

Division of Sexually Transmitted Disease Prevention
Business Process Management Model for STD Prevention

Deliverable 4b

Current Business Processes

Contract GS-10F-0087N



EXECUTIVE SUMMARY

The following document presents the current state of Sexually Transmitted Disease Prevention processes within CDC funded grantees, as identified by representatives from the Division of Sexually Transmitted Disease Prevention, State and Local Health Departments, and external partners. It also contains a current state analysis of CDC grantees as organizations, including a summary discussion of culture, organizational design, partnerships and technology support. This document builds on the models outlined earlier in the initiative. The analysis of STD processes, combined with a discussion of the state and local organizations, provides a summary of state and local health department grantees. This document does not seek to 'average' the information from all grantees, but instead to provide a picture of the range of observed current states for a variety of grantees. Though this document focuses on current state, it will at times provide a preview of future state implications based on discussions with grantees. A more detailed future state analysis will be presented in the next deliverable in April. The information here will be compared to the future state designed by stakeholders to inform the STD Program Area Module, implementation support needs and ultimately a high-level implementation plan.

The document below is organized into the following sections:

- Background: Summary of the initiative and deliverables
- Method: Outline of activities employed to gather information and input
- Discussion
 - Current state organization: outline of current state of organizational design, culture, external partners, technology support and political considerations within grantee organizations
 - Current state processes: Outline of current state STD Prevention processes identified within grantee organizations, categorized through the business processes model identified in sub-task 3
- Conclusion: Outline of initiative next steps
- Appendices
 - Current state process flows
 - Interview summaries, additions to the those submitted with sub-task two

BACKGROUND

The Division of STD Prevention (DSTDP), along with a sample of CDC funded grantees, is conducting a business process modeling initiative to create a common, but flexible, best practice model for STD Prevention. To date, sub-tasks 1-3 are complete. Deliverables thus far include: a vision for STD Prevention for CDC funded grantees, objectives for STD Prevention, guiding principals for STD Prevention and organizational assessments and recommendations. In addition, a business process model, or a framework for organizing STD Prevention activities, was designed as part of sub-task 3.

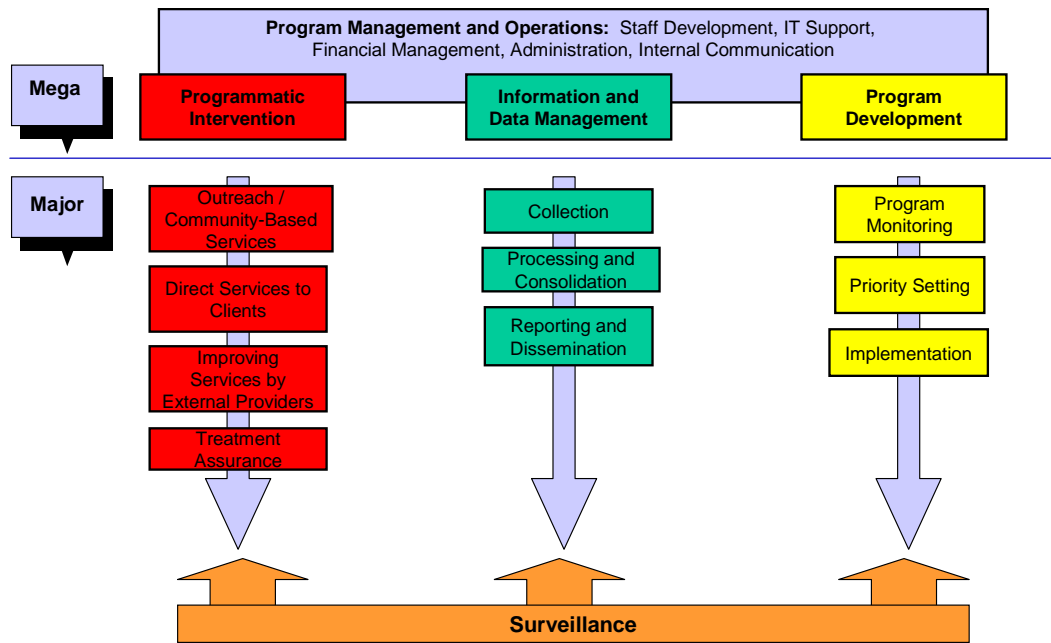
The attached document presents a high-level current state analysis of STD Prevention activities within CDC funded grantee organizations. The purpose of this document is to facilitate the development of a best practice STD Prevention model, inform the development of the STD Program Area Model (PAM) and to identify methods to support the implementation of the PAM and other electronic surveillance applications. The current state information will be compared to the future state design information to be

completed in March 2004, in a gap analysis in April 2004. The gap analysis will be detailed in an implementation plan, and accompanying support materials to be completed September 2004.

