Homeless Management Information Systems (HMIS) Cost Estimation Guidelines

Cost Framework and Submission Recommendations

Oscar Gutierrez, Project Consultant
Center for Social Policy
McCormack Institute
University of Massachusetts Boston
Boston, MA 02125

Homeless Management Information Systems (HMIS)
HUD Technical Assistance Project
Cost Guidelines and Recommendations

Introduction

This document develops a set of guidelines to assist SHP applicants in developing and HUD officials in reviewing Homeless Management Information System (HMIS) cost proposals submitted by communities as part of their grant applications. The document presents a HMIS cost framework that describes all possible cost categories and cost items a community can incur. The purpose of these guidelines is to outline the budgetary elements presented in cost proposals. The document then presents recommendations on how to collect cost estimation data and guidelines to indicate whether there are possible inconsistencies or lack of proper estimations in a proposal.

HMIS Cost Framework

The HMIS cost framework is all-inclusive. It considers all possible cost categories and cost items that a community might incur when implementing an HMIS. The degree to which particular applicants will fit the framework depends upon a number of community and system characteristics. These are related to complexity of the requirements for an HMIS, community size and level of integration or software homogeneity within the community.

Cost Categories

There are five major cost categories that communities incur. This section identifies and outlines the major types. Further elaboration of these categories is presented in the Cost Items section of these guidelines.

Equipment Costs: These are the costs of acquiring and upgrading computer, telecommunications and security hardware for both central server organization(s) and the network of computer users. These costs are normally correlated to the numbers and unit costs of hardware.

Software Costs: These are the costs associated with the purchase of or license to use a specific HMIS software package or service. These costs are normally connected with the numbers and unit costs of software users, and may also include fees for provision of hosting services by the software vendor or other entity. These costs also include the purchase of or license to use supporting software tools such, as report writers and data analysis tools.

Costs of Services: Costs of services refer to the specific set-up and ongoing expenditures incurred when the community engages third parties, such as software vendors, consultants and technical service bureaus in the provision of specific services integral to the implementation, operation and recovery of a

HMIS. These costs are normally estimated on the basis of quantity, value, time and similar service-related criteria.

Personnel Costs: These are the costs of staff assigned to the implementation and subsequent operation of the HMIS within a community. These costs are normally estimated on the basis of Full Time Equivalents (FTE), wages paid, work-hours or similar personnel-related criteria.

Space-related Costs: Space related costs refer to the estimated cost of placing equipment and personnel at specific locations for which rental expenditures will be incurred. These costs are normally estimated on the basis of yearly rental occupancy rates.

Cost Items

This section of the guidelines describes in detail cost items by each of the five categories mentioned above. Table 1 presents a summary.

Cost Items	
1. Equipment	On-line connectivity
Central server(s)	Facilitation
Personal computers and printers	Disaster and recovery
Networking	
Security	**4. Personnel**
	Project management or coordination
2. Software	Data analysis
Software licensing	Programming
Server and Client	Administration
Installation	Technical assistance and training
Support and maintenance	Service agency stipend/allowance
Training	
Customization	**5. HMIS space and operations**
Supporting tools	Equipment rental space
	Project management space
3. Services	Central organization space
Training by third parties	
Hosting services	
Programming by third parties	
Customization	
System interface development	
Data conversion	
Security assessment and setup	

Table 1. Cost item summary

Equipment Costs

❑ Central Server(s)

In order to achieve unduplicated counts in a cost effective manner, a community requesting funds will normally call for the acquisition of two or more computer servers. These are high-end computers that may cost 4 to 7 times the cost of a personal computer. Depending on the functionality and organization chosen for the system, the community may require up to a total of 6 servers:
- Application server for system-wide data and/or case management (SW/CM)
- Database server for SW/CM
- Backup Server for SW/CM
- Application server for Information & Referral (I&R)
- Database server for I&R
- Backup server for I&R

In the above example, I&R is separate from the system-wide and case management application. Different organizations handle various aspects of the system. The I&R application is more likely to be handled by an organization that already processes hot line calls, such as a crisis call center. The case management application is more likely to be located at a state, city or county office, the offices of a major advocacy group, a major service provider or with the software vendor or an application hosting organization.

