



***American University of Armenia***  
*Center for Health Services Research & Development*

**The Blueprint Report:**  
**A Proposal for Phase 2 of the AUA/NMMC Project**

*American University of Armenia and  
Nork Marash Medical Center*

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### Introduction to the Blueprint Report

The AUA/NMMC Project (ANP) was formally established in February 2000. Two key documents that have guided the ANP since its inception are a Memorandum of Understanding signed by leaders of the two institutions and the original project proposal. The MOU will expire on December 31, 2001. This report, which describes proposed ANP activities that would take place after the expiration of the MOU, assumes that the ANP Steering Committee will renew the MOU.

The proposal described five projects<sup>1</sup>. Four of the five projects consisted either entirely or in part of assessments of different aspects of NMMC's operations. These assessments included the degree to which international standards of hospital care and management are met at NMMC, the feasibility of establishing

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<sup>1</sup> Two of the projects—marketing and business administration—were later combined into one project during the implementation. These two projects are treated separately in this report.

a patient follow-up center at NMMC, and a needs assessment for business administration and marketing at NMMC.

All five projects have either been completed or are well-advanced in their implementation. The ANP is now at a crucial juncture in its development; the timing is appropriate to prepare a document that summarizes the current status of the ANP and proposes a new, implementation-oriented phase for the project. This document, titled the Blueprint Report, integrates the recommendations of the assessments noted above into a development plan that will support and enhance the effort of NMMC leadership and staff to convert NMMC into a hospital with modern systems of operation that include a quality assurance program.

The report is written in a concise, summary format in order to enhance its readability and usefulness. The format of the report is as follows:

### **Blueprint Report Format**

#### Part 1: Progress to date and evaluation

- 1.1 Project-by-project update, based on a description of achievements, current status, and recommendations.

#### Part 2: Next steps

- 2.1 Introduction / overview of what this phase will do
- 2.2 Brief outline of proposed future activities on project-by-project basis, based on a description of description, rationale, responsibilities, output, timeline, and evaluation.
- 2.3 Project timeline

## Part 1: Progress Review

A concise summary of the progress that has been made for each of the five projects is presented below according to a uniform format.

### *1.1 Project N1: Internship project for cardiologists from NIS countries*

#### Achievements

- Three cardiologists from Uzbekistan, Kyrgyzstan and Georgia have completed four-month internships. Two cardiologists from Russia and Abkhazia are currently completing their internships.
- NMMC cardiologists have visited graduates in Uzbekistan and Georgia following their internships to work with them at their own facilities.
- NMMC cardiologists have worked closely with CHSR staff to develop draft clinical competencies that have been used to formulate curriculum for the current interns. These competencies will also serve as a tool for evaluation of their progress.
- NMMC cardiologists, led by Karen Kurdov, have assumed the lead role in the conduct of this project.
- Interns are uniform in their praise of the project.
- Cardiologists from Uzbekistan and Tbilisi who have completed internships at NMMC have referred patients who have come to NMMC for surgical treatment.

#### Problems

- Difficulties have been encountered while trying to publicize the Internship Project; there is no clear method to directly contact cardiologists in countries of the Former Soviet Union (FSU). NMMC and AUA have worked with ACCELS and the Soros Foundation to attempt to more effectively publicize the project.

#### Current status

- This project provides funding for six interns to study at NMMC. Three cardiologists have completed their internships and two more are currently at NMMC. Although an acceptable candidate for the sixth seat has been identified, a decision has been taken to conduct a focused effort over the next month in an attempt to locate a stronger candidate.
- The use of competencies to guide curriculum and evaluate intern performance is in a trial phase. Additional aspects of the intern evaluation format are being pilot tested with current interns.

#### Recommendations

- This project is strongly supported by NMMC and the CHSR and is recommended for additional funding. The basis for a strong network of regional cardiologists loyal to NMMC is being established, the number of referrals from “graduates” of the project is encouraging, and interns report high levels of satisfaction with their experience. It is recommended that the basic structure of the current project be continued.
- Draft competencies have been developed for pediatric cardiologist interns and should be developed for the next adult cardiologist intern. The development of competencies in this project is a pilot effort for the development of competencies at NMMC for a wide range of educational programs. Following the refinement of competencies developed through this project, NMMC should consider upgrading their educational curricula using a competency-based format.
- Graduates of the intern project return to their home country and identify candidates for surgery at NMMC who are unable to pay for the cost of travel to Yerevan and surgery at NMMC. The project should attempt to locate sponsors who would help to underwrite some or all of the cost of surgery for needy patients identified by cardiologists trained under the Internship Project.