The document presents sub-task 4B:

- Documented current business processes aligned with business functions identified in Task 3. Associated definitions, supporting explanatory materials, and flow diagrams are expected

The picture below illustrates the inputs from sub-task 3: The business process model. This model is a framework for STD Prevention, a way of organizing the work that is done in state and local health departments. The framework will be used to discuss both the current and future state. Throughout the initiative work will be addressed in one or more of the major-process categories below. This document will present a current state discussion within these categories. Full definitions and activities for each process can be found in deliverable 3a and 3b.



In addition to current state business process analysis that will be presented through the BPM shown above, this document presents a current state organizational analysis of the CDC funded grantees. Considerations such as current culture, organizational design, community partners and technology support are key to identifying the steps necessary for implementation of a best practice model. Understanding the state and local organizations will be a key component of the gap analysis and integral to the implementation plan.

METHOD

12/20/2005

The BPMM team employed a collaborative approach to identify current state process and organization information. Internal and external stakeholders were engaged in interviews, site visits, facilitated sessions, and follow-up meetings to provide input, review materials and give feedback. The team conducted interviews with over 50 representatives from the DSTDP, State and Local STD Health Departments, Association of Public Health Labs, and Johns Hopkins School of Medicine.

In addition they conducted a series of interviews during site visits with State and Local Health Departments in Massachusetts, Washington, Seattle-King County, Tacoma and Philadelphia (including clinic staff, surveillance staff, Disease Intervention Specialists (DIS), IT staff, epidemiologists, medical directors and administrators). Moreover, the team also incorporated their experience from having worked with other health departments on prior initiatives. All materials have been circulated back to internal and external stakeholders for review, to ensure that they are accurate and comprehensive.

DISCUSSION

The purpose of examining the current state of the state and local health departments is to inform a gap analysis between current and future state. The gap analysis goes beyond identifying functional requirements; it must set the groundwork for implementing the system. It is vital not only to examine *process*, comparing how activities that currently take place will now take place in the future, but also to identify what new activities will take place, and how changes will be implemented.

Much of the success of implementation rests on the ability of entities to change and accept a new model. Therefore, it is vital not only to create process flows and functional requirements, but also to examine organizational design, culture and support mechanisms for state and local health departments.

Consequently, this section is divided into two segments:

- **Organization.** Discusses the current organizational structure and culture, internal support for technology initiatives, partnerships that support expanded prevention activities and political considerations effecting grantees
- **Process:** Provides detail on the STD prevention BPMM framework. Outlines each major process and illustrates current state examples from grantees of their current STD prevention processes. This section details the current state process flows attached

The 65 different funded project areas are each unique, with different programs, activities, organizational structure and needs. Consequently, the STD PAM must be flexible to accommodate differing needs (customizable fields, locally defined security, etc). This resonates with implementation needs as well. For example, small states with minimal dedicated IT staff may need more IT support and less customization. Larger states with many local health departments may require more help setting up complex algorithms for security or a complex array of reports. This document seeks to illustrate the 'differences' observed in grantees, which must be considered, when designing a future state. In both sections, observations from varying grantees will be highlighted to illustrate these differences. Although these are clearly not exhaustive lists, they can help identify areas in which the process and the support mechanisms must be flexible, and areas in which the process and support mechanisms can be standardized.

Current Organization:

Organization seeks to identify the internal and external structures that support STD prevention practices. The text below illustrates the mechanisms that support the programmatic activities of state and local health departments throughout all of the prevention processes. Although the management and administrative functions are not examined here, the categories below present other crosscutting issues that will be vital to analysis of readiness to implement an integrated disease surveillance system:

- **Organizational Design:** Who is accountable for STD Prevention activities, how are staff structured within the health department, what is the level of centralization of STD services, and who is accountable for which activities between state and local health departments
- **Culture:** How do staff interact with one another, what is the relationship between the CDC, the state health department and the local health departments, and what barriers exist due to perceptions between and within entities. How will integrated HIV/STD programs work. In addition, what philosophies permeate the health departments, are they autonomous, independent, collaborative and how are people rewarded, measured and incented.
- **External Partners:** Who are the partners who take part in the activities of grantees, how do they participate and how do grantees and partners support one another
- **Technology Support:** What infrastructure, applications and staff support STD departments and their work
- **Political Considerations:** How do legislation and funding support STD Prevention activities and to what degree do state activities promote compliance

Organizational Design:

The organizational Design is defined as the structure of the Department of STD, as well as the relationship between the state and local health departments. This includes their respective responsibilities as well as the formal and informal ways in which people interact with each other to achieve defined goals

Grantee Structure

The organization of the DOHs often mimics the CDC's organization, with STD departments separate from other programmatic areas. Although usually a component of the Communicable Disease division, STD stands alone, separate from infectious disease activities (Chicago, Philadelphia, MA). The exception seems to be with HIV, as organizations have staff members that support both programs, with investigation and case management activities (North Carolina, Texas). Some innovative combinations were observed. In Tacoma, all STD staff are cross-trained in other areas, such as HIV, TB and Hepatitis, and as emergency response teams (HIV counseling, TB tests, blood draw, counseling, outreach, Hepatitis vaccine, needle exchange, court orders, jail testing/screening). In TN as well, field staff are cross-trained for multiple communicable disease roles, as well as in bio-terrorism-related work and other epidemiological efforts such as food-borne outbreaks. This will become increasingly important as the CDC and HHS unroll monies and field staff for emergency preparedness, since staff must be trained, but are not needed in that capacity on a daily basis.