A community that selects a software package or service that integrates all the HMIS functions may require 3 servers to operate (i.e. application, database and backup). The same can be said of a community that decides not to integrate I&R into its HMIS operation. A small community will normally combine application and database in one server resulting in the possibilities shown in Table 2.

Community Size	I&R separate from SW/CM	Integrated	SW/CM only
Small	4	2	2
Large	6	3	3

Table 2. Number of Server request options

❑ Personal computers and printers

The number of personal computers and printers requested by a community may come in two categories: requirements for staff working at the central organization(s) and requirements for operation at participating agencies.

Central organization(s): Regardless of where the servers reside, a central organization requires personal computers to perform a number of management information systems functions including but not limited to the following: data aggregation and

analysis, reporting, communication, coordination, training and troubleshooting. The requirement will normally be to acquire one personal computer per FTE serving the HMIS plus one or more laptops for mobility.

Participating agencies: A community requesting funds for the acquisition of personal computers for participating agencies may base the request on one of at least three sets of criteria: fixed allocation per agency, computer allocation per agency or computer allocation per agency capacity.

Fixed allocation per agency: The simplest form of request makes a specific dollar allocation to each participating agency.

Computer allocation per agency: This request type makes a specific allocation of the cost of a computer to each participating agency.

Computer allocation per agency capacity: This request type makes specific allocations based on the capacity of each participating program. This capacity will normally be determined on the number of clients served. Therefore, the number of computers allocated to a program may be more than one. Here the community must develop and demonstrate a ratio of the number of clients to be served per computer.

	Request	Indicator
Central Organization(s) (CO)	FTEs serving HMIS Laptop(s)	FTE at COs
Participating agencies		
Fixed allocation per agency	Fixed dollar amount per agency	No. of participating agencies
Computer allocation per agency	Cost of one computer per agency	No. of participating agencies
Computer allocation per agency capacity	Cost of computers to be allocated based on each agency's capacity	No. of participating agencies and their client base

Table 3. Personal computers request options

❑ Networking

The networking cost requirements include the necessary equipment to enable participating agencies to establish efficient modes of data communication and transmission may include requests for the acquisition of hubs, switches and routers, as well as wire and patch panel installations. These requests may come in two categories: networking requirements for the central organization(s) and requirements for selected large participating agencies.

	Request	Indicator
Central Organization(s) (CO)	Networking equipment and installation	Justification and number of networked computers
Internally networked participating agencies	Network equipment and installation	Justification and number of networked computers

Table 4. Networking requests

❑ Security Equipment

The security requirements will normally refer to the firewall equipment and accompanying software necessary to protect the central server systems from illicit access. The requests for this type of equipment will depend on the number of separate physical locations where the community's servers reside. Table 5 shows the possibilities.

	Request	Indicator
All servers at one location	1 firewall set-up	Description of location
Application and database servers at one location and backup server at another	2 firewall set-ups	Description of two locations
*SW/CM application and database server(s), I&R server(s) and backup servers at different locations	3 firewall set-ups	Description of three locations
SW/CM application and database server(s), I&R server(s), SW/CM backup server, and I&R backup server at different locations	4 firewall set-ups	Description of four locations

*SW/CM = System-wide case management

Table 5. Security equipment requests.

Software Costs

❑ Software Licensing

The methods used by software vendors to determine methods for product licensing have changed over the last few years. For example, a software license agreement may not necessarily result in the actual purchase of a software package. Agreements bound by defined time periods may prove to be more cost-effective in the long run than perpetual ones. Similarly, agreements based on usage rather than on installation may offer alternatives to achieve greater flexibility to address the access requirements of varied types of users within a community. There are many possibilities and the challenges for the community are to a) negotiate a licensing model that is cost-

effective and b) demonstrate that such agreement is sustainable in the medium to long term.