## 1.2 *Project N2: Quality of care review*

### Achievements

- The CHSR and NMMC collaborated to prepare the report A Survey of Adherence to International Hospital Standards at Nork Marash Medical Center (“Report”). The Report, which was essentially a mock accreditation survey, presents an assessment of the level of compliance that NMMC demonstrates with international standards of hospital-based care and management.
- A validated Armenian translation of the SF-36 questionnaire has been completed. The SF-36 is a self-administered questionnaire that is widely used internationally to measure different aspects of an individual’s health status.
- A report that maps the patient record system (“Map Report”) and documents how data are collected and used to monitor indicators of quality at NMMC has been completed.

### Problems

- Late response from Health Assessment Lab (HAL), Inc., the organization that licenses the SF-36 for commercial and research use, delayed the completion of the translation of the SF-36.

### Current activities

- The Armenian version of the SF-36 has been finalized and will now be pre-tested.
- Dr. Anna Oksuzyan is currently implementing an assessment of the adequacy of medical records at NMMC for use in quality assurance and research activities.

### Recommendations

- The Report has strong potential to serve as the basis for the establishment of a pilot quality assurance (QA) program at NMMC. It is recommended that the QA program is begun under a committee-based approach for two of the eleven functions evaluated in the Report. The choice of functions—one management-centered and one patient-centered—should be based on specific criteria that may include the degree to which the function’s standards are met at NMMC and the level of interest of the NMMC counterpart who will lead the QA committee.
- Significant effort has been made in translating the SF-36. The questionnaire now needs to be used. It is recommended that all surgical patients complete the questionnaire immediately prior to their surgery and again at a specific point following their surgery—perhaps six months later. Some or all of the questions on the SF-36 should be considered for incorporation into the questionnaire that is developed for use in the Patient Follow-up Center, if this Center is established.
- Recent correspondence with the international accreditation division of the Joint Commission for Accreditation of Healthcare Organizations (JCAHO) suggests that NMMC could—with a concentrated effort in many areas outlined in the Report—achieve international accreditation from JCAHO in the future. Contacts with JCAHO should be nurtured and developed and the possibility and interest of NMMC pursuing accreditation should be reassessed periodically.
- The Map Report represents a crucial first step in the effort to identify current data collection efforts that are used to monitor the quality of care and health outcomes at NMMC and develop additional data-based QA efforts. The current effort led by Dr. Oksuzyan (described above) to assess the quality of patient records as a source of data for QA efforts represents the logical next step in this process. Future efforts should focus on the development of indicators to monitor quality of care in the functional areas targeted by the QA program described above.

### 1.3 Project N3: Feasibility study for Patient Follow-Up Center (PFUC)

#### Achievements

CHSR and NMMC personnel have collaborated to complete a detailed assessment of the cost and feasibility of establishing a PFUC at NMMC. The assessment is based on a pilot study that was conducted by CHSR and NMMC staff. The results of the assessment are documented in the report titled Feasibility Study for a Patient Follow-Up Center at Nork Marash Medical Center (“Report”).

#### Problems

Significant problems were not encountered during the conduct of this project. During discussions with personnel at AUA and NMMC, different visions of how the PFUC might be staffed and structured did emerge. These competing visions can best be described as an integrated model versus a stand-alone model. Under the integrated model, the routine tasks associated with running the PFUC would be incorporated into the daily tasks of existing personnel; there would most likely not be a room or an employee who were dedicated to the PFUC. Under the stand-alone model, a room and one or more employees would be dedicated to the PFUC. The integrated model strives for efficiency and to reduce costs of the Center, while the stand-alone model emphasizes the importance of dedicating an employee(s) to the task of operating the Center, thereby increasing the quality of the work done in the Center. Coming up with a model that doesn’t have unsustainable staffing component

#### Current status

The English language version of the Report has been completed. The Armenian version of the Report is currently being prepared.

#### Recommendations

The ANP team recommends that a PFUC is established at NMMC in order to improve the medical care that NMMC provides to its patients and to increase NMMC’s ability to monitor medium and long-term trends in the health status of its patients. Key elements of the model that is proposed for the PFUC are listed below.

- The PFUC should be modest in scope and inexpensive. It can be expanded, if necessary, over time.
- The PFUC should make efficient use of existing NMMC personnel supplemented by necessary hardware and equipment acquired through outside funding sources. Experimentation in the use of local volunteers as well as seeking funding from local sources is proposed.
- The operations of the PFUC should be integrated into routine tasks of existing NMMC employees.
- The PFUC should include all patients who undergo surgery at NMMC.
- Patients who live in Yerevan and have a mailing address can be contacted either by mail, by phone, or a combination—this decision remains to be made. Patients who live outside of Yerevan should only be contacted by mail.
- Capital funding should be sought from current ANP funding sources. It is proposed that funding for non-personnel recurrent needs for an initial two-year period be sought from local sources, principally wealthy individuals who have benefited from medical treatment at NMMC. It is proposed that personnel needs be met through a combination of existing NMMC personnel and volunteers from the community of NMMC patients.
- If necessary, the cost of maintaining the PFUC should be funded through a modest increase in the price of surgery.