The branches within the STD Departments follow a generally consistent pattern. Often the division is divided into: Clinic, Surveillance, DIS and Epidemiology. Staff members serve in one main capacity. In some instances, surveillance and DIS staff are combined, with one group responsible for receiving case reports, contacting providers to identify follow-up and contacting patients for counseling/treatment assurance (Tacoma). However, separate departments were usually observed, with Surveillance responsible for receiving cases and contacting providers/labs, and DIS responsible for contacting cases, based on follow-up protocols, and conducting counseling and partner treatment (North Carolina, MA, Chicago, Philadelphia).

Responsibilities between State and Local Health Departments

The responsibilities of state and local health departments, with respect to one another, vary significantly by grantee. Clinical services, if offered, are usually conducted by local health departments (e.g. WA, TN, TX). Investigation, partner treatment, treatment assurance and counseling, may be conducted by state or local health departments (e.g. conducted by locals in NY, conducted by state in MA). In some cases both the state and local conduct these services, with the state responsible for more rural areas without metropolitan areas (e.g. TX, PA, TN). Primary prevention services (outreach, education) are also conducted by both state and local health departments. For example, California is transitioning many of these responsibilities to local health departments. While maintaining standardized materials, and communications from the state, the local health departments can carry out the programs, customizing the activities to local needs. However, it is usually the state that has the resources and the ability to conduct outreach campaigns, and to coordinate with CBO partners (e.g. NC, LA).

The standardization across the locals and the interaction between the state and local health departments are directly related to the level of centralization. For example, Washington has decentralized services, with locals responsible for treatment assurance/investigation/counseling. Therefore, each local has a slightly different model for providing services, and different IT/processes to support their work. For example, King county provides clinical services, and has some proprietary applications while Tacoma does not provide clinical services, and employs mostly manual processes. Consequently, their support needs from the state differ slightly as well (Tacoma is seeking support with an investigation application, King County is in the process of updating their own STD MIS).

Some states have focused on standardization, even with a decentralized model. This is greatly facilitated by the use of a common technology application. For example, Tennessee has one standard clinical billing system across all public health clinics. This enables coordinated definitions, processes and standards. Moreover, the state has made locals/regional health departments accountable for QA of data, as opposed to conducting follow-up at the central office for missing and incomplete data. This has enhanced compliance and allowed the State to quickly achieve a Regional Infertility Project objective established to reduce the rate of data errors to less than 5%.

Because STD MIS is difficult to use simultaneously with state and local health departments (state and local users cannot both update data), states have generally elected to use one model or the other: with the state inputting data, and updating data, or the locals responsible for inputting and updating data. Each model is accompanied by

it's own benefits and drawbacks. Central entry provides more control, but puts responsibility on the state for input, follow-up for completion. It also makes access to data difficult for the locals. Local entry is more efficient, since local staff members are closer to the data collection, and gives locals access to their own data. However, it must be de-duplicated by the state, and the state has little control over follow-up and QA, inquiries must be sent back out to the local health departments. A lack of standardized processes across locals is likely to lead to difficulty standardizing data and definitions. Although centralized data collection/entry models seem to be more congruent with having surveillance and field services performed by the State, and decentralized data collection/entry models seem to be more congruent with DIS at the locals, this was not necessarily observed. In some cases DIS are employed at the local level, record information on paper, and then send forms to the state (e.g. LA, NY). The variations illustrated here have large impact, as they may not be supported by an integrated system that seeks to input data early in the prevention process.

Culture

Often overlooked, organizational culture is a predictor of implementation success. When behaviors and incentives are misaligned with programmatic goals, stakeholders may not accept new projects, technologies or responsibilities. For the PAM implementation organizational culture will be paramount. If staff members are not properly prepared for the new technology and its accompanying process changes they will revert to using stand-alone, ad-hoc data bases. In order to explore the culture of the stakeholders, this document considers the relationship between grantees, the relationship amongst grantees, and the relationship between state and local health departments

Relationship between grantees and CDC

Grantees interviewed were helpful, informed and candid. Generally, participants wanted to become informed about the BPMM initiative, provide input, facilitate change, support other grantees and best practices, and give input into the STD PAM. Few interviewees were concerned about sharing their insight with the CDC or other grantees, or airing their concerns.

