HHC's Board of Directors and is chaired by the Senior Vice President of Finance. Other members of the committee include the Senior Vice President of Operations, General Counsel, a Hospital Network Senior Vice President, the Assistant Vice President of Information Services, and the Corporate Director of Internal Audits. We have also accelerated reporting to the Board of Directors, the Finance Committee, and to the Year 2000 Project Coordinator from a quarterly to a monthly basis.

Several major milestones achieved to date include:

- a vast increase in the number of specialized medical equipment inventoried and identified for Y2K remediation, including the cost of remediation.

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- the use of consultants, and requirements contracts to include product testing.
- business systems that are 90 percent tested and compliant. Full compliance is scheduled for the first quarter of 1999.
- revenue systems that are 70 percent tested and compliant. Full compliance is scheduled by the second quarter of 1999 ensuring there will not be an interruption in HHC's cash flow.
- several hardware and software installations/upgrades to prepare clinical information systems for compliance by the second quarter of 1999.

In addition, as an active participant in quarterly meetings with the Mayor's Office of Operations, monthly meetings of the New York City Metropolitan Area Y2K Work Group, and through the Public Service Commission, the Corporation's Y2K Project Coordinator is working to attain assurances from the public utilities that Y2K related power and voice communications outages will not seriously disrupt our operations.

Moreover, our facilities have submitted contingency plans to address these and other mission critical scenarios should they occur. These plans are currently under review by the Y2K Project Coordinator and the Steering Committee. The Corporation is also working with the New York City Office of Emergency Management for citywide Y2K contingency plans.

In the last quarter of 1998, the Office of Internal Audits, in conjunction with HHC's external auditor (KPMG Peat Marwick), audited several facilities for all aspects of the Y2K project, including awareness, project organization, project methodology, inventories, testing and documentation, and contingency planning. Their recommendations for corrective action and improvement have helped to make our process more efficient, and were used to guide the other facilities. The audits will be ongoing and will include follow up reviews.

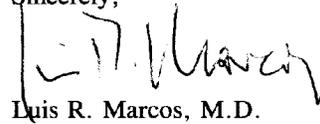
Though much has been accomplished, we will continue to work diligently to assure we minimize HHC's risk and exposure stemming from Y2K related problems and to have in place detailed contingency plans to address the Y2K problems should they transpire.

Attached (**Attachment A**) is the Corporation's detailed response and Audit Implementation Plan (**Attachment B**) which addresses the recommendations in your report.

Mr. Jerry Barber
January 25, 1999
Page 3

Should you have any questions concerning our response, please call Alex Scoufaras,
Corporate Director, Internal Audits, at 212-730-3123.

Sincerely,



Luis R. Marcos, M.D.

LRM:cg
Attachment

c: Frank J. Cirillo, Senior Vice President, Operations
Rick Langfelder, Senior Vice President, Finance & Capital/CFO
Elizabeth St. Clair, Esq., General Counsel
Arnold McCormick, Assistant Vice President, Information Services
Alex Scoufaras, Corporate Director, Internal Audits

NETWORK SENIOR VICE PRESIDENTS



NEW YORK CITY HEALTH AND HOSPITALS CORPORATION
125 Worth Street • Suite 514 • New York • New York 10013
212-788-3321 Fax: 212-788-0040

Luis Rojas Marcos, M.D.
President

TO: NETWORK SENIOR VICE PRESIDENTS
EXECUTIVE DIRECTORS

FROM: Luis R. Marcos, MD 

DATE: January 24, 1997

SUBJECT: CITYWIDE YEAR 2000 COMPLIANCE PROJECT

Please distribute the attached memorandum from Arnold McCormick Central Office/Assistant Vice President Information Services to your facility's senior Information Services executive.

I have designated Mr. McCormick to serve as the HHC Senior Liaison to the City of New York's Year 2000 Compliance Project. This project is under the immediate direction of Deputy Mayor Randy Mastro and is comprised of senior IS management personnel from all Mayoral and covered agencies. As a member of this project, Mr. McCormick will be responsible for presenting quarterly reports to the Oversight Committee regarding HHC's progress in insuring all its computer systems will be able to make the transition to the Year 2000 without operating problems. As you know, the potential for large scale computer system failures, mis-reporting, or other errors that may be caused by the inability of today's computer systems to effectively address the Year 2000 problem is considerable.

I don't have to remind you of the central role computers play in all our Corporate activities; clinical, business and administrative. We therefore must take every advance precaution and all preventive actions we can to insure our Corporate computer systems are protected against this potential problem.