## 1.4 Project N4: Marketing analysis at NMMC

### Achievements

The AUA Center for Business Research and Development (CBRD) has completed a critical assessment of marketing issues at NMMC. The results have been presented in the document titled Report on Marketing Issues at the Nork Marash Medical Center ("Report"). The Report incorporates findings of multiple marketing research data collection efforts (in-depth interviews, telephone interviews, and focus group sessions) conducted by CBRD and provides the rationale and recommendations for short, medium, and long run projects to improve marketing practices at NMMC.

### Problems

The CBRD did not encounter significant problems during the implementation of this project. The Report did note problems at two levels (NMMC and national) that might be faced during implementation of the recommendations outlined in the Report. NMMC-level problems included 1) difficult financial situation, 2) lack of financing options for many patients, 3) limited capacity at NMMC to implement projects, 4) weak communication, computer, and English skills of NMMC staff. Country-level problems included the lack of a functional medical insurance system and the lack of an organized Association of Cardiologists in Armenia (or similar lobbying body).

### Current status

The assessment of the marketing issues at NMMC has been completed. A plan for implementing the recommendations outlined in the Report is presented in the second part of this report.

### Recommendations

The Report described recommendations that were organized into three categories: short-run, medium-run, and long-run.

- *Short run recommendations:*
  - Development of a Mission Statement and Staff Organization Chart (i.e., organogram)
  - Create a new staff position: Marketing Officer
  - Create a database of customers/referring doctors and contact them regularly
  - Conduct a customer relations training for NMMC staff
- *Medium run recommendations*
  - Advertising (customer testimonials)
  - Direct-mail campaign targeted at hospitals & doctors in- and outside Armenia
  - Development and dissemination of a series of health-related brochures
  - Provide internships for doctors from NIS countries
  - Establishment of a professional organization holding semi-annual conferences
  - Creation of a telephone hot line for health education
  - Acquisition of information on neighborhood countries' specific needs to direct marketing measures to those needs
  - Conduct recurrent surveys among patients and staff with continuous feedback
- *Long run recommendations*
  - Health campaigns (informative advertising) and infomercials in Armenia, Georgia and other countries

## 1.5 Project N5: Business Administration Assessment at NMMC

### Achievements

The AUA Center for Business Research and Development (CBRD) has completed the critical assessment of administrative and financial policies and procedures at NMMC. The results have been presented in the document titled Report on Business Administration Issues at the Nork Marash Medical Center (“Report”). The Report provides the rationale and recommendations for short and long-run measures to improve business administration practices at the NMMC.

### Problems

- The CBRD did not encounter significant problems during the implementation of this project. The Report did note potential problems that might be faced in the future if the recommendations outlined in the Report were implemented. These included 1) the necessity for the NMMC administration to balance their humanitarian urges against the fiscal discipline required by market forces, 2) the anticipated resistance of the NMMC medical community to a pro-business orientation at NMMC, and the stated attitude of NMMC employees that the recommended changes “can not be done that way in Armenia”.
- Some of the recommendations in the Report (e.g., the creation of a new staff position for a Chief Financial Officer) may be more cost-effective in a hospital with a larger capacity than NMMC. The gradual implementation of this recommendation through the use of part-time staff may address this concern.
- NMMC personnel questioned whether the recommendations of the Report might be “too much at once”. Discussions between the CBRD and NMMC personnel have identified a gradual approach to the implementation of the recommendations.

### Current status

The assessment of business administration at NMMC has been completed. A plan for implementing the recommendations outlined in the Report is being developed.

### Recommendations

The Report described recommendations that were organized into three areas: physical flows, financial flows and demand analysis.

- *Recommendations on physical (materials) flows include:*
  - Introduction of an inventory control (materials management) system
  - Introduction of a patient-tracking (healthcare information) system
  - Analysis of input use for specific procedures
  - Adoption of a system for tracking provider use in specific procedures
- *Recommendations on physical flows include:*
  - Creation of a local area computer network covering accounting, administration, and inventory control
  - Introduction of a customized cash-flow (accounting information) model
  - Creation of a new staff position of Chief Financial Officer
  - Provision of training on financial analysis and forecasting to relevant staff
  - Creation of a new staff position – Internal Auditor – and adoption of a schedule of regular internal audits
- *Recommendations on demand analysis (pricing) include:*
  - Revision of the pricing policy to shift from average cost pricing to marginal cost pricing
  - Adoption of a system of charging patients for actual use of services
  - Computation and allocation of the historical deficit to the cost of different procedures (if average pricing is used)

- Adoption of a LIFO (last in, first out) inventory accounting system
- Inclusion of physical depreciation of fixed equipment in cost estimates used for pricing decisions

## Part 2: Next Steps

### *The AUA/NMMC Project: Goals, status and framework for progress*

The AUA/NMMC Project (ANP) has had a successful initial phase and has made substantial progress. The ANP seeks to achieve two principal goals:

1. To support the effort to convert NMMC into a hospital with modern systems of operation that includes a quality assurance program.
2. To develop a unique partnership between an academic institution and a health care provider that results in a “university within the hospital”: that is, a setting where students can expand on and integrate their classroom learning experience with a functioning institution that operates in “the real world”, to the benefit of the students, AUA, NMMC, and the Armenian people.