As expected, there was some discussion about the CDC not recognizing the needs of state and local health departments. Although recent CDC activities were lauded, there is still a general feeling that the CDC is focused on research activities that do not necessarily translate to the field, and that input from grantees was not considered in CDC directed activities. Stakeholders expressed concern about the performance measures initiative and the expanded interview record. In both cases, they were not sure that data could be collected, and cited that their input was not translated into changes in the collection instrument.

Most importantly, there is concern that the STD PAM, and any support will focus on the CDC and the grantees, as opposed to the locals. Participants expressed a history of the CDC designing programs and applications for the needs of the CDC, instead of the locals. This is particularly pertinent for the STD PAM, which will most dramatically effect local health departments. Main concerns revolved around investigation work flow and ability to access data for local health departments.

Although some participants appear to be disengaged from the PAM development process, twenty NCSA representatives participated in a recent standing call to review

functional requirements, providing significant input for the STD PAM. Grantees appear enthusiastic about implementing an integrated application, yet discouraged by the lack of a defined timeline or clear understanding of the functionality. Grantees and locals feel tied to the CDC, as many of them rely on the CDC applications for their work due to funding considerations, and technical skills, yet they are fearful that it will not meet the needs of the local health departments, or that they will not be able to support the new technology or process. These cultural implications, the level of trust and communication between grantees and the CDC, will have to be addressed in the future state design.

Relationship Among Grantees

Grantees generally focus inwardly, without formal mechanisms for sharing best practices, or coordinating across states. Best practices are shared through the Thursday reports, and at conferences, but few methodical ways of sharing prevention program ideas, materials, or processes were cited. Some exceptions are being explored through the NCS D state profile survey and their STD Program Core Components and Strategies documents. Culturally, grantees want to share and coordinate, yet they do not necessarily have the tools, and they may not have the tactical ability to standardize. For example, during interviews grantees cited that they wanted standard data elements, and evaluation metrics. However, during interviews with internal CDC stakeholders, interviewees cited that they have difficulty implementing standard metrics because grantees often disagree on the best metric, or are often unwilling or unable to alter current definitions and collection processes within all of the necessary clinical and investigation sites.

There were some examples of states sharing data systems, and cross training staff. North Carolina has an advanced investigation course, which is offered to participants from outside of the state. Dallas has developed a clinic management module that was adapted for use by Oklahoma. However, generally, systems are somewhat proprietary (states have adapted STD MIS to their needs), processes and activities are not standard, and staff are not cross-trained between states. The general activities are the same, as is evidenced by the common process model, but the work gets done in a variety of ways.

The STD PAM implementation will provide a great opportunity for standardization as data elements, definitions and workflow pre-defined grantees to learn from one another's implementation experience. More importantly, since it will be rolled out gradually to most grantees, states can learn from one another's experience. In addition, those states that already have data collection and entry at the local level (e.g. NC), provider on line reporting (e.g. LA) and electronic lab upload (e.g. Philadelphia, Chicago) should be able to assist states that have larger design changes. Once again the tools will have to be put into place to facilitate the sharing. The grantees are an association, not one enterprise, so they are not directly incented to share, standardize or assist one another. To move beyond this culture, grantees will have to realize the benefit of coordinating through the implementation and standardizing their process.

Relationship between states and locals

As discussed above, there are varying relationships between state and local health departments, resulting in varying levels of trust and communication. More centralized states have a culture which promotes reliance on the state by the locals, in the form of support, education, training and communication. Less centralized states have a culture of independence, with locals largely responsible for their own activities. The most

autonomous local health departments are those that are independently funded, such as Chicago and Philadelphia. These grantees have developed separate applications, processes and programs from their state, decisions fueled by a perception that state activities are not comprehensive enough, or congruent with the needs of a large local health department. For example Chicago is building their own NEDSS compliant system, separate from Illinois development efforts (INEDSS). Dallas has created its own clinical system, separate from the state of Texas. The STD Division in Philadelphia has created its own patient management and STD investigation system (DCMS) and is not planning to adopt PA NEDSS, Pennsylvania's NEDSS compliant system, until there are significant design augmentations. An integrated state system, paired with separate local systems, will require much coordination, such as common data elements for reporting, a central lab collection site that can parse information out to local health departments, development of comprehensive interface technology, and inter-jurisdictional transfer. Significant cultural changes will be required to enable the necessary collaboration.

Some grantees expressed comfort with their current control model of centralization that allows them control of data entry and access. In many cases, local health departments receive case reports on paper. They conduct the investigations, manually fill out the case forms, and then send them to the state. The state health department then enters the forms into an STD application system. Some states that have attempted to move entry to locals have even reverted to centralized entry, because conducting QA and data correction activities at the local level was difficult to maintain (e.g. NY, WA), (Due to some limitations of STD MIS to allow for both the state and local health departments to access and update information)

Movement to an integrated system will mean a change of control and responsibility on many fronts for the states. First, providers and labs will be entering information via electronic entry and browser entry. Second, local health departments will become responsible for entering their own case and investigation. And third, data maintenance will be conducted centrally for all programmatic areas across the DOH. Grantees have indicated that they are concerned about this. In fact, some state health departments suggested that even with NEDSS they would continue manual reports from locals, in order to maintain control over data quality. Culturally, this will challenge current beliefs and perceptions. With an integrated system, states will have to trust other departments to oversee data collection and analysis, and trust locals to conduct new tasks. Locals will have to step up to new responsibilities. States must be incented to help locals learn new skills, and locals must be incented to conduct activities in a standardized method to ensure quality and completion.

