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October 20, 1999

Dr. Shirley Strum Kenny
President
State University of New York
at Stony Brook
Stony Brook, NY 11794-0701

Re: Report 99-Y-36

Dear Dr. Kenny:

To assist in your oversight of the State University of New York (SUNY) at Stony Brook's Health Science Center's (HSC) Year 2000 compliance progress, we reviewed selected steps being taken by the HSC as of September 28, 1999, to make the Hospital Information System, Patient Accounting System, Pharmacy System (and related purchasing/inventory systems) and bio-medical devices and equipment Year 2000 compliant. These three systems and some of the bio-medical equipment are considered critical to HSC operations.

The Hospital Information System maintains patient demographic, insurance and financial data, as well as physician data, diagnosis, procedures, and orders. The System interfaces with medical records, patient tracking, the Pharmacy System and some bio-medical equipment. The Patient Accounting System maintains the patients' accounts and insurance information and bills the patients and third parties. The Pharmacy System (Meta) accepts patient orders and issues charges. Two related systems, the in-house On-line Purchasing, Encumbrance and Reporting System and the Materials Management Control System, are used to purchase pharmacy drugs and maintain the pharmacy inventory. The HSC has identified 8,016 items of bio-medical equipment providing critical patient care including nuclear medicine, radiology, ultrasound, and lab equipment.

The steps we selected for review pertained to Year 2000 project planning and management, Year 2000 system testing, identification and correction of system data exchanges, and the establishment of contingency plans for continuing important business and service functions in the event of a Year 2000-related failure.

The objective of our review was to assess whether the SUNY at Stony Brook HSC appears to be taking the necessary steps to address Year 2000 problems related to the HSC's Hospital Information System, Patient Accounting System, Pharmacy System and medical devices and equipment. To complete our review we interviewed HSC personnel and we reviewed HSC documents. Based on these interviews and documents we completed a Year 2000 questionnaire (see attached Tables) to assess specific Year 2000 issues. Unlike an audit, a review does not include testing or verification of information and records provided by HSC and does not include a review of internal controls. Therefore, we cannot conclude whether the systems and equipment reviewed are or will be Year 2000 compliant in a timely manner.

The results of our review show that SUNY at Stony Brook HSC is taking many of the steps necessary to address Year 2000 problems related to the Patient Accounting System, Hospital Information System, Pharmacy System and medical devices and equipment. For example:

- The HSC has an agency-wide Year 2000 plan and time-line, individual system work-plans, a Year 2000 compliance definition, a Year 2000 task force and a steering committee monitoring progress. Outside consultants were hired to work with the task force on the project. Data exchanges are identified and included in testing.
- The three in-house legacy systems Hospital Information System, Patient Accounting System, and the main Pharmacy System are being replaced by Year 2000 compliant systems purchased from a vendor, Shared Medical Systems Inc. (SMS). The purchasing and inventory components related to the Pharmacy System (the On-line Purchasing, Encumbrance and Reporting System and Materials Management Control System) are also being replaced by a Year 2000 compliant accounting system purchased from a second vendor, Lawson Inc. The accounting system went live in July 1999 and the SMS systems are expected to go live in November 1999 (original scheduled date was April 1999).
- The bio-medical equipment was inventoried, analyzed, and prioritized. Vendors were contacted for compliance statements. Equipment that cannot be certified compliant will be replaced. All equipment was expected to be compliant by the end of September 1999. One major exception is the Physiological Data Monitoring System (1,688 devices). Compliance statements have been obtained for the components, but not for the System as a whole (only verbal assurances). Officials consider this System conditionally compliant, but have advised us that a contingency plan will need to be developed for this System.

We also observed the following regarding the Year 2000 compliance efforts:

- Separate Year 2000 test plans for the systems provided by the vendor, Shared Medical Systems Inc. had not yet been developed.
- Testing of bio-medical equipment to verify Year 2000 compliance has not been performed, except where upgrade or maintenance was required to make the device compliant. This is because HSC is concerned about damaging the equipment and losing vendor warranties.
- Contingency plan goals run late in the year, and are already behind schedule. The HSC has adopted the American Hospital Association provided "Y2K Contingency Planning Workbook" as the core for risk mitigation and contingency planning. They expect to have a final draft of the contingency plan by December 1999.

Major contributors to this review were Robert Mehrhoff, Richard Perreault and Marc Geller.