Please instruct your staff to provide all requested information and assistance to Mr. McCormick within the timeframes specified. Mr. McCormick has also been directed to report to me an ongoing status of our Corporation's progress in this area.

Thank you for your assistance with this important matter.

LRM:mm
Attachment

NEW YORK CITY HEALTH AND HOSPITALS CORPORATION

230 West 41st Street • New York, New York 10036

Maxine Katz
Assistant Vice President
Revenue Management/Operations

MEMORANDUM

DATE: January 15, 1999
TO: Alex Scoufaras
Internal Audits
FROM: Maxine Katz MK
SUBJECT: RESPONSE TO THE NEW YORK STATE COMPTROLLER'S OFFICE
YEAR 2000 AUDIT

Revenue Management continues to work with SMS, Billing and fiscal Intermediaries to insure full Year 2000 compliancy. SMS and Revenue Management are performing application testing for Y2K compliancy to insure that documented results by SMS are accurate. We are gathering hardware compliancy documentation directly from the Original Equipment Manufacturers and SMS to validate operating systems and version level compliance. In instances where the OEM has specified their product to be Y2K compliant only when used with certain OS version, we are working with SMS to guarantee that they install the required releases.

SMS has received ITA certification that their systems are Y2K compliant and that their processes to ensure compliancy are accurate.

Revenue Management is currently developing a contingency plan if systems should fail on January 1, 2000. SMS has also developed a contingency plan should they experience any systems problems related to Y2K.

MK/sas

cc: R. Langfelder
R. Minott
A. McCormick

wp|maxine@respnys.com

RECEIVED
INTERNAL AUDITING
JAN 15 PM 1:27
NEW YORK CITY HEALTH AND HOSPITALS CORPORATION



NEW YORK CITY HEALTH AND HOSPITALS CORPORATION

230 West 41st Street • Room 411 • New York, New York 10036
212-730-3441 • Fax: 212-730-3452

ARNOLD J. MCCORMICK
Assistant Vice President, IS

TO: Alex Scoufaras
Director, Internal Audits

FROM: Arnold J. McCormick

DATE: January 11, 1999

SUBJECT: **THE NEW YORK STATE COMPTROLLER'S OFFICE AUDIT
REGARDING HHC'S ACTIONS TO ADDRESS
THE YEAR 2000 CHALLENGE**

As you requested in your January 7 memorandum to me, I have prepared the following responses to each of the recommendations made in the subject report.

1. Completed.
Dr. Marcos' memorandum dated January 24, 1997 re: Citywide Year 2000 Compliance Project (copy attached), established senior Corporate management sponsorship for addressing the Year 2000 problem, appointed a Corporate coordinator for the compliance effort and assigned the responsibility for resolving the problem to the memorandum's recipients: the Network Senior Vice Presidents, the Senior Vice President/Finance (Business and Revenue Systems) and the Senior Vice President/Medical and Professional Affairs (Clinical Information Systems).

Further, the HHC Finance and Audit Committees have regularly scheduled Year 2K status presentations and all Network Senior Vice Presidents personally presented their Network Y2K readiness status to the Corporation President and to the Finance Committee during the period September - December 1998.
2. Completed.
During the March 1998 Year 2K Plan reviews, several HHC Networks stated they had active Year 2K employee awareness programs in place. These awareness programs included on-site meetings, newsletters, posters, and personal computer screen savers showing a countdown clock to the Year 2000. Networks that did not have an employee Year 2K awareness program were encouraged to do so.
3. Underway.
 - a) Monitoring: Quarterly reporting of Year 2K compliance progress to Central Office was accelerated to monthly reporting in September 1998. Quarterly reporting of Corporate Year 2K compliance status and progress to the Finance Committee was accelerated to monthly reporting beginning in January 1999.

b) Contingency Planning: Draft Year 2K Business Continuity Contingency Plans (Plans) have been prepared by the Networks. The Plans are currently under review. A copy of each Plan was distributed to each Network for their use in identifying missing Plan components and for adopting best practice strategies. Final HHC Business Continuity Contingency Plans are expected by the 2QCY99.

Additionally, HHC is participating with the NYC Office of Emergency Management (OEM) in the development of a Corporate Business Continuity Contingency Plan for patient care services. This Plan will be prepared according to OEM standards.

