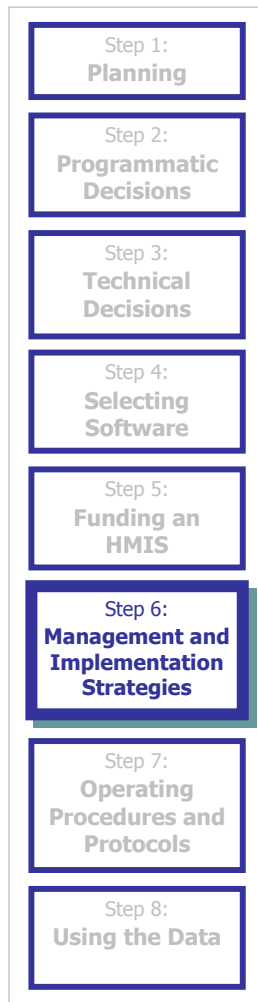


## Step Six: Implementing the System—Management and Implementation Strategies



Once software has been selected and negotiation with the vendor has begun, communities can begin to plan for system implementation. This process involves many decisions and several stages. First, communities must settle on a management model, including selection of a local organization to coordinate the system. Then they can develop an implementation strategy and begin execution of the system. Many interrelated operations issues need to be addressed during the same timeframe as system implementation, such as the development of formal standard operating procedures (SOPs). Operational issues are discussed in Step Seven, but they should be thought of hand-in-hand with the tasks discussed in this step. This linkage is particularly true for system management decisions, since structures defined for implementation purposes need to evolve into the operations management structure. This step begins with a discussion of the various management structures, and then moves to implementation strategies, phases, levels, and lessons learned.

### Management Models

There are a variety of models for HMIS staffing and management. Although there is no single right way to structure system administration, each model offers advantages and disadvantages that may make it more or less appropriate depending on a specific community's circumstances. Two management types are presented on the following pages. One involves a local organization maintaining primary responsibility for coordinating the HMIS. The other uses outside vendors to carry out much of this work. Both models require that the community identify a central organizing entity to oversee the system and guide HMIS policy development. Many types of entities can be appropriate for that role—a local government, university, not-for-profit, or homeless consortium partner. The matrix on the pages that follow describes the two structures and details some issues to consider.

#### Identifying the central HMIS organization

Finding the right partner to act as the central HMIS organization is critical to the success of the project. The entity must understand local homeless issues. It must bring certain qualities to the table (e.g., trust, objectivity, organizational stability, and leadership) as well as certain skill sets (project management, technical capacity, and fiscal and contractual competencies). Although some skill deficits can be addressed through staffing alternatives, such as outsourcing with technical contractors; others must be provided through the central organization. Ideally the organization would be generally accepted across the community and viewed as neutral (i.e., without a vested interest in HMIS practices).

Most often, a community identifies an existing agency to act as the central HMIS organization, such as a government/funder, a university/researcher, a provider and/or consortium of providers. As a first step, a community should assess its existing organizations to identify potential central partners.

Some questions to consider include:

- ◆ Is there a natural leader/champion of the process?
- ◆ Does an organization already act in a central coordinating role for planning, funding, or related purposes?
- ◆ Is there an organization that operates a similar kind of system for other networks?
- ◆ Does the proposed organization have a vested interest in the resulting data and/or improved service delivery that might strengthen and sustain their commitment to the project?
- ◆ Is the proposed organization neutral, and do other providers trust it?
- ◆ Does the proposed organization have the appropriate technical and organizational capacity?
- ◆ Can the organization bring in-kind or other resources to help support the project?
- ◆ Are there risks about the proposed organization? Fiscal? Organizational?

In many communities, local government entities or major funders assume this role. These bodies often have access to technical and financial resources as well as in-depth knowledge of the local service provider community. As program funders, however, they may be viewed as suspect by participating agencies. Program consumers may have intensive fears about privacy protections. Conversely, these organizations have the power to enforce participation and thus ensure that the HMIS achieves a high level of data representation.