Your comments to this review are welcomed. We wish to express our appreciation to the management and staff of the State University of New York at Stony Brook HSC for the courtesies and cooperation extended to our auditors during this review, and hope that it is helpful to your Year 2000 monitoring and oversight responsibilities.

Very truly yours,

Jerry Barber
Audit Director

cc: Vic Alonzo, SUNY at Stony Brook Year 2000 Coordinator
John Murphy, SUNY University Auditor
Christine Haile, SUNY Associate Provost for ALIS
Gary Davis, NYS Office For Technology

**SUNY AT STONY BROOK
HEALTH SCIENCE CENTER
HOSPITAL INFORMATION SYSTEM
PATIENT ACCOUNTING SYSTEM
PHARMACY SYSTEM
YEAR 2000 ASSESSMENT QUESTIONNAIRE**

TABLE I

A colored "traffic light" Legend is included in the table below to assist management in focusing an appropriate level of attention on the issues identified in the Status and Comments sections of the Review Findings.

Legend:

	Status/Comments contain matters which may be of immediate concern to management.		Status/Comments contain matters which management may wish to consider.		Status/Comments do not contain issues which require immediate management consideration.
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Review Findings:

	YEAR 2000 STEPS	STATUS	COMMENTS
	A. PROJECT PLANNING & MANAGEMENT		
	A1. Is there a written Year 2000 Project Plan and does it include/identify steps needed to correct the Systems in question?	Yes	The HSC has an agency-wide plan as well as an individual implementation plan for each application. The plan is to replace the Hospital Information System, Patient Accounting System and main Pharmacy System with a Year 2000 compliant system developed by Shared Medical Systems Inc. (SMS). In addition, the purchasing functions related to the Pharmacy System will be replaced by a new compliant system from another vendor, Lawson Inc. (Lawson).
	A2. Does the Plan (or any other available record) define what is meant by "compliance" when describing systems at the agency which are Year 2000 ready?	Yes	Year 2000 compliant is defined in the glossary of terms of the Year 2000 Business Continuity Planning User Manual as recommended by the American Hospital Association (AHA) and used by the HSC. The HSC also has a Year 2000 scope definition listing five categories: biomedical, hardware, software, facilities and suppliers.

TABLE I (Cont'd)

	YEAR 2000 STEPS	STATUS	COMMENTS
	A3. Is there a written schedule covering the time frame for achieving compliance for the Systems in question?	Yes	The HSC Year 2000 steering committee minutes contain a Year 2000 time-line. Testing is indicated on the time-line "TBD" (to be determined) with no date shown.
	A4. Is progress toward completion of the schedule for the Systems in question being monitored?	Yes	There is a Year 2000 Task Force. Outside consultants are utilized for large legacy projects. An Executive Steering Committee meets every two weeks. There are weekly project management meetings, weekly progress meetings regarding the systems provided by SMS, and weekly meetings with clinical departments. The Task Force also meets regularly with the various hospital groups/departments.
	A5. Are the Systems in question meeting the schedule (no significant slippage being reported)?	No	A seven-month slippage occurred for the SMS systems due to expansion of the project and vendor related issues, with implementation expected in November 1999. The system provided by Lawson was implemented on schedule in July 1999.
	B. TEST PLANS		
	B1. Are there documented test plans and do they include/identify steps needed to ensure that the Systems in question will process as expected after they have been corrected to comply with Year 2000?	No	The HSC was focusing on system implementation for the SMS and Lawson systems. Although some Year 2000 testing is included in the initial implementation testing, full system Year 2000 test plans (time-line, dates to be tested and the compliance date) are being developed for testing at the time the SMS system is fully implemented in November 1999. Year 2000 certification letters or other information has been received from both vendors. With implementation schedules now extending into November, there is little time left to test for Year 2000 issues and to address problem that may result.
	C. DATA EXCHANGES		
	C1. Have all data exchange partners/interfaces for the Systems in question been identified and included on a written inventory record?	Yes	Data exchanges are identified and listed.

TABLE I (Cont'd)

	YEAR 2000 STEPS	STATUS	COMMENTS
	C2. Have data exchange interfaces been considered in the overall Year 2000 Project Plan and the test plans covering the Systems in question?	Partial	Although a Year 2000 test plan has not yet been developed, officials indicated that the interfaces would be considered in the testing.
	D. CONTINGENCY PLANS		
	D1. Is there a written business contingency plan in place for the Systems in question and does the plan specify steps for completing vital business functions if the Systems in question are noncompliant or inoperable for Year 2000 purposes?	No	The HSC uses the Year 2000 Business Continuity Planning User's Manual recommended by the AHA. A Contingency Planning Task Force was established by the Steering Committee and meets every two-four weeks. Initial draft plans were expected in August, but have not been completed as of September 28 (although they are expected imminently). A final draft of the contingency plan is expected by December 1999. Completion of a draft in December leaves little time for plan finalization.