Lastly, HHC is also participating in a multi-state Public Health and Safety Year 2K Planning Task Force and with the GNYHA Year 2K Workgroup. Opportunities for Plan improvements discovered during our participation with any of these workgroups will be incorporated into HHC's Plans.

4. Completed.
A Corporate Executive Steering Committee, comprised of the Senior Vice Presidents for Finance and Operations, the Corporate General Counsel and a Senior Network Vice President has been formed. Senior Network Vice Presidents and Corporate Business, Revenue Management, and Clinical Information Systems Year 2K Project managers will be required to report their Year 2K status and progress to the Committee on a regular basis.
5. Underway.
The need for more precise Year 2K cost information has been stressed to Network Senior Vice Presidents and to Chief Financial Officers on several occasions. Networks were also directed to budget Year 2K compliance funds from their operating budgets and not to assume additional funding from any external source would be made. The cost and budgeting requirements were formalized during the March and September 1998 Year 2K Plan reviews held with each Network and reported to each Network Senior Vice President.
6. Underway.
Corporate embedded chip equipment information and systems inventories are continually being refined. Inventories reported by each Network have been computerized, consolidated into a Corporate inventory, and distributed to each Network. In addition, the detail Year 2K Plan reviews conducted in March and September 1998 also included a discussion of each Network's specialized medical equipment/infrastructure inventory as measured against the consolidated Corporate inventory.
7. Revenue Management needs to respond to this issue.
8. Clinical Information Systems needs to respond to this issue.

9. Underway.
The NYS Comptroller recommendations identified in the subject audit have been, or are in process of, being adopted.
10. Completed.
Year 2K compliance testing certification is now part of the Quality Assurance application program turnover process for all Business Systems.
11. Completed.
HHC has adopted the New York City Year 2K compliance testing guidelines for all its information systems and embedded chip equipment. Field audit testing currently underway is assuring all testing is completed and documented according to the established testing guidelines.
12. Underway.
Attention for the resolution of Year 2K problems related to specialized medical equipment and infrastructure systems has been elevated to the highest Corporate levels (i.e. Corporate Executive Steering Committee). Further, the Corporation has entered into contracts with several specialized medical equipment (SME) testing firms to assist the Networks with their SME Year 2K compliance testing. Services contracts for obtaining high level project management and contingency planning support were recently placed to competitive bid and will be awarded shortly. Both of these initiatives were undertaken to assist the Networks in addressing their SME and information systems Year 2K exposures.

Please telephone me at 730-3441 if you have any questions or require additional information.

cc: F. Cirillo
R. Langfelder

MAYOR'S OFFICE OF OPERATIONS
 AUDIT COORDINATION AND REVIEW
 AUDIT IMPLEMENTATION PLAN

ATTACHMENT B PART A
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Date: 1/25/99

Audit Agency: NYS COMPTROLLER

Agency: NYC Health and Hospitals Corporation

Audit Date: 4/96 - 3/98

Audit Number: 98-N-6

OIA Control # 98-07

RECOMMENDATIONS WITH WHICH THE AGENCY AGREES
 AND INTENDS TO IMPLEMENT.

METHODS/PROCEDURES

IMPLEMENTATION
 TARGET DATES

PROGRAM IMPROVEMENTS/DOLLAR
 SAVINGS/INCREASED REVENUE
 WITH TIME TABLE.

Page 12, Recommendation 1

Convey top management sponsorship of the Corporate Year 2000 effort by issuing a policy directive and program charter explaining the approach, organizational structure, and responsibilities for the resolution of the Year 2000 problem.

Dr. Marcos' memorandum dated January 24, 1997 re: Citywide Year 2000 Compliance Project established senior Corporate management sponsorship for addressing the Year 2000 problem, appointed a Corporate coordinator for the compliance effort and assigned the responsibility for resolving the problem to the memorandum's recipients: the Network Senior Vice Presidents, the Senior Vice President/Finance (Business and Revenue Systems) and the Senior Vice President/Medical and Professional Affairs (Clinical Information Systems).

Completed.

Participation and involvement of top management assuring continued progress and expedited remediation efforts.

Further, the HHC Finance and Audit Committee have regularly scheduled Year 2K status presentations and all Network Senior Vice Presidents personally presented their Network 2YK readiness status to the Corporation President and to the Finance Committee during the period September - December 1998.

On-going.

Continued updates allow for better planning and continued progress.

MAYOR'S OFFICE OF OPERATIONS
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ATTACHMENT B PART A
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Agency: NYC Health and Hospitals Corporation

Audit Date: 4/96 - 3/98

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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES
 AND INTENDS TO IMPLEMENT.