Table 6 presents the various criteria by which one can categorize software license agreements. This section briefly presents the various terms.

Criteria		
Model	Scope	Term
Install	Concurrent	Perpetual
Hosting	Named	Defined time period
	Seat	
	Enterprise/sites	

Table 6. Software licensing categories

Model: Software licensing models today can be based on an installed-base of software (i.e. a copy of the application is installed on each of a pre-determined number of personal computers) or by providing (hosting) access rights to a fixed number of users (i.e. a system is located at a central location to which users connect to operate the application).

Scope: The scope refers to how per-user fees are determined. Common possibilities are the following:

Concurrent: the purchase of licenses for a total number of concurrent users.

Named: the purchase of licenses for specific individuals.

Seat: the purchase of licenses per computer.

Enterprise: the purchase of an overall license whose price depends on the total number of sites deployed.

Term: Software licenses can be obtained on a perpetual basis (software purchase), or by defined time period (normally an annual license fee).

Although this categorization may prove to be confusing for the purpose of these guidelines, it is important to recognize the following facts:

a) Requests for software acquisition funds should not be tied to the purchase of software. Software purchases are one licensing option. With Internet applications, a hosting and more flexible model may prove to be more cost effective.

b) The scope of the license agreement may be formulated as a mixture of options. For example, a fixed number of seats plus a set number of concurrent users can be a suitable strategy for some communities.

The cost items involved in software licensing are summarized in Table 7. For the purpose of cost estimation, it is important to differentiate between one-time and ongoing costs. The explanation of these categories follows.

Cost Category	One-time	Ongoing
Server	X	
Client	X	
Installation	X	
Training	X	
Support and Maintenance		X
Customization	X	

Table 7. Costs involved in software licensing

Server: If an application for funds shows an amount in this category, this means the community negotiated the licensing fee to install the portion of the HMIS system that must reside on the server. The cost of the server software will normally be a one-time fixed cost.

Client: This is the per-user (depending on the scope) license fee to install or access (depending on the model) the portion of the HMIS that will be visible to the user. The total number of user licenses contracted multiplies this amount. The cost of the license is normally on an annual basis. Negotiations to set the per-user fee should take place.

Installation: This is the cost of involving the vendor in the one-time costs of installing the software within the community.

Training: The costs of having vendor offered training sessions. Training by vendors may occur at two different levels: a) set-up, maintenance and system administration level, and b) user training. Because vendor training is expensive, a train-the-trainer policy is normally implemented. These costs are normally one-time.

Support and Maintenance: Support and maintenance costs are ongoing and refer to: a) access to telephone lines for customer service and technical assistance; b) fixed amount of hours for one-on-one access to the vendor's developers and/or technical experts; c) system upgrades; d) system patches; and e) other support-related features.
Customization: This is the cost that the vendor will charge to make modifications to the software in order to address specific requirements set forth by the

community. Customization costs are normally one-time. *Caution*: A substantial upgrading of an existing software product may be viewed by HUD as an ineligible cost, especially if it results in the significant enhancement of one competitive software visa-vie other competitive products.

❑ Supporting Tools

Most HMIS organizations will require additional software tools, particularly for complex reports and analyses. Typical additional products include report writers, statistical packages, advanced query tools and other utilities for security or presentation purposes. These are third party software packages capable of connecting with the HMIS's database. These tools will normally be requested by the organization that plays the central role.

Supporting Tool	Request	Indicator
Report writer	1 - 2 Licenses	Programmer
Statistical package	1 License per analyst	Data Analyst
Database query tool	1 – 3 Licenses	Database Analysts
Other	1 License	Other

Table 8. Additional software tools

Table 8 lists typical software tools that are really complementary products to any HMIS. The expectation is for a select number of people to use these tools, rather than to purchase licenses for all users. Therefore, requests for such tools should be limited to 1 to 3 licenses, depending on the product and the total staff performing specific data management, statistical and reporting activities. These tools are necessary to develop the kinds of analytical capabilities that can be justified by the presence of specialized personnel.