External Partners

External Partners are the entities that are outside the Department of STD, but help them ensure that they comply with their mission. It is these entities that provide information to the STD Program, and look to the STD Departments for data, reports, materials, communications and training. External partners broadly include community-based organizations, providers, advocacy organizations/legislative bodies, reporting agencies/managed care companies and other DOH departments that conduct similar prevention activities, such as HIV and TB.

In the past partnerships have focused mainly on supporting outreach programs and building advocacy. However, decreasing funding has inspired new partnership to ensure service delivery. Health Departments are increasingly looking to new organizations to help conduct the core work of STD Prevention, such as providing clinical services, and to increase their outreach, to new constituencies such as MSM and adolescents.

Community-Based Organizations

Health Departments commonly include partners in community-based services and outreach (CBOs, associations, schools, etc). Partners may participate in activities with the department of health, or they may actually be sub-contracted to provide those services. For example, Philadelphia sub-contracts with CBOs to conduct outreach to MSM on the Internet and educate people in shelters. This allows health departments to focus on core competencies and to reach at risk communities through directed campaigns. As Health Departments seek to emphasize prevention, in addition to stopping transmission, and target new demographics such as adolescents, and MSM, they increasingly look to partners to facilitate primary prevention activities. In fact, funding often requires inclusion of CBO (syphilis elimination).

The CBO partners cited varied considerably, since most were local organizations. It appears that each health department identifies partners on their own, based on local needs, as opposed to common partnerships with affiliated organizations. Grantees may benefit from viewing a list of CBOs partners from other states, to get ideas of types of organizations to target.

Providers

Clinicians and health centers are playing an increasing role as partners with STD Programs. As funding decreases, some health departments are less able to fund dedicated STD clinics. For example, Washington State has decreased the number of public STD clinics, transitioning more STD services to private providers. California, as well, cited that primary care and family planning clinics are increasingly taking over the role of dedicated STD clinics. Contrary to what might have been expected, case reporting remains consistent (e.g. WA), indicating that the transition is possible. However, this transition has integrally changed the role of health departments, who focus on provider training and monitoring, instead of direct service provision. For example, in Tacoma, the health department provides no clinical services. However, a DOH nurse meets with all providers who have reported at least one case in the prior year, to educate them on new protocols and legislation. Providers are also given handbooks with policies and information on STD Prevention.

Although stakeholders recognize most grantees may not place emphasis on these activities currently, compliance monitoring, training and communications with providers are becoming a primary function of health departments.

Advocacy Groups/Legislative Bodies

Less often named, but of growing importance, are advocacy groups, legislators and associations that provide public support, funding and political visibility. As health departments and the CDC are not allowed to lobby, and funding is decreasing, these partnerships are vital. In addition, Health Departments use these partnerships with

external advocacy groups to secure new funding sources, reach new providers, etc. Again, participants in the BPMM initiative recognized that they have little current emphasis on these partnerships and gave few examples beyond California.

Reporting Agencies/ Managed Care Organizations

Only a few partnerships with reporting agencies or managed organizations were described. Yet, with the decreases in funding, and the increased reliance on private providers to perform STD prevention services, these partnerships become increasingly important. For example, California looks to Kaiser to provide information on provider compliance. This helps the DOH target their services and outreach. As DOH's examine compliance with reporting, screening and treatment, access to existing data sources is critical. Managed care companies may also serve as a venue for disseminating training, communications and guidelines.

DOH Departments

As mentioned above, current IT systems, grant structures and funding mechanisms do not facilitate integration between departments. However the STD departments that are combined with HIV cite that coordinated efforts greatly facilitate their work, as staff skills and activities are similar (e.g. TX, NC). Frustration generally emerges with the inability to compare data across programs, due to the separate applications, confounding security requirements, and difficulty reporting to the CDC on staff and activities that are combined between programs in the current state. Participants encourage the CDC to support integrated programs through funding and grant structure. Data sharing and programmatic combinations will become more feasible with the implementation of NEDSS.

IT Support

This initiative will provide a current state functionality assessment of NBS and the PAM, based on examination of the NEDSS base system prototype and STD PAM documentation. A technical assessment may also be provided, if the need is identified. However, the discussion below is a brief illustration of some observations and feedback from interviews about the current state of technology support at the grantee level. It is categorized into Infrastructure (hardware), Staff (support) and Applications (software). In order to consider the full implications of technology, and the ability of grantees to implement on-line applications, a full capacity assessment must be completed with each candidate prior to implementation.