METHODS/PROCEDURES

IMPLEMENTATION
 TARGET DATES

PROGRAM IMPROVEMENTS/DOLLAR
 SAVINGS/INCREASED REVENUE
 WITH TIME TABLE.

Page 12, Recommendation 2

Reinforce the Year 2000 efforts by establishing an awareness effort that seeks to involve HHC employees through newsletters and other corporate communications.

During the March 1998 Year 2K reviews, several HHC Networks stated they had active Year 2K employees awareness programs in place. These awareness programs included on-site meetings, newsletters, posters, and personal computer screen savers showing a countdown clock to the Year 2000. Networks that did not have an employee Year 2K awareness program were encouraged to do so.

On-going.

Creates complete awareness throughout the Corporation and includes all levels of staff in all departments.

Page 12, Recommendation 3

Continue Liaison's efforts to monitor Year 2000 correction activities by corporate central office units and Networks ensuring that all significant risks are being addressed. Be prepared to take more control-oriented approach if agency-wide project efforts under the current facilitative approach do not show sufficient progress. Develop contingency plans to provide services for systems where compliance may not be achieved in time.

Quarterly reporting of Year 2K compliance programs to Central Office was accelerated to monthly reporting in September 1998. Quarterly reporting of Corporate Year 2K compliance status and progress to the Finance Committee was accelerated to monthly reporting beginning in January 1999.

HHC can address any Y2K issues sooner and more efficiently.

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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
<u>Page 12, Recommendation 3</u> (cont'd)	<p>Draft Year 2K Business Contingency Plans (Plans) have been prepared by the Networks. The Plans are currently under review. A copy of each Plan was distributed to each Network for their use in identifying missing plan components and for adopting best practice strategies. Final HHC Business Continuity Contingency Plans are expected by the 2QCY99.</p> <p>HHC is participating with the NYC Office of Emergency Management (OEM) in the development of a Corporate Business Continuity Contingency Plan for patient care services. This Plan will be prepared according to OEM standards.</p> <p>HHC is also participating in a multi-state Public Health and Safety Year 2K Planning Task Force and with the GNYHA Year 2K Workgroup. Opportunities for Plan improvements discovered during our participation with any of these workgroups will be incorporated into HHC's Plans.</p>	2QCY99	Will ensure complete and comprehensive contingency plans.

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OIA Control 98-07

RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
<p><u>Page 12, Recommendation 4</u></p> <p>Consider the need to develop a corporate-level steering committee or council to coordinate and support the agency-wide Year 2000 efforts.</p>	<p>A Corporate Executive Steering Committee, comprised of the Senior Vice Presidents for Finance and Operations, the Corporate General Counsel and a Senior Network Vice President has been formed. Senior Network Vice Presidents and Corporate Business, Revenue Management, and Clinical Information Systems Year 2K Project managers will be required to report their Year 2K status and progress to the Committee on a regular basis.</p>	<p>Completed.</p>	<p>Authoritative body to ensure problems are resolved & deadlines are met.</p>
<p><u>Page 12, Recommendation 5</u></p> <p>Ensure that accurate Year 2000 cost estimates are available, budgeted for and planned appropriately.</p>	<p>The need for more precise Year 2K cost information has been stressed to Network Senior Vice Presidents and to Chief Financial Officers on several occasions. Networks were also directed to budget Year 2K compliance funds from their operating budgets and not to assume additional funding from any external source would be made. The cost and budgeting requirements were formalized during the March and Sep-</p>	<p>2QCY99</p>	<p>Ensure appropriate resources are allocated to this project.</p>

MAYOR'S OFFICE OF OPERATIONS
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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
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Page 12, Recommendation 5 (cont'd)

tember 1998 Year 2K Plan reviews held with each Network and reported to each Network Senior Vice President.

Page 12, Recommendation 6

Ensure that complete and accurate inventories are available showing the Year 2000 compliance status for all hardware, software, data interface, and technology-dependent equipment and devices.

Corporate embedded chip equipment information and systems inventories are continually being refined. Inventories reported by each Network have been computerized, consolidated into a Corporate inventory, and distributed to each Network. In addition, the detail Year 2K Plan reviews conducted in March and September 1998 also included a discussion of each Network's specialized medical equipment/infrastructure inventory as measured against the consolidated Corporate inventory.

On-going.

Ensure complete and accurate inventory at each facility.