Costs of Services

❑ Training by third parties

This cost item refers specifically to the projected expenses that a community is planning to incur by training via third parties. This is excluding the training provided by software vendors, since that item has already been considered as part of the software license agreement process. Examples of such training programs include:
- Basic introduction to computers and concepts
- Basic introduction to internet and networks
- HMIS training by modules
- Data analysis and reporting

❑ Hosting Services

Hosting services refer to the use of a third party (other than the software vendor) to perform any of the following functions:
- Physical housing of the hardware on which the central server application runs and the central database resides.
- Physical housing of the hardware on which the backup for the HMIS application(s) and database reside.
- Support and troubleshooting of the central application(s) being hosted.
- Maintaining security.
- Monitoring system performance.
- Performing backups and restoration.

These services will normally be negotiated on a yearly basis, and will be based on estimated number of total hours on the project. Table 9 shows a typical mix of hosting services.

Service	Request	Indicator
Application hosting	Occupancy fee	Physical location and service plan
Backup hosting	Occupancy fee	Physical location and service plan
Security	Person hours for monitoring firewall	Service plan
Monitoring	Person hours for monitoring network traffic, application or database	Service plan
Backup/Restore service	Person hours to perform backup and restores	Service plan
Troubleshooting	Person hours per month	Service plan

Table 9. Hosting services

❑ Programming by third parties

Programming by third parties refers to the use of programming staff, other than the software vendor or HMIS personnel to conduct any of the following three types of programming activity:

Customization: Programming activities that modify or enhance the functionality of the HMIS. *Caution*: A substantial upgrading of an existing software product may be viewed by HUD as an ineligible cost, especially if it results in the significant enhancement of one competitive software visa-vie other competitive products.

System interface development: Programming activities designed to allow the exchange of information between the HMIS and other systems (i.e. local client systems developed by or for some agencies).
Data conversion: Programming activities designed to import the data from another system into the HMIS.

Table 10 shows the typical types of requests and indicators for these cost items.

Programming Type	Request	Indicator
Customization	Total amount as function of person hours	Specific unique requirements
Interface development	Total amount as function of person hours	System to be integrated
Data conversion	Total amount as function of person hours	System to be replaced

Table 10. Programming by third parties

❑ Security assessment and setup

Communities that decide to implement a web-enabled HMIS will need to develop policies and procedures that guarantee secure data transmission across the Internet and proper protection from unauthorized users. In some instances, such procedures and technical set up may prove difficult to achieve without assistance from a specialized third party.

Security assessment and setup refers to the costs involved in making sure that the technical environment developed to support the HMIS across the Internet has been set up in an effective way that complies with legal regulations and local standards set for the system.

❑ On-line connectivity

These are the costs involved in achieving proper connections to the Internet, Local or Wide area network. These costs will normally be specified in terms of unit cost per connection, times the total number of connections for which a request for funds is made. For example, if the application was web-enabled, the request for funds would be the cost of achieving Internet connectivity per computer participating in the HMIS implementation for which funds are being requested.

❑ Facilitation

Communities that involve large numbers of stakeholders may at some point experience the need to engage a professional facilitator to assist in sorting out some of the tough issues arising during implementation. Facilitation will normally be

requested in terms of person hours times the anticipated number of hours expected to be utilized within a year.

❑ Disaster and recovery

Disaster and recovery costs involve the expenditures incurred by the community in the planning and preparation for contingencies to address disaster preparedness and HMIS continuity. For example, these costs involve the set-up of a thorough backup plan including maintenance of on-site as well as off-site backup systems, change-over to alternative standby or backup site, and power supply and communication link preparedness.

Personnel Costs

❑ Project management or coordination

The project management or coordination costs refer to the personnel costs involved in conducting project activities designed to meet specific scope, time, cost and quality goals. Project management costs are normally expressed in terms of full time equivalents (FTEs).

❑ Data analysis

Data analysis costs refer to the personnel costs involved in performing analytical work on the data that has been collected through the HMIS. Data analysis costs are normally expressed in terms of FTEs. Table 11 shows a summary of personnel cost requirements and indicators.