Infrastructure

Project areas of all sizes cited that they struggle with hardware and infrastructure. State Health Departments appear to be more likely than local Health Departments to have current technology, though some of the locals are conducting their own analysis, using their own systems (e.g. Denver). While supervisors and epidemiologists seem to have adequate technology, field staff and clinic staff sometimes lack adequate computers, or on-line access. The lack of equipment can overwhelm small health departments: updating requires not only purchasing and installing software, but also purchasing hardware, installing networking and ensuring support. Often these hurdles are quite large, especially since they must be addressed simultaneously.

Because most project areas are using STD*MIS, or other DOS based systems that are client server (e.g. MA, WA, IL, Philadelphia), they allow DOH's to operate with older computers, and without internet access for each user. In many cases staff do not have computers to support on-line systems, or the readily available internet access required for new technologies. A full hardware assessment will be necessary for each grantee considering the STD PAM, and is being conducted by the deployment team at the CDC for those implementing the NEDSS Base System. Some states that are implementing the base system (LA) believe that they have nearly adequate infrastructure for installation. Other sites, such as Chicago, are assuming the purchase of all the equipment as part of the NEDSS compliant development.

Staffing

The level of IT support varies considerably between grantees. Most project areas have MIS staff members in the health department that support all of the project areas with hardware, infrastructure, and standard applications (e.g. Microsoft, SAS). For example, Chicago Department of Public Health has an MIS division that supports all the communicable disease areas. Their goal is to support the programmatic areas, as they execute the mission of CDPH. Therefore MIS oversees the IT strategy and infrastructure (e.g. servers, hardware), while the application specific support is maintained in the programmatic areas (e.g. Global for STD, Stellar for Lead). The goal is to act as one department, without programmatic areas making hardware and software decisions independently, congruent with the goals of NEDSS. In reality, many grantees still operate in silos, with programmatic areas making technology decisions based on funding availability. For example, programmatic areas purchase hardware or implement applications based on grant support for specific projects. Since CDC funding is designated by programmatic area, health department often follow suit, without a centralized IT strategy.

STD departments often have dedicated or partly dedicated staff who support their STD application. Because of the complexity of DOS-based systems, often one staff member often has the primary responsibility of updating system and creating reports (e.g. MA, Philadelphia). In other cases, because STD departments are small, staff members are often flexible, responsible for hardware, software and infrastructure needs for their department. For example, North Carolina has two staff members who repair computers, oversee networking and maintain all applications in both the state office and regional offices.

Applications

As stated above, most grantees rely on DOS based applications to support their work. At the state level, many grantees use STD*MIS, or customized versions of STD*MIS for documenting cases and reporting to CDC. Local health departments usually document their work on paper, and send it to the state for entry (e.g. WA, NY, IL). In fact, there were few examples of local health departments entering information directly into a system directly accessed by the state (some exceptions include PA with PA NEDSS, and CA, with AVIS). Dual entry is sometimes conducted, to allow local health departments access to their own data. They record information in their own systems, and then send it to the state for entry in the state system (e.g. Denver, King County, Tacoma). However, the sophistication of the local systems vary. For example, Denver

collects their clinical and programmatic data into an Access data-base. Tacoma records case data into an access data-base, but keeps paper interview records for future needs.

Grantees mostly generate standard reports directly from their STD applications. For example, Philadelphia's DCMS has an array of reports on productivity, open cases by staff member, case reports by distribution, etc, that are menu driven and easily run. Canned reports are also available from STD*MIS (open cases, number of case reports). However, grantees cite limited access to ad-hoc reports, since they need to be programmed, and are not menu driven. Ad hoc reports are more difficult, usually requiring some programming for any DOS-Based system. Grantees often export the data to other formats, such as SAS/Access, to conduct statistical analysis (e.g Philadelphia, Chicago). The ability to export for analysis is highly desirable for epidemiologists, and supervisors, but in local offices and clinics, staff members often do not have the skills/technology to use SAS. DHAP is conducting training with some locals on SAS, which should enhance capacity in STD as well. Active partnerships with DHAP could facilitate needed training, and improve analysis capability for local staff.

Most notably, grantees are employing various applications for various functions. Although they all use a system for reporting to CDC, often prevalence monitoring, and collection of research data are recorded in other formats. Grantees cited Epi Info and Access most commonly. Either CDC staff or state staff create stand alone databases for collection of certain data elements. Prevalence monitoring data is often received electronically from labs or clinical systems (e.g. MA, King County, Denver), but often items are keyed a second time for research. In addition, some states cited multiple systems of their own for tracking. For example Tennessee uses NETSS in the regional offices. DIS enter case reports directly into NETSS. However, they also enter into their REACTOR system, which services as a state-wide registry for HIV and Syphilis information. In addition, they enter case tracking information into 'Log Book,' for DIS to use for investigations. Therefore, there is, at times, dual entry between state and local health departments, and within state and local health departments.