The ANP is ready to progress to a second (implementation) phase. This phase of the project will focus on efforts to integrate the recommendations of the assessments detailed in Part 1 of this report into a coordinated set of actions. This is an appropriate time for AUA and NMMC to examine the relationship that has developed between the two institutions with regards to the ANP and to determine how that relationship should evolve so as to best support the goals of the project.

AUA and NMMC are both committed to a long-term relationship that is mutually beneficial. The first phase of the ANP has been composed of one implementation-oriented project (the Intern Project) and four assessments of various aspects of NMMC operations (Quality Assurance, Patient Follow-Up Center, Marketing, and Business Administration). This phase has seen the development of a solid foundation for work between AUA and NMMC. It should be noted that AUA has been the lead partner in most project activities to date, because these projects were mainly focused on assessment-type activities. In the implementation-focused projects suggested hereafter, a shift of the leading role should naturally happen from AUA to NMMC.

Two issues must be clarified if the ANP is to proceed effectively:

1. The nature of the relationship between AUA and NMMC with regards to the implementation of the project must be clearly understood and agreed upon; and,
2. NMMC must develop a managerial structure, with clearly delineated lines of authority – for both the clinical and administrative functions – that can work effectively with AUA counterparts.

### **The relationship between AUA and NMMC: Roles of the two institutions**

The projects that take place under the ANP are, from the AUA perspective, development projects. AUA personnel work with NMMC counterparts to develop different aspects of clinical and administrative initiatives at NMMC and then, eventually, move on to other projects. AUA staff may assist with day-to-day activities in the early aspects of a project, but only in coordination with an NMMC counterpart who has been assigned to work with the AUA staff person. It is vital that the NMMC counterpart view the project as an “NMMC project”, and not as an “AUA project”. In short, AUA staff that work on the ANP should not do “nuts and bolts work” beyond the early development stages of a given project. Sustainability of ANP efforts is only feasible if AUA counterparts have a clearly defined, temporary role and plans exist for them to “move on” when they have fulfilled their role.

From NMMC's perspective, initiatives are conducted under the ANP in order to support the improvement of clinical medicine and administrative procedures. NMMC is interested in project efforts that build the capabilities of the hospital and its personnel to deliver improved services through an organizational structure that is supported by an effective managerial system. NMMC is responsible for making sure that all ANP initiatives have one or more dedicated, enthusiastic NMMC employee(s) assigned to the task, for providing a contribution to the project that ensures a feeling of ownership on the part of NMMC, and for making sure that ANP efforts fit within the vision of the NMMC leadership, both in terms of vision and long-term feasibility.

### **Organizational framework for the ANP**

If the initiatives that are proposed below are to be effectively developed then AUA and NMMC counterparts must be able to interact effectively through a recognized, established model of management. In order to facilitate this interaction it is proposed that, in effect, NMMC establish two offices: That of Administrative Director (AD) and that of Clinical Chief of Staff (COS). The office of AD effectively exists in the person of Dr. Lida Muradyan, Director of NMMC; little or no change may be required here in order to establish the office, although a thorough assessment of the current administrative structure at NMMC would provide a helpful basis for optimizing the effectiveness of the AD. The administrative structure of the clinical aspect of NMMC operations is relatively undeveloped. There is currently no official office of COS at NMMC: this role is filled informally by Dr. Hovakimian and Manukyan. It is proposed that AUA identify a leading American clinical Chief of Staff who will travel to Yerevan and, together with NMMC counterparts, develop a clinical managerial system that is appropriate to the Armenian context and NMMC's institutional capabilities.

AUA proposes to work together with NMMC in the short- to medium-term to develop these offices. These offices would be the contact points between AUA and NMMC for all ANP activities: for example, the Marketing project would be through the office of the AD, while the Patient Follow-up Center would be conducted under the office of the COS. It should be clearly stated that executive responsibility for all issues relating to the operation of the hospital would remain the responsibility of NMMC.

### **The ANP: Proposed next steps**

Seven projects are proposed for funding below. Taken together, these seven projects comprise a short-term development plan for NMMC. Out of seven proposed projects, five are direct follow-ones from the five projects described in the original proposal and subsequently implemented, reinforcing the conclusion that the directions originally chosen for the ANP were appropriate. Two new ones are aimed to create an organizational structure in NMMC that will facilitate the effective implementation of the five projects through a recognized, established model of management described above.