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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
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Page 12, Recommendation 7

<p>Continue to monitor progress in the upgrading and testing of the Revenue Management System, including both equipment and software. Consider the potential risk of delays in medical bills payments and the need for contingency plans to address such a risk.</p>	<p>Revenue Management continues to work with SMS, billing and fiscal intermediaries to insure full Year 2000 compliancy. SMS and Revenue Management are performing application testing for Y2K compliancy to insure that documented results by SMS are accurate. We are gathering hardware compliancy documentation directly from the Original Equipment Manufacturers and SMS to validate operating systems and version level compliance. In instances where the OEM has specified their product to be Y2K compliant only when used with certain OS version, we are working with SMS to guarantee that they install the required releases.</p> <p>SMS has received ITA certification that their systems are Y2K compliant and that their processes to ensure compliancy are accurate.</p>	<p>On-going.</p>	<p>Ensure compliance of SMS and uninterrupted patient billings and cash flow for HHC.</p>
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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
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Page 12, Recommendation 7 (cont'd)

Revenue Management is currently developing a contingency plan if systems should fail on January 1, 2000. SMS has also developed a contingency plan should they experience any systems problems related to Y2K.

Page 12, Recommendation 8

Ensure that Clinical Information System inventories supplied by the facilities are reconciled with the Medical and Professional Affairs to ensure that compliance risks are reported consistently and accurately to management.

The Clinical Information Systems Division and the facilities work closely to monitor the Y2K compliance of clinical information systems. The status and ongoing activities relating to clinical information systems are reported monthly to the Information Systems (IS) Directors in the Corporation, specifically focusing on Y2K efforts. This is done either through the regularly scheduled monthly IS Directors meetings or through written correspondence. Throughout the implementation, upgrading and testing stages of the Y2K proj-

On-going.

Ensure progress and issues are resolved.

MAYOR'S OFFICE OF OPERATIONS
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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
<u>Page 12, Recommendation 8</u> (cont'd)	ects, there is extensive interaction with the facilities. To ensure consistency in reporting, Clinical Information Systems will be reviewing submissions to management from the facilities to ascertain if there are any discrepancies and to resolve them.		
<u>Page 12, Recommendation 9</u>	Ensure that Year 2000 plans for the Revenue Management System, the Clinical Information System, and the Business System are strengthened to address weaknesses and improvement opportunities identified in this report.	The NYS Comptroller recommendation identified in the subject audit have been, or are in process of, being adopted.	Underway.

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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
<u>Page 12, Recommendation 10</u>			
Provide Quality Assurance procedures for testing Year 2000 compliance with specific data fields that have been identified by the New York City Year 2000 Task Force.	Y2K compliance testing certification is now part of the Quality Assurance application program turnover process for all Business Systems.	Completed.	
<u>Page 12, Recommendation 11</u>			
Ensure that all Year 2000 compliance testing procedures, including those procedures specifically recommended by industry experts, are disseminated to appropriate staff, and that related test results are documented, reviewed and certified.	HHC has adopted the New York City Year 2K compliance testing guidelines for all its information systems and embedded chip equipment. Field audit testing currently underway is assuring all testing is completed and documented according to the established testing guidelines.	Completed/On-going.	Ensure continuity and completeness of Y2K testing.

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RECOMMENDATIONS WITH WHICH THE AGENCY AGREES AND INTENDS TO IMPLEMENT.	METHODS/PROCEDURES	IMPLEMENTATION TARGET DATES	PROGRAM IMPROVEMENTS/DOLLAR SAVINGS/INCREASED REVENUE WITH TIME TABLE.
<p><u>Page 12, Recommendation 12</u></p> <p>Concentrate additional attention on identifying problematic infrastructure and specialized medical equipment that need Year 2000 correction. Consider using a coordinated system-wide approach.</p>	<p>Attention for the resolution of Year 2K problems related to specialized medical equipment and infrastructure systems have been elevated to the highest Corporate levels (i.e Corporate Executive Steering Committee). Further, the Corporation has entered into contracts with several specialized medical equipment (SME) testing firms to assist the Networks with their SMS Year 2K compliance testing. Services contracts for obtaining high level project, management and contingency planning support were recently placed to competitive bid and will be awarded shortly. Both of these initiatives were undertaken to assist the Networks in addressing their SME and information systems Year 2K exposures.</p>	<p>On-going.</p>	<p>Ensure complete and detailed testing of Y2K sensitive equipment and infrastructure.</p>