Role	Request	Indicator
Project management	Full Time Equivalent	Description of project management functions
Data analysis	Full Time Equivalent	Description of data analysis functions
Programming	Full Time Equivalent	Description of programming projects
Administration	Full Time Equivalent	Description of general administrative need
Technical assistance and training	Full Time Equivalent	Description of technical assistance role and training program
Service agency stipend/allowance	Full Time Equivalent or fixed amount	Description of functions or tasks (i.e. data entry) covered by stipend/allowance Number/size of service agencies

Table 11. Personnel costs

❑ Programming

Programming costs are the personnel costs of assigning one or more computer programmer to perform this type of activity in areas relevant to the HMIS. Most common programming areas include: complex report generation, development of system interfaces and development of data conversion routines. Programming costs are normally expressed in terms of FTEs.

❑ Administration

Administration costs refer to the personnel costs necessary to conduct general administrative activities for the HMIS project. These costs are normally expressed in terms of FTEs.

❑ Technical assistance and training

Technical assistance and training refer to the personnel costs required to perform implementation and day-to-day technical assistance activities with participating agencies. These costs also involve the delivery of specific training programs. Technical assistance and training costs are normally expressed in terms of FTEs.

❑ Service agency stipend/allowance

The service agency stipend or allowance refers to the one-time personnel costs for HMIS implementation. These are personnel costs in the form of a stipend or allowance to the participating agency for specific implementation activities such as data entry or train-the-trainer preparation. These costs may be expressed in terms of FTEs or as a fixed one-time amount.

HMIS Space and Operations-Related Costs

Space related and HMIS operations costs refer to the community's need to accommodate central equipment and staff after alternative accommodation possibilities have been exhausted. There are three possible sources of cost: equipment, project management and central organization space. These also include reasonable expenses directly related to HMIS operation. Table 12 summarizes this.

Space	Requirement	Indicator
Equipment rental space	Rental space to locate central server equipment	Space requirement
Project management space	Office space to locate project management	Space requirement
Central organization space	Office space to locate Technical Assistance (TA), Data Analysis (DA) and other technical staff.	Space requirement

Table 12. Space related costs

Summary

The following table shows all the cost items identified in this framework. It is presented as a worksheet to show shared cost proposals.

Cost Item	HUD	Other
Equipment		
Central server(s)		
Personal computers and printers		
Networking		
Security		
Software		
Software licensing		
Server and Client		
Installation		
Support and maintenance		
Training		
Customization		
Supporting tools		
Services		
Training by third parties		
Hosting services		
Programming by third parties		
Customization		
System interface development		
Data conversion		
Security assessment and setup		
On-line connectivity (Internet access)		
Facilitation		
Disaster and recovery		
Personnel		
Project management or coordination		
Data analysis		
Programming		
Administration		
Technical assistance and training		
Service agency stipend/allowance		
HMIS space and operations		
Equipment rental space		
Project management space		
Central organization space		

Table 13. Costs worksheet (Shared costs format)

Recommendations and Guidelines for the Collection of HMIS Cost Proposal Data

It is recommended that the following information be collected. Exhibit I shows the recommended questions to gather the information consistent with the cost framework presented in these guidelines. Use these questions with Table 1.

Exhibit I. Recommended HMIS cost questionnaire

1. *Computer Servers.* For each computer server in your design indicate the following:
    a. Purpose of server.
    b. Organization hosting the server.
    c. Location.
    d. Cost.

2. *Personal Computers.* Indicate the following:
    a. Total number of staff working on the HMIS at the central organization(s).
    b. If requests are being made for equipment acquisition to be allocated to participating agencies, indicate the following:
        i. Number of participating agencies.
        ii. Allocation criterion used to provide the equipment.
        iii. Estimated total number of computers.

3. *Networking.* Describe the networking equipment and installation requirements for the following and indicate in each case the total number of computers being networked.
    a. The central organization(s).
    b. Other agencies or organizations for which funds are being requested.