Universities and research groups are often seen as objective and may have experience with homelessness and technical issues. The primary goal for these organizations is usually attaining quality data from the system. They are not concerned with the distribution of operating funds across service agencies. These types of organizations are usually required to conform to institutional review board policies that protect the privacy rights. It may, however, take longer for community members to become comfortable working with a central organization that is viewed as an outsider.

In other communities, a local not-for-profit consortium partner is the best fit for this role. Again, the organization should be well respected and trusted across the community. Often this group will be a large homeless service provider with internal MIS staff. As such they are familiar with the obstacles that can be faced when implementing an HMIS at the site level. Staff from other local organizations may be more receptive to technical assistance and training from people they view as colleagues. These organizations also have an up-close understanding of privacy concerns as well as relationships with local consumers. However, it is critical that the central organization be respected across the entire community of service providers and policymakers as well as consumers. For example, a large individual shelter may be well known and valued among individual providers but not trusted by family and domestic violence programs. Also, if the HMIS is used to support funding decisions, a service provider may be perceived as having a conflict of interest.

If none of these organizations are appropriate, an independent entity can be created to support the HMIS. However, there are significant challenges to creating and supporting a new entity. Alternatively, a community can look regionally, statewide, or to neighboring jurisdictions to think about creating a shared infrastructure to manage the project that might achieve cost savings and greater organizational capacity.

### HMIS staffing roles and responsibilities

Despite the type of central organization and the scope of their role, this group is responsible for all planning, coordination, and management related to the HMIS. The central functions may be undertaken by central organization staff and/or by project consultants.

The primary roles and responsibilities include, but are not limited to the following:

- ◆ Project management (must be provided by a local entity):
  - Provide or coordinate human and financial resources needed to support the quality, accessibility, and function of the system.
  - Monitor progress of implementation process.
  - Facilitate stakeholder forum(s) to inform HMIS operations and policy development.
  - Coordinate establishment of policy and procedures governing HMIS access, use, and data dissemination.
  - Establish, review, and monitor guidelines and procedures of HMIS to ensure security and confidentiality of information within the system.
  - Assure that only trained, designated staff have access to the data. Assign log-on and user licenses to end-users.
  - Monitor security and confidentiality requirements for participating agencies.
  - Monitor integrity of agency input of data into HMIS.
  - Monitor progress of expenditures and coordinate system funding and cost-sharing.
  - If other functions are outsourced, provide oversight of HMIS contractors.
- ◆ System administration (SA):
  - Provide operation, security, maintenance, system auditing, and technical support of HMIS central hardware, software, and connectivity. Penetration testing (testing system security) by an independent entity is encouraged.
  - Set up and manage user accounts, access levels, and passwords (If SA is outsourced, some aspects of account administration may be managed locally.).
  - Host data—storage, back up, and security.
- ◆ Training and technical assistance:
  - Provide technical and user support for HMIS software, including agency account set-up, system monitoring and testing, problem diagnosis and resolution, and routine software and information maintenance.
  - Provide and coordinate ongoing training and technical support for the system. Support the end user in the use of the software, troubleshoot hardware and software problems by phone and onsite.

- Coordinate regular end-user meetings to discuss software updates, data entry, report writing, and system management issues.
- ◆ Communication:
  - Serve as initial point of contact for end-user questions and concerns.
  - Provide ongoing outreach to agency and community leadership to cultivate and maintain support and understanding of HMIS initiative.
  - Maintain contact with software product developer to ensure consistent and uniform communication among product support personnel and community.
- ◆ Reporting:
  - Generate information on the community's homeless and housing situation for community planning, advocacy, and funder reporting requirements.
  - Assist end users in the creation of custom reports and queries.
  - Monitor and approve the dissemination of data collected through the HMIS.
  - Provide regular aggregate data reports to agencies and greater community.

**A Note for Small Jurisdictions:** It may be possible to divide all of these functions between one or two individuals. These roles require the following HMIS skill sets and knowledge base:

- ◆ Experience in information technology.
- ◆ Knowledge of and experience with relational database management and database administration.
- ◆ Ability to translate among agency information needs, database structure, and functions required.
- ◆ Knowledge of Internet browser interface.
- ◆ Ability to troubleshoot and resolve software and hardware problems
- ◆ Experience in quantitative data analysis.
- ◆ Experience in strategic planning.