## 2.1 Proposed project A: *Development of a clinical managerial system at NMMC*

Rationale: The goal of this project is to develop an effective managerial system at NMMC responsible for clinical activities of the hospital. The existence of such a system will provide a structure for coordinating all the clinical functions at NMMC and will create a tool for evaluating these functions, finding ways for their improvement, organizing and overseeing the implementation of relevant changes and evaluating the results of these changes. Three of the proposed projects: the Internship project for cardiologists from NIS countries, the Quality assurance project, and the project on Establishment of mechanism to follow surgical patients, will be conducted through this structure. Also, the existence of a clinical managerial structure at NMMC will create a basis for effective work with AUA counterparts in this area.

Description: A specialist in clinical managerial systems (Chief of staff function) will spend approximately 2 weeks at the NMMC. Management of clinical functions at NMMC will be critically examined and assessed in the context of the Armenian health services and current social situation. Recommendations will be made on how to develop an effective clinical managerial system at NMMC. Further project activities addressing the consultant's recommendations will be developed and implemented at NMMC.

Responsibilities: The CHSR will be responsible for locating a specialist in clinical management who has appropriate qualification for this project. The consultant will coordinate his activities with NMMC staff and with CHSR staff and will receive support from both of them during his stay in Yerevan. The clinical leaders of NMMC will work closely with the consultant to find a clinical managerial structure appropriate for NMMC situation. Also, a student intern from the AUA MPH program will work with the consultant during all stages of the project in order to gain knowledge and help with logistics.

Output: A model of an effective clinical managerial system will be developed at NMMC. The results of the consultant's work will be presented in a report format.

Timeline: The identification and availability of the consultant for this project will determine the timeline for it. The consultant's final report will be completed one month following his/her trip to Armenia.

Evaluation: The feasibility and effectiveness of the developed managerial structure measured by the number of positive changes it introduce and the success of above-mentioned care-focused projects conducted through the office of clinical management will serve as the foundation of the evaluation of this project.

## *2.2 Proposed project B: Development of an administrative managerial system at NMMC*

Rationale: The goal of this project is to improve the effectiveness of the existing managerial system at NMMC responsible for administrative functions of the hospital. These will create an effective structure for coordinating all the administrative functions at NMMC, for evaluating these functions, finding ways for their improvement, organizing and overseeing the implementation of relevant changes and evaluating the results of these changes. Two of the proposed projects: the project on Development and implementation of marketing plan and the project on Improvement of systems of business administration at NMMC will be conducted through this structure. Also, the existence of an effective administrative managerial structure at NMMC will create a basis for effective work with AUA counterparts in this area.

Description: A specialist in administrative managerial systems (Administrative Director's function) will spend approximately 2 weeks at the NMMC. Management of administrative functions at NMMC will be critically examined and assessed in the context of the Armenian health services and current social situation. Recommendations will be made on how to improve the existing administrative managerial system at NMMC. Further project activities addressing the consultant's recommendations will be developed and implemented at NMMC.

Responsibilities: The CHSR will be responsible for locating a specialist in administrative management who has appropriate qualification for this project. The consultant will coordinate his activities with NMMC staff and with CHSR staff and will receive support from both of them during his stay in Yerevan. The administrative leaders of NMMC will work closely with the consultant to find ways to improve the administrative management at NMMC. Also, a student intern from the AUA MPH program or from the AUA MBA program will work with the consultant during all stages of the project in order to gain knowledge and help with logistics.

Output: A model of an effective administrative managerial system will be developed at NMMC. The results of the consultant's work will be presented in a report format.

Timeline: The identification and availability of the consultant for this project will determine the timeline for it. The consultant's final report will be completed one month following his/her trip to Armenia.

Evaluation: The feasibility and effectiveness of the developed managerial structure measured by the number of positive changes it introduce and the success of above-mentioned administration-focused projects conducted through the office of administrative management will serve as the foundation of the evaluation of this project.

### 2.3 Proposed project N1: Internship project for cardiologists from NIS countries

Rationale: The goals of this project remain the same as previously stated in the original Nork project proposal: (1) to expand the network of cardiologists in the NIS who are acquainted with NMMC and who may refer cardiac surgical patients that cannot be treated at their facility to NMMC and (2) to improve the quality of cardiology in the NIS.

Description: Six cardiologists working in cardiology centers in NIS countries (Newly Independent States resulting from the dissolution of the Soviet Union) will serve four-month internships at NMMC. Interns will acquire new skills and knowledge according to a structured set of competencies that they identify with their mentors at NMMC. Once an intern has returned to her home country, s/he will be visited by an NMMC cardiologist who will spend one to two weeks with the intern at his or her work site, reinforcing the knowledge and skills acquired during the internship. The proposed structure of this project is identical to its structure under the first phase of the ANP.