4. *Security.* For each central server location that will contain a security set-up indicate the following:
    a. Brief description of location.
    b. Brief description of security set-up.

5. *Software type.* Indicate the type of software that your community is planning to implement (i.e. web-based, client/server, other).

6. *Software licensing.* Briefly describe the nature of the software licensing agreement that your community will pursue in terms of the following:
    a. Estimated total number of users.
    b. Estimated number of concurrent users (i.e. number of people accessing the system at one time).
    c. Estimated number of computers.

7. *Software installation.* Briefly explain the anticipated installation costs.

8. *Software vendor training.* Outline the training program proposed by the software vendor.

9. *Support and maintenance.* Describe the elements and terms of the vendor's support and maintenance program.

10. *Software vendor customization.* Describe the objectives of the software customization for which funds are being requested.

11. *Supporting software tools.* For each supporting tool indicate the following:
    a. Number of licenses being considered.
    b. Primary users.
    c. Name of software tool and major function.

12. *Training by third parties.* Indicate the following:
    a. Name of organization.
    b. Outline of the training program.
    c. Delivery format.

13. *Hosting and other technical services provided by third party.*
    Indicate the following:
    a. For hosting services (i.e. application or backup)
        i.   Occupancy fee.
        ii.   Service plan.
        iii. Physical location.
        iv.   Name and address of hosting organization.
    b. For other services
        i.   Type of service.
        ii.   Service plan.
        iii. Name and address of service provider.
        iv.   Costs of other services.

14. *Programming by third parties.* Indicate the major programming projects or planned activities.

15. *Security assessment.* Indicate the organization performing the assessment and the nature of the task.

16. *On-line connectivity.* Indicate the types and total number of connections being sought with this request.

17. Facilitation. Indicate the following:
    a. Name and address of facilitator.
    b. Purpose or issues for which facilitation is being sought during the implementation process.

18.   Disaster and recovery. Describe the disaster and recovery plan indicating the services that will be provided by third parties and associated costs.

19.   Personnel. For each of the following items indicate the Full Time Equivalent request and attach a formal job description.
    a. Project management.
    b. Data analysis.
    c. Computer programming.
    d. Administration.
    e. Technical assistance and Training.

20.   Space and operational requirements. Indicate the space requirements that your community is applying for. Also, indicate the operating expenses directly related to the HMIS.

Guidelines for use of the Questionnaire and Cost Framework

The questions in Exhibit I were designed to capture information about the possible costs communities will incur. These questions are consistent with the cost items identified in the framework presented in this document.

Question 1. Servers. Use this question with Table 2. The application should be able to justify the total number of servers in terms of a) the type of system being implemented (i.e. Information & Referral, System-wide and Case Management), b) whether these components are integrated or not, and c) the relative size of the community. Table 2 shows the typical number of servers for each case. By asking questions regarding purpose of the server(s), their location and cost, the reviewer can determine the accuracy of the request.

Question 2. Personal Computers. Use this question with Table 3. The application should contain information about computing requirements for the central organization(s). The central organizations are the organizations that will house those individuals who will be directly involved in implementing and providing operational, technical assistance and training to participating agencies. Individuals that perform programming and data analysis work also fall under this category.

If the community requests funds for the allocation of computers to participating agencies, the application must describe the method used by the community to determine the request. Similarly, the application should indicate the total number of agencies receiving funds or equipment as well as the estimated total number of computers.

Question 3. Networking. Use this question with Table 4. The application should contain enough information to demonstrate the networking equipment and installation requirements. Networking requests may come in two categories. The first are the requests to network the computers of those individuals who will be working at the central

organization(s). The second are the requests to network specific participating agencies that due to their size will require assistance or funds to network their computers internally. The reviewer should make sure the responses to questions 2 and 3 are consistent.

Question 4. Security equipment. Use this question with Table 5. The application should be explicit enough to convey the total number of firewalls that will be installed. Location and number of servers normally determine the number of required firewalls. Table 5 shows the typical numbers under each possibility. The reviewer should make sure the responses to questions 1 and 4 are consistent.