Often small jurisdictions may have particular challenges in recruiting staff and justifying the need for a system manager to work full-time on the HMIS. Yet, frequently, it is not realistic or recommended to assign a general staff person to conduct the system administration functions. Instead, small jurisdictions may try to identify other agencies with technology functions that might act as the system administrator on behalf of the HMIS consortium, which can maintain oversight of the policy decisions through an HMIS steering committee (or other advisory structure). Alternatively, it may be especially cost-effective for a small jurisdiction to outsource the data hosting, system administration, and technical support functions to the software vendor or other contractor. Or it may make sense to investigate area interest in a regional or statewide system that can generate system administration efficiencies and share costs among all of the jurisdictions.

## Two management models

Jurisdictions around the country have approached staffing an HMIS differently, with some hiring full-time project staff and others using a combination of existing staff to oversee project consultants. There are advantages and disadvantages to both of these approaches, some of which are described below.

### ◆ Central staff

The central HMIS organization hires all system administration staff as direct employees of the organization. The central organization performs central server functions, accounts management, data storage and analysis, system security, site technical assistance, and training. Even with this model, project consultation is often used to supplement staff in particular areas (e.g., system assessment and set up, security testing, and legal expertise). As noted above, this approach requires that the community identify an entity as the central organization, such as a government, university, not-for-profit provider, or homeless consortium partner that is respected by all of the HMIS participants.

### ◆ Outsourcing model or hybrid

The primary HMIS system administration services are outsourced to an outside vendor—frequently an HMIS company or a local contractor. In this model, the central HMIS planning, coordination, and data analysis activities often reside with a community organization (and/or CoC coordinator) that also supervises HMIS contractors. There are endless variations on employee-consultant management schemes. Most often, contractors are used for high-end technical tasks (e.g., programming, data conversion) and/or tasks that can be performed more efficiently in a larger-scale environment (e.g., system administration, data hosting). Consultants can also help manage special projects (e.g., meeting facilitation, data analysis, security testing). One central entity needs to contract with the independent consultants and/or vendors, and strong communication is critical.

## Exhibit #2 HMIS Staffing Models

Model Type	Central Staff	Outsourcing Model or Hybrid
<b>Advantages</b>	<ul style="list-style-type: none"> <li>+ HMIS planning can be closely aligned with system administration.</li> <li>+ Based on ongoing technical assistance and training and data cleaning, project manager has closer working relationship to agencies. Problems can be identified more quickly.</li> <li>+ Partner agencies may have more trust in a local organization and approach staff with questions before they become problems.</li> <li>+ Central organization may provide in-kind staff support and/or equipment.</li> </ul>	<ul style="list-style-type: none"> <li>+ If a strong coordinating entity for homeless issues already exists but lacks appropriate HMIS expertise, technical consultants can provide the necessary skills to support the HMIS within the existing structure.</li> <li>+ An outsourcing or hybrid model may offer expertise that is otherwise unaffordable or not available within the community.</li> <li>+ If there is not a natural central entity, outsourcing may eliminate difficult power struggles.</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>- Too often, staff members have excessive work demands and do not have enough time to devote to HMIS operations.</li> <li>- It is difficult to balance staff positions with workload (e.g., quickly hire staff and/or reduce staff if work stabilizes).</li> <li>- Staff turnover can create voids in support and/or staff who are thrust into positions beyond their capacity.</li> <li>- It can be difficult to recruit technical staff at social service wages.</li> <li>- A full-time system administrator may not be needed, but it may not be feasible to get the necessary technical skills from a generalist staff member.</li> </ul>	<ul style="list-style-type: none"> <li>- The pieces may be difficult to juggle if spread across multiple agencies without strong communication.</li> <li>- Community providers may trust so-called experts too readily and may not watch to be sure appropriate security and protections are in place.</li> <li>- Technology, instead of community needs, may drive solutions.</li> <li>- Contractors may not be familiar with or sensitive to local needs. Similarly, it can be hard to know if expert advice is appropriate to meet community needs.</li> <li>- Costs may spiral with scope creep, as business development is part of a vendor's goal.</li> </ul>

## Implementation Strategies

Once agreement has been reached about the central organization and management model, communities are ready to begin planning for implementation. This step presents four potential implementation approaches, including cutover, parallel, phase-in, and pilot approaches.