Responsibilities: NMMC staff will continue to assume primary responsibility for this project, including the design of the internship program, making all arrangements for the interns' professional and personal needs during their stay, returning with interns to their place of work for on-site training, and reporting on the progress of the project on a regular basis. The CHSR will provide technical and administrative support, working with NMMC colleagues on the development of competencies, managing project funds, and preparing reports as necessary.

Output: Six pediatric cardiac surgery and cardiologist interns will each receive four months of training in order to achieve technical competencies that are established by NMMC cardiologists and the interns.

Timeline: The ANP currently has funding for one intern remaining from the initial project funding. Funding is requested in this proposal for five additional interns. These six interns would come to NMMC to complete their internships in three groups: two individuals would study at NMMC from September to December 2001, two individuals would study from March to July 2002, and the remaining two individuals would study from September to December 2002..

Evaluation: There are two parts to the evaluation of this project. The first consists of the number of referrals made by each intern to NMMC following their internship. Although it is difficult to attribute referrals to specific physicians using NMMC's current record system, approximations can be made that should prove useful in evaluating this aspect of the project. The second part of the evaluation documents the interns' experience during their stay at NMMC. An evaluation form that has been developed and pilot-tested under the ANP guides this aspect of the evaluation. This aspect of the evaluation contains both a self-assessment by the interns as well as an assessment by the cardiologists at NMMC who serve as their mentors.

#### *2.4 Proposed project N2: Quality assurance: Improvement of medical care and management at NMMC*

Rationale: Many advanced health care institutions implement quality assurance (QA) activities to establish, protect, promote and improve the care they provide. QA activities serve as the main tool of self-assessment and self-improvement for health care institutions in their most critical functional areas including management, education, and the provision of health care services and treatment. The strengthening and expansion of QA activities at NMMC will lead to sustainable improvement in all functional areas of the institution and to improved patient health outcomes. The involvement of NMMC staff of all levels in QA activities (including decision-making) will contribute to their self-esteem and sense of responsibility for the institution as a whole. In turn, the participation of AUA students in this process will allow them to gain invaluable training experience while concurrently making key contributions to QA activities.

Description: The following actions will be implemented at NMMC under the ANP on the basis of the findings described in the report Survey on Adherence to International Hospital Standards at Nork Marash Medical Center (“Report”). Two functions (preferably, one patient-centered □ one management-centered) among those evaluated in the Report will be chosen to focus on using criteria developed by NMMC staff members and CHSR personnel. Two separate “Quality Work Groups” (QWGs) will be established in NMMC. Each QWG will concentrate on one of the selected functions and will be given a broad mandate to improve processes associated with it. Although QWGs will be encouraged to devise innovative approaches to their task, they will be required 1) to develop documentation as stated by the JCAHO core standards for the function that they have chosen and 2) to develop indicators to monitor quality of care or management (and to establish monitoring systems for those indicators) in the functional area.

Responsibilities: CHSR and NMMC will work in a collaborative manner to develop this project. CHSR will provide technical support to these activities—such support may include sharing ideas on organizing QWGs; obtaining and modifying formats for documenting processes and procedures; assisting in development of quality monitoring indicators, data collection systems, and databases; providing examples of similar activities implemented in other comparable institutions; and orienting NMMC staff to issues in QA. NMMC will carry the primary responsibility for all the activities listed above in “Description”.

Output: The outputs of this project are envisioned to be the following: 1) lists of indicators that have been developed by the QWGs to monitor quality; 2) documented monitoring mechanisms that have been established for these indicators; 3) computerized databases for the entry of data to monitor quality; 4) documented policies and procedures in the functional areas selected by the QWGs; and 5) documented changes in other processes that have been targeted by QWGs for action.

Timeline: The timeline for two QWGs to become fully established and to achieve considerable progress in producing outputs described in the previous paragraph has been set at one year. It is envisioned that the process of implementation of QA systems at NMMC will have a continuous character, beginning with two areas and a limited agenda and then moving gradually towards more functions and a broader agenda.

Evaluation: The short-term evaluation of this project will center on assessing four indicators: 1) the number of standards in the Report that are targeted for action by the QWGs, 2) the comparison of the pre and post-project rating scores for these standards, and 3) the number of standards for which monitoring mechanisms are established, and 4) the number of standards for which policies/procedures are documented. The long-term measure of this project’s success will be based on whether an effective QA program is established at NMMC.

*2.5 Proposed project N3: Establishment of mechanism to follow surgical patients over time at NMMC*

Rationale: Leading health facilities around the world develop and implement systems that allow them to monitor their patients' health status and behaviors over time. A follow-up program is an integral aspect of high-quality comprehensive care for patients who have undergone cardiac surgery. A patient follow-up center (PFUC) at a facility providing cardiac surgical services has two primary objectives. The first objective is centered on the individual patient who has received care at the facility; the periodic collection of data on the patient's health status and behaviors allows for the facility to monitor the patient, provide him with quality care, and minimize the risk of further hospitalizations and complications. The second objective of a PFUC derives from the use of aggregated follow-up data to evaluate outcomes of care; research based on aggregated data can be used to evaluate the effectiveness of techniques or medical devices or to identify problems in patient care management.