**SUNY AT STONY BROOK
HEALTH SCIENCE CENTER
BIO-MEDICAL EQUIPMENT
YEAR 2000 ASSESSMENT QUESTIONNAIRE**

TABLE II

A colored "traffic light" Legend is included in the table below to assist management in focusing an appropriate level of attention on the issues identified in the Status and Comments sections of the Review Findings.

Legend:

	Status/Comments contain matters which may be of immediate concern to management.		Status/Comments contain matters which management may wish to consider.		Status/Comments do not contain issues which require immediate management consideration.
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Review Findings:

	YEAR 2000 STEPS	STATUS	COMMENTS
	A. PROJECT PLANNING & MANAGEMENT		
	A1. Is there a written Year 2000 Project Plan and does it include/identify steps needed to correct the System in question?	Yes	There is a Year 2000 project plan for bio-medical equipment. The HSC has hired a consultant to help verify, evaluate, rate the equipment inventory and acquire compliance documentation.
	A2. Does the Plan (or any other available record) define what is meant by "compliance" when describing systems at the agency which are Year 2000 ready?	Yes	Year 2000 compliant is defined in the glossary of terms of the Year 2000 Business Continuity Planning User Manual as recommended by the American Hospital Association (AHA) and used by the HSC.
	A3. Is there a written schedule covering the time frame for achieving compliance for the System in question?	Yes	There is a written time-line for achieving compliance for the bio-medical equipment.
	A4. Is progress toward completion of the schedule for the System in question being monitored?	Yes	There is a Year 2000 medical equipment task force which has project management meetings bi-weekly. The task force reports to the steering committee monthly.

TABLE II (Cont'd)

	YEAR 2000 STEPS	STATUS	COMMENTS
	A5. Is the System in question meeting the schedule (no significant slippage being reported)?	Yes, see comment	Bio-medical equipment was expected to be compliant during September 1999. The vendor for the Physiological Data Monitoring System has provided verbal assurance, but not the written assurance of compliance sought by HSC officials. Officials believe the System to be compliant, but cannot test it because it runs round-the-clock. Officials indicate that contingency plans will cover the System.
	B. TEST PLANS		
	B1. Is there a documented test plan and does it include/identify steps needed to ensure that the System in question will process as expected after it has been corrected to comply with Year 2000?	Not Applicable	Test plans are typically applicable to computer applications. For medical devices and equipment the testing process primarily consists of contacting vendors, obtaining compliance verifications and upgrading or replacing items that vendors are unwilling to support or certify as compliant. Testing equipment, usually with vendor or manufacturer guidance, is also appropriate. HSC is testing equipment which it upgrades, but not equipment for which the vendor has provided a certification. HSC officials have provided literature in support of their position, claiming testing may invalidate warranties and damage equipment. Another approach, and one which we understand has been taken by other hospitals, is to test all equipment unless a vendor goes on record that testing can damage equipment and unless a vendor provides data regarding the results of its own testing. This approach may provide better assurances for compliance.
	C. DATA EXCHANGES		
	C1. Have all data exchange partners/interfaces for the System in question been identified and included on a written inventory record?	Yes	The bio-medical equipment interfaces have been identified.
	C2. Have data exchange interfaces been considered in the overall Year 2000 Project Plan and the test plan covering the System in question?	Yes	The bio-medical equipment interfaces will be tested, except as noted above in A5.

TABLE II (Cont'd)

	YEAR 2000 STEPS	STATUS	COMMENTS
	D. CONTINGENCY PLANS		
	D1. Is there a written business contingency plan in place for the System in question and does the plan specify steps for completing vital business functions if the System in question is noncompliant or inoperable for Year 2000 purposes?	No	The HSC uses the Year 2000 Business Continuity Planning User's Manual recommended by the AHA. A Contingency Planning Task Force was established by the Steering Committee and meets every two-four weeks. Initial draft plans were expected in August, but have not been completed as of September 28 (although they are expected imminently). A final draft of the contingency plan is expected by December 1999. We are concerned about the HSC's ability to complete this on time.