### ◆ Cutover implementation

Cutover implementation is the replacement of an existing system—manual or automated—with a new system at a scheduled point in time. It assumes that the cutover process takes place all at once with the implication that all resources and preparation are in place throughout the network of participating agencies.

Because of their forceful and comprehensive nature, cutover implementations can only be done when the conditions in the community are favorable to the HMIS initiative—there are few or no uncertainties about how to proceed, and willingness and preparation throughout the continuum are evident. Also, system management must be well organized. This type of implementation suits smaller jurisdictions where there is clear consensus about the initiative and scope of the HMIS use and resources are in place.

◆ Parallel implementation

Parallel implementations are characterized by the fact that the community has not yet developed a significant sense of confidence, trust, or understanding of the HMIS. Therefore, the existing methods or systems continue to be operated for a probation period. During this period, current systems (paper and MIS) are used side-by-side with the new HMIS until a level of trust or confidence in the system is reached, justifying replacement of the old system.

In parallel implementations, it is important to provide enough data elements for stakeholders to compare in order to assess performance and results. The new system generally will not become fully operational until a designated group is satisfied with its performance and trusts that the old system can be safely abandoned. The tandem performance requirement is most often due to user-related issues, rather than technology. In parallel implementations, the community must recognize that operating two systems simultaneously places a burden on staff.

The conditions that tend to be more appropriate for this kind of approach are those characterized by small to medium jurisdictions that have a rather simple HMIS scope but have not yet addressed all the issues involved in implementation. For example, although some members of the community may be ready to proceed, consensus has not yet been reached among all of the partners. Planning may have begun with a narrow group of stakeholders. Those who are newer to the process may need some time to implement policies and attain buy-in from their agencies.

◆ Phase-in implementation

Phase-in implementation refers to the process of bringing in the HMIS system in phases over a prolonged period of time. For example, phases can be defined in terms of HMIS components or functions (e.g., I&R, intake, case management). Alternatively, phases can be defined in terms of geography (e.g., city, northern counties, southern counties). Yet another criterion may be program types (e.g., emergency shelters, transitional, permanent, services only).

In phased implementations, the focus of attention is on managing scarce resources to conduct and support the deployment process. This approach is suitable to large continua or groups of continua where planning has been successful and there is a great deal of support for the HMIS initiative. However, the implementation is complex due to the size of the project or funding constraints.

◆ Pilot implementation

Pilot implementation is the process of deploying the HMIS with a particular set of programs to resolve outstanding issues or questions. The pilot's main focus is to produce enough evidence, data, or experience for learning to take place. Once the pilot has proven to produce the requisite evidence, the final design decisions can be made, and implementation can expand to other organizations.

Since pilot implementations are essentially experimental, this approach makes sense when the conditions surrounding the HMIS initiative are complex and uncertain. For example, in a community where the participation of domestic violence programs is critical but privacy and security issues have not yet been resolved, the HMIS could be piloted first with programs for which security is not such a grave issue. These procedures could be further specified while others are beginning to use the system. Conversely, the HMIS could be piloted with the domestic violence programs. When confident in its efficacy, particularly in terms of privacy and security, these programs would then be ready to be spread to the wider community. This strategy also

works well when funding sources have not yet been identified. Results can be used to influence a funder that the effort is, indeed, worthwhile.

An example of a pilot implementation is provided in the community example described at the end of Step Three.

The table below compares these approaches by certain characteristics: the principle behind the implementation approach, the conditions that make the approach applicable, the thrust or driving force behind the initiative, and how resources are or can be deployed.