Description: AUA and NMMC have collaborated in the conduct of a feasibility study for a PFUC at NMMC. The results of this study are documented in the report titled Feasibility Study for a Patient Follow-Up Center at Nork Marash Medical Center ("Report"). A detailed description of the proposed PFUC is presented in the Report. A summary description of the proposed PFUC is presented in Part 1 of this document (see page 5). Also, a small-scale clinical validation study will be carried out among the surgical patients residing in Yerevan who was contacted during the above-mentioned Feasibility Study and who reported unsatisfactory health condition. This study is aimed to check the extent of accuracy of the previous measurement and to suggest hypothesis about the possible risk factors for unsatisfactory health condition among former surgical patients of NMMC.

Responsibilities: NMMC would appoint a senior clinician who would have overall responsibility for the PFUC. The establishment of the PFUC would be characterized by three stages. In the first stage, software would be developed, the follow-up questionnaire would be designed and pretested, and the systems and procedures that would guide the PFUC would be developed. The first stage of the project would be overseen by a committee comprised of CHSR and NMMC personnel and would be completed by September 30, 2001. The second stage would be a three-month start-up period during which time only new surgical patients would be enrolled in the PFUC. The third stage would have a duration of approximately two years; during this time all patients previously operated on at NMMC would be contacted and enrolled in the Center. NMMC would assume responsibility for the project during the second and third phases, although CHSR staff would provide technical assistance as necessary. The CHSR/NMMC committee will continue to oversee project activities throughout its duration. A staff member from CHSR and a clinician from NMMC will be responsible for implementation of the clinical validation study.

Output: The PFUC will develop protocols for the routine synthesis and generation of information that is gathered. A list of patients whose responses to the PFUC questionnaire indicate that they are in need of care from a cardiologist will be provided to each cardiologist at NMMC for action on a weekly or monthly basis. At the aggregate level, simple reports or figures that display trends in patient health status will be generated on a periodic basis. A report on findings of the above-mentioned clinical validation study will be prepared.

Timeline: The Report outlines a two-year, three-month timeline for establishing the PFUC and adding all patients to it who have ever undergone surgery at NMMC. The project is schedule to commence on October 31, 2001 and cease on December 31, 2003, at which time the Center will be fully operational and up-to-date. Following the completion of the project NMMC will either fund the PFUC through its normal

operating budget or will identify new funds. The clinical validation study will be completed during October-November, 2001.

Evaluation: The CHSR/NMMC committee that oversees this project will design and implement the evaluation of the project. Questions that the evaluation will address may include the following: Was the project implemented according to schedule? What were the inputs of the project? How useful were the outputs of the project? What are the options for sustaining the Center's activities over time? What actions or changes took place in medical procedures at NMMC as a result of information generated by the PFUC? The practical utility of findings of the clinical validation study will serve as the measure of its effectiveness.

## 2.6 Proposed project N4: Development and implementation of marketing plan at NMMC

Rationale: The implementation of well-planned and cost-effective marketing activities is crucial for improving the name recognition of NMMC both in Armenia and in neighboring countries. The creation of a positive image of the services provided at NMMC among the population of these countries will attract more patients who are able to pay for services they receive, thus helping NMMC to fulfill two key objectives: to be self-sufficient financially and to provide care to Armenian patients in need, regardless of their ability to pay.

Description: Taking into consideration the findings and recommendations of the Report on Marketing Issues at the Nork Marash Medical Center (“Report”), the following actions will be implemented. A Marketing Assistant (second-year student from the AUA Masters of Business Administration (MBA) Program) will be hired on half-time basis to work on marketing initiatives and actions at NMMC. The Marketing Assistant will formally be an employee of the AUA Center for Business Research and Development (CBRD) but will receive day-to-day supervision by a designated individual at NMMC. The Marketing Assistant will work as a counterpart to Karine Stepanyan, who currently serves as the International Relations Specialist at NMMC. The Marketing Assistant will receive technical support from Dr. Judy Newton. Dr. Newton is a specialist in marketing and is the Associate Dean of the College of Business at AUA. Marketing activities will be guided by the Report. Short and medium-run projects (e.g., development of a Mission Statement and an Organization Chart, creation of a database of customers/referring doctors, conduct of internship programs for regional cardiologists, organizing semi-annual conferences and seminars, advertising NMMC by customer testimonials, establishing a telephone hot line for health education, conducting surveys among patients and staff with continuous feedback, developing and disseminating series of health brochures) will be the focus of the Marketing Assistant’s efforts. Cost-effective strategies to implement long-run projects (e.g., health campaigns and infomercials) will be identified. Special attention will be given to marketing efforts in Georgia and southern Russia through the acquisition of information on the specific needs in these countries and direction of marketing measures to address those needs. In addition to the Marketing Assistant, other AUA students from the MPH or MBA programs may participate in the activities of this project on an as-needed basis.