Political Considerations

Although not fully explored, political considerations were often cited during interviews as largely impacting activities. Grantees discussed a lack of political support for their issue, the implications of decreasing funding to STD Programs and difficulty conducting STD activities without ability to enforce reporting and compliance.

Political Support

As discussed throughout the document, political and public support for STD Prevention is second to a variety of other diseases and causes, such as bio-terrorism or other communicable diseases. STD faces barriers on several fronts 1) It is not perceived as urgent 2) Few political figures promote STD Prevention as a primary goal, and 3) It is inherently controversial in nature. Grantees cite difficulty partnering with legislators, or being heard through the legislative process. In addition, some of the most effective prevention programs cannot be implemented widely, as they cannot gain public or political support. For example, Philadelphia's adolescent program that promotes screening in public schools, offers screening an entire demographic population, yet it is too controversial to implement in most areas. One grantee representative from the

South commented that it could never be enacted in their state, since it brings STD services to public venues with teens.

Funding

Funding sources derive primarily from the federal government through the CDC. States receive support for a range of STD activities including surveillance, investigation, reporting and investigation activities. The monies are administrated through the Program Development and Support Branch within the CDC (PDSB). In addition, grantees receive additional monies for separate initiatives, such as Syphilis Elimination and the Infertility Prevention Program. Some states have secured support for unique programs and development efforts. For example, Dallas received monies to develop their patient management system; Washington received monies to develop an integrated surveillance system and North Carolina sites that they use specific CDC grants to fund numerous community-based programmatic activities. Grantees with sophisticated programs are more likely to be able to support the grant application process and new initiatives. Some programs also receive state monies, although the extent and distribution was not fully documented. State funding results in widely different investigation protocols and capabilities, with some states investigating limited diseases, and others contacting every case that is positive for Syphilis, HIV (for integrated programs), Gonorrhea or Chlamydia.

Many interviewees cited funding as a core restriction to programmatic and infrastructure improvements. For example, some grantees would like to conduct investigation and partner services for all STDs, but often are able to only support activities for Syphilis, high risk Chlamydia and anti-biotic resistant Gonorrhea, and again, for integrated programs, HIV. Although most communicable disease cases reported to the CDC are STDs, political support for STD Programs is not primary to the public or politicians. The federal and state governments are increasingly focusing monies on emergency preparedness and cutting support for STD Programs. That being said, STD Programs intend to take advantage of the emphasis on BT programs, as NEDSS initiatives will be conducted through the lens of BT, but will support surveillance through all disease programs.

Legislation

Stakeholders cite frustration with their inability to enforce provider reporting and enact consistent reporting elements from providers and labs. In most cases, grantees cite that positive lab reports trigger a case, but treatment information from providers is often not received. This requires cumbersome follow-up for staff. For example, Temple regional Health Department in Texas stated that although providers are legally required to report case information, the state does not enforce compliance. In addition, the Department has no comprehensive list of providers that should be monitored, only a list of those who have reported before. Identifying all general practitioners, nurse practitioners, obstetricians, gynecologists, pediatricians, etc. who may see a patient with an STD is overwhelming. Moreover, the Department has no mechanism to monitor compliance, as they do not have the IT or analysis capability to compare lab reports to case reports and then pursue providers who are non-compliant. Although some grantees have implemented programs to contact and monitor providers, only Pennsylvania cited legal support, with the government enacting legislation that will require providers and labs to report on-line.

In addition, grantees often cited that physician and lab reporting is inconsistent, and forcing use of standard forms difficult. They seek aid from the state and mandating reporting data. Other areas of discussion revolved around prevalence monitoring. Although grantees would like to monitor both positive and negative cases in all venues, reporting restrictions make collection difficult, leaving prevalence monitoring restricted to certain venues that receive specific funding for reporting all lab results.

Current Process:

The process flows outlining the current state of STD Prevention encompass the key activities, inputs, outputs, and sub-processes of most STD Prevention programs. However, they remain general enough to ensure that the majority of programs can envision their work within the flows provided despite high variance at the task level. It is recognized by the BPMM Team, the Steering Committee and the stakeholders who have helped build the model that the activities themselves, and the methods through which the activities get accomplished, will vary across all project areas. The future business processes must accommodate a range of grantees, as opposed to just the average grantees. However, while the BPMM framework and flows are used to describe the common, core processes, which themselves do not change significantly from project-area to project-area, the text provides insight into the differences observed. The outlines below provide some insight into some key variations in methods that have been observed through site visits and interviews, which must be considered when defining a common future state model.