Question 5. Software type. The type of software determines many other cost items. For example, web-based applications will require much more stringent security measures and corresponding costs. So, an application requesting funds for a web-enabled application will normally also include costs in security set-up, security assessment and hosting services. Other types of systems are client/server applications that require the installation of the program on each personal computer located at participating agencies. These type of system may require more training and technical assistance.

Question 6. Software licensing. Use Table 6 to categorize the type of software licensing agreement. At the time of submission, the application may not contain all the details of the software licensing agreement. However, asking questions regarding numbers of users, concurrent users and computers or seats, will give a clear indication of the veracity of the requested amount.

Question 7. Software installation. Regardless of type of system, most applications will include a cost associated with setting-up the application for use in the community. The reviewer should be given enough information to determine the veracity of the projected software installation costs.

Question 8. Training by the software vendor. The applicant must be able to outline basic information about any training program offered by the software vendor. The application should articulate the fundamentals of a proposed training program.

Question 9. Support and maintenance. The application should include the terms of the support and maintenance program, and a description of coverage.

Question 10. Software vendor customization. This cost item should be assessed with great care. The application should be able to present a convincing rationale of why the software customization is necessary. The application should at least describe the objectives and expected outcomes of the customization project.

Question 11. Supporting software tools. Use this question with Table 8. This table describes the most common types of supporting software tools. The application must explicitly state the tools being considered for acquisition, their function, which are their intended users and the numbers of licenses. Personnel working at the central

organization(s) will normally be the primary users. Therefore, if a request to extend the availability of these tools to the entire network of users is made, then the reviewer should closely examine the veracity of such request.

Question 12. Training by third parties. The application should include enough information to demonstrate that a training program for which funds are being requested has been properly thought out. Part of the response to this question should include a brief outline of the training program and an explanation of the method(s) by which the program will be delivered to participating agency members.

Question 13. Hosting and other technical services provided by third parties. Use Table 9 in conjunction with this question. If the application states that the system will be hosted by a third party, then enough information should be supplied to understand the nature of the hosting agreement. This information should describe the fee, service plan, physical location and name and address of the hosting organization.

If the community requires other services, the application should describe the type of services, a statement of the service plan, and the name and address of the service provider.

Question 14. Programming by third parties. If the community proposes to engage independent contractors to perform programming tasks, the application should explicitly describe the anticipated programming projects or activities.

The reviewer should keep in mind that requests for funds for programming purposes can be found in work assignments to the software vendor, through third parties, and by the use of a staff person hired exclusively for this purpose.

Question 15. Security assessment. Any application requesting funds for security assessment must contain detailed information about the specific tests that will be conducted and by whom.

Question 16. On-line connectivity. The application should contain enough information regarding the types of connection being considered and the total number of connections under the request for funds.

Question 17. Facilitation. The application should contain enough information to describe who will be conducting the facilitation processes. In the same manner, the application should briefly outline the purpose of or the issues for which facilitation is requested.

Question 18. Disaster and recovery. The application should contain enough information to identify what organization will be conducting backup procedures and what will be the mechanism by which HMIS will continue its operation in the event of a major interruption to services at the primary server organization. Enough cost information

should be supplied to understand the role of any third party providing such disaster and recovery services.

Question 19. Personnel. The application must describe the details of any personnel requests for HMIS implementation. The common roles for which communities might request funds could include:

> Project management
> Data analysis
> Computer programming
> Administration
> Technical assistance and training

In addition, an application may request funds to support system operation at each agency. This may be done in the form of an allowance or stipend to be allocated to each participating agency.

Question 20. Space and operations. Requirements for space can be articulated for some or all of the following concepts:

> Equipment rental space
> Project management space
> Central organization space

Applications requesting funds to contract a comprehensive hosting solution will normally include any space requirements under the hosting category. Operational costs must be reasonable and pro-rated when they are mixed with other non-HMIS activities.