### Exhibit #3 Choosing the Best Approach

	<b>Cutover</b>	<b>Parallel</b>	<b>Phase-In</b>	<b>Pilot</b>
<b>What is the principle?</b>	Old systems are replaced with the new system at one transition point (on a certain date).	Old (i.e., manual) and new systems operate in parallel for a set period of time.	The new system is introduced in phases over an extended period of time.	The system is first tried out within a subset of the population prior to full implementation.
<b>Under what conditions and risks is this approach appropriate?</b>	Conditions are simple and certain. Clear and specific.  The risk of implementation is considered low because most of the necessary elements are in place.	Conditions are simple and clear but evolving.  The risk of implementation is moderate because there are reasonable resources and procedures in place.	Conditions are complex but certain. Clear but evolving.  The risk of implementation is high because there are many constraints.	Conditions are very complex and uncertain.  The risk of implementation is high because there are many unknowns.
<b>How does it move forward?</b>	Proceed according to set schedule.	Proceed by comparing and building trust in the new system.	Proceed by managing use of resources.	Proceed by experimentation and learning.
<b>How are resources deployed?</b>	All resources are in place at the time of implementation.	All resources are in place with capacity to handle double operation.	Resources are insufficient to handle cutover implementation. Staff must be optimized.	Required resource levels cannot be defined until all design issues are resolved based on initial operation.

The table below shows specific indicators that a community can use to analyze their implementation environment, in order to identify the most suitable implementation approach. This list of indicators is not meant to be exhaustive, but rather represents key points to guide communities in selecting an implementation strategy.

## Exhibit #4 Readiness Indicators

Indicator	Clear and Specifiable	Evolving	Uncertain
<b>Existing system</b>	One system in use at several agencies.	In use at a few or a couple of agencies.	No existing system used by more than one agency.
<b>Consumers</b>	Small number	Small/large number	Large number
<b>Provider agencies</b>	Few, similar	Few heterogeneous or many similar	Many, heterogeneous
<b>Other organizations</b>	One	Several	Many
<b>Jurisdictions</b>	One	One or two	Two or more
<b>Project scope</b>	Single application	Single or several applications	Several applications
<b>Project objectives</b>	Defined	Outlined	Still unclear
<b>Consensus and trust among partners</b>	Clear	Apparent	Nonexistent
<b>Local resources</b>	Identified and available	Outlined	Unidentified
<b>Resource roles</b>	Clear	Unclear	Unidentified
<b>Recommended approach</b>	<b>Cutover</b>	<b>Parallel or Phase In</b>	<b>Pilot</b>

## Implementation Levels and Phases

Whether a community elects to begin with a pilot or move directly to cutover implementation, the process will involve a great deal of work on at least two levels—communitywide and site implementation. The implementation process should be carefully managed to coordinate the various aspects of implementation, develop timelines and benchmarks, and monitor progress and barriers. At both the community and site levels, there are several phases of program execution.

### Communitywide implementation

At this level, most of the work will be accomplished by the central organization, with a great deal of stakeholder participation. As discussed in Step Seven, this organization will guide member agencies through developing a set of SOPs. This process will describe the detailed workings of the system as well as agency and staff requirements. SOPs concerning issues such as agency participation agreements and agency and central server security protocols must be in place prior to data actually being entered in the system. In addition to policy development, the central organization must either set up its central server(s) or finalize outsourcing agreements with vendors. In most cases, this process will involve resource acquisition, including the following activities:

- ◆ Purchasing, setting up, and testing the central server(s).
- ◆ Set-up and testing of the HMIS application.
- ◆ Customization and testing of these unique features.

- ◆ Networking and connectivity at the central organization, as well as providing support for sites in this area.
- ◆ Hiring and training HMIS personnel.
- ◆ Developing a training curriculum and plan.

After the preparatory work is complete, actual implementation can begin. Implementation provides an excellent opportunity to involve consumers beyond advisory boards and focus groups. Some of the more complex aspects of HMIS implementation may be too technical for the average consumer, but exposing system implementation issues to interested individuals will, over time, produce greater interest in learning more, cultivate peer trainers or advocates, and encourage some to seek training to attain employment in this field.

The first phase, HMIS component implementation, involves introducing participating agencies to each part of the system and taking them through the implementation of each HMIS component. This phase is particularly important in continua where the HMIS initiative includes both I&R and case management. Systems that encompass an I&R component must develop policies for the I&R directory, including updating procedures and training. The case management component will also require training of site personnel, assisting agencies in implementation and report production, and development of reporting specifications at the aggregate level.