Responsibilities: The CHSR, CBRD and NMMC will coordinate the marketing project. Led by the CBRD, these three organizations will work together to identify an appropriate candidate for the marketing position at NMMC amongst the second-year students of MBA program. The CBRD will provide intensive technical support to this individual. NMMC will provide workspace to the Marketing Specialist, work closely with this person on marketing initiatives, and provide him with full administrative support. Although the Marketing Assistant will be an employee of the CBRD, a designated NMMC administrator will supervise this individual on a day-to-day basis.

Output: The marketing initiatives that are developed and implemented will be the outputs of this project.

Timeline: The CBRD will begin initial planning work for this project (i.e., the identification of Marketing Specialist and the development of marketing plan) in the fall of 2001. The AUA Marketing Assistant will begin their work in early 2002. The initial duration of the employment of the Marketing Assistant will be twelve months with the possibility of extension if needed.

Evaluation: Each initiative that is undertaken by the AUA/NMMC marketing team will be evaluated to measure its impact. The findings of these evaluations (phone-surveys, opinion-surveys, etc.), as well as the number of patients referred to the NMMC from Armenia and abroad that can be directly linked to the marketing initiatives will serve as measures of the effectiveness of this project.

## *2.7 Proposed project N5: Improvement of systems of business administration at NMMC*

Rationale: The Report on Business Administration Issues at the Nork Marash Medical Center (“Report”) states that the weakness of overall accounting and management information systems at NMMC is one of the primary contributors to the financial difficulties currently experienced by the Center. Indeed, weaknesses in these systems constitute the main reasons why NMMC managers are unable to readily obtain accurate information for planning purposes. The development and implementation of well-designed inventory control, patient-tracking, and accounting systems will facilitate the collection of information that can be used to implement the changes in business administration that are recommended in the Report. The institution of these systems will not only facilitate the NMMC accountant’s everyday work and make information on financial flows and inventory status readily available for planning purposes; it will also cultivate a culture of administrative data collection and analysis, making it possible for NMMC to undergo a gradual transition from an inefficient Soviet-style hospital to a modern business providing quality medical services.

Description: Taking into consideration the findings and recommendations of the Report, the following measures will be implemented. A graduate of the AUA MBA program will be hired to work as the Chief Financial Officer (CFO) at NMMC on a part-time basis. The CFO, working closely with key administrative and clinical counterparts at NMMC, will be given the responsibility to design and establish procedures and guide developments as NMMC seeks to establish an inventory control system, a computer-based accounting program, and a patient-tracking system. The CFO will work in close collaboration with and receive technical assistance from the Center for Business Research and Development (CBRD) at AUA.

Responsibilities: The CHSR, CBRD and NMMC will work together to coordinate the BA project and identify an appropriate candidate for the position of CFO. The NMMC administration and accounting department will work closely with the CFO on business administration initiatives, providing the CFO with full administrative support while ensuring that a favorable working atmosphere exists. Although the CFO will be an employee of the CBRD, a designated NMMC administrator will supervise this individual on a day-to-day basis. The CBRD will provide technical support to the CFO.

Output: The outputs of this project will consist of 1) the establishment of systems of inventory control, patient tracking, and accounting and 2) trained staff to implement the systems.

Timeline: The CHSR, CBRD and NMMC are currently collaborating to identify and hire an individual who can serve as the CFO on an interim basis while funding for this project is sought. It is anticipated that the CFO will be hired and begin work on a one-day-per-week basis at NMMC no later than August 1, 2001. The proposal outlined in this report seeks funding for a Chief Financial Officer who will work up to two days per week beginning in September 1, 2001 for a duration of twelve months.



Project / description	Year 2001						Year 2002											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b><i>Project 4 - Development and implementation of marketing plan at NMMC</i></b>																		
Initial planning for marketing project			■	■	■	■												
Hiring of a marketing assistant							■	■	■	■	■	■	■	■	■	■	■	■
Implementation of short-term marketing recommendations							■	■	■									
Implementation of selected mid- and long-term marketing recommendations											■	■	■	■	■	■	■	■
<b><i>Project 5 - Improvement of systems of business administration at NMMC</i></b>																		
Hiring of Chief Financial Officer, installation of 2 hardwares, development of softwares for inventory control, accounting and patient tracking	■	■	■															
Development of data-gathering systems, training of personnel				■	■	■												
Implementation of inventory control, accounting and patient tracking systems							■	■	■	■	■	■	■	■	■	■	■	■
Working toward implementation of marginal pricing system												■	■	■	■	■	■	■