The BPMM Framework includes the following mega and major processes:

<i>Mega Process</i>	<i>Major Processes</i>
<i>Programmatic Intervention</i>	Outreach and Community-Based Services Direct Services to Clients Improving Services with External Providers Treatment Assurance
<i>Information and Data Management</i>	Collection Processing and Consolidation Reporting and Dissemination
<i>Program Development</i>	Program Monitoring Priority Setting Implementation

These mega and major processes are further detailed in the following section.

Programmatic Intervention

Outreach and community-based services

Outreach and community-based services is defined as conducting education, training, legislative activity, and communication within the community and building appropriate

partnerships and coalitions to promote healthy behavior, quality care, testing and treatment. The extent of work and resources dedicated to Outreach/Community-based Services varies based on the funding and priorities of the project-funded area. Further, the identification of partners and communities depends on the level of sophistication of analysis tools. Some areas rely primarily on staff, informal conversations, and perceived need to inform outreach activities, while other areas conduct data analysis to identify high-risk communities. Outreach activities are localized, with project areas tapping local community-based organizations (CBO's) based on their relationships, and the CBO's proximity to high-risk groups and relations.

Most outreach services identified by stakeholders included screening programs in high-risk communities and outreach in venues such as bars. Some programs, such as North Carolina, Philadelphia and California, have extensive outreach programs, including internet-based outreach, mobile vans and targeted outreach for MSM. Programs are often run centrally from the health department, but day-to-day operations may reside with an outreach staff member or a sub-contracted community-based organization.

Outreach data is usually not collected in an automated fashion, or stored in the main STD application. However, most grantees have developed methods for tracking their activities. In Philadelphia, data from screening programs in some high schools is captured on forms and then entered into DCMS, their STD system. North Carolina has 'tracking forms' which are completed and sent to the health department from all outreach programs, including jail screening, and 'non-traditional test sites' such as shelters, bars, and clubs. The results of the screenings are entered into Epi Info, for analysis and case investigation, if necessary.

Because federally funded programs cannot directly lobby, grantees must educate the public and legislators and coordinate with other community-based organizations/advocacy groups to help influence decision-making. Grantees recognize the importance of legislative influence for funding, support and compliance enforcement, but few cited any legislative activities.

Media campaigns are expensive to develop and operate, and the messages to be communicated are sensitive, thus these campaigns are subject to much scrutiny by politicians and community-based groups. Few interviewees discussed media activities. However, in one example, San Francisco developed the Healthy Penis campaign, to target STD reduction, particularly syphilis, in the MSM population. Los Angeles looked to adopt a similar, but slightly adjusted campaign, to appeal more to concerned groups (e.g. PTA, local lobbyists). The data showed the campaign to be well received. However due to the nature of the message and the method of dissemination (cartoons, penis character, etc.) it received criticism. Nonetheless, the campaign has been adopted in other areas, including Philadelphia. Proven campaigns, such as this, mean that other areas, like Philadelphia, can defray the costs of development, and must only make small adjustments to language and publishing. These sorts of campaigns, when successful, are generally shared informally with other programs by word of mouth.

Direct Services to Clients

State and local health department STD prevention services provided directly to clients include clinical services, counseling and partner services in public health clinics. Many also conduct screening in publicly funded screening venues such as family planning

clinics, jails and adolescent health settings. Although all grantees are providing some extent of counseling and partner services, clinical services are not always offered by the DOH (e.g. MA, Tacoma) and screening programs vary.

While the methods of data collection vary, the general flow of patient/case data through project-funded clinics is largely invariable from grantee to grantee. Clinics may collect data on paper, by fax, electronically, and/or over the phone, depending on the clinic and/or the level of IT support. In many cases, scannable forms are entered into a clinic system by staff. These bubble forms require data cleansing (de-duplication, etc.), and generate a new or updated patient record, as well as potential bar codes, which are tied to lab results, medical forms, etc. If a positive lab result is received in either a public clinic or by a private provider, the patient is notified by the provider/clinic for treatment and treatment information is recorded.

Simultaneously, the Surveillance Department at the DOH is notified by the lab of the positive result. In most cases, clinic systems are not integrated with STD surveillance systems, so information is re-keyed (exception is the DCMS system in Philadelphia). The Surveillance Department enters information into an IT application, or on paper, and contacts the provider to identify treatment information (see treatment assurance below). If the patient requires follow-up, in the form of partner services or counseling, usually a separate Field Department will be notified and DIS will contact the patient. Information may be recorded on paper at the local level, and then sent to the state for entry (e.g. WA, Denver), or it may be recorded locally into an applications (e.g. TX).

The level of counseling and partner services offered varies widely by project area. Policies may be determined by the prevalence of individual STD or by outbreaks in certain communities. DOH's usually target those populations of highest risk, such as adolescents or pregnant women. As partner treatment is time-intensive, most projects do not have the resources to conduct services for all diseases. Moreover, there is debate about the effectiveness of partner treatment programs for chlamydia and gonorrhea. While all projects provide partner services and/or follow-up for primary syphilis and congenital syphilis, projects provide varying levels of services for secondary syphilis