In Phase 2, full implementation, the central effort is to transition the majority of the participating agencies into full implementation or regular use. Activities involved in this phase include developing specifications for aggregating and extracting data from the central server, beginning to produce reports, and providing ongoing training and technical assistance to sites.

The third and final phase at the communitywide level is making the system is operational. The activities involved in this phase represent the ongoing level of central work required to maintain the community HMIS. At this point some of the central effort will be devoted to providing operational support to participating agencies but most of the central effort is devoted to data analysis and reporting. Activities include:

- ◆ Assisting sites with complex reports and troubleshooting.
- ◆ Refining basic server administration, security, and backup.
- ◆ Working on upgrades and improvements to the HMIS system.

### Site implementation

Preparation at this level begins with the identification of personnel at each site who will be responsible for overseeing the implementation and maintaining communication with the central organization. They can be identified using the information collected in the technical infrastructure assessment survey (Step Three). At each site, SOPs have to be reviewed and agreed upon (Step Seven). Where appropriate, sites need to execute data sharing agreements using the procedures established by the central organization. Agencies need to acquire and install any necessary equipment as well as attain networking and connectivity access. Where appropriate, HMIS software needs to be installed at each workstation. The central organization will provide user names and passwords. Agencies also need to develop procedures for data entry (e.g., Will intakes be done on computer or will overnight staff input hard copies?) Finally, existing data need to be converted to the new system.

After preparation is complete and data entry has begun, sites will enter Phase 1, data collection mode. During this phase, modest amounts of data are collected and a limited number of transactions processed. Agencies in this stage will focus most of their efforts on data entry, and on training staff on the new system and procedures.

Participating agencies proceed to Phase 2, referral and case management mode, when all agreed upon data are entered regularly on many clients and many transactions are recorded. The HMIS is beginning to be used to support service-planning processes. Agencies undergoing Phase 2 focus their time and resources on using the system as a tool to enhance service delivery.

Next, agencies proceed to Phase 3, administrative mode. At this point the HMIS is utilized to support administrative or reporting tasks. For example, nightly bed lists are processed with the system and the HUD APR is generated. Agencies undergoing Phase 3 will normally concentrate some of their effort on using the system to improve administrative and reporting tasks.

Finally, sites reach Phase 4, fully operational, when the system has been reasonably integrated into the daily operations of the agency and the agreed upon coverage has been reached. Agencies in Phase 4 require little assistance from the central organization.

## **Lessons Relating to Implementation**

To ensure the smoothest possible implementation process, community stakeholders should be aware of some of the many natural dynamics that occur during this process. Most of these issues have to do with deliverables and their timing (e.g., when things are expected to happen, but often do not). In most cases, implementation is often more difficult and involved than initially anticipated.

### Understanding progress during implementation

The notion of progress in information systems is very elusive. There are many intangibles that consume resources. Some of these intangibles involve the nature and complexity of relationships that are created among implementers, agency staff, administrators, and other interest groups. Activities designed and undertaken to move groups of stakeholders from one state of being to another can be overwhelmingly costly and lengthy. For example, debate and decisions about how to handle confidentiality or data sharing in practice may take considerable time. These tasks are referred to as *soft* activities because they lay the groundwork but do not produce concrete deliverables. Instead, they build trust and later provide direction for system design and content for community SOPs. These activities should be planned for and documented.

### Handling delays and unforeseen barriers

Barriers to implementation will present themselves and delays will occur. For example, equipment may not arrive on time, trained staff may leave the agency, and meetings to complete security protocols at an agency can be cancelled. These examples provide but a glimpse of the many issues that may routinely generate barriers to timely implementation. Instead of allocating extra time for these issues, it is advisable to properly document progress and delays according to each agency's implementation schedule.

### Dealing with change

HMIS implementation projects are about change—change in procedures and operations—but most importantly, change in the manner in which information is collected, processed, maintained, and

disseminated. With computer-based applications all of these aspects alter the manner in which administrators, staff, and caseworkers conduct their business. Consumers, and staff relationships with consumers, will be directly affected. Sensitivity to these issues also takes time, and client responses to the new system should be respected. The commitment required by staff responsible for implementation and operation cannot be downplayed. This process must be brought about within the continuum as a whole and within each participating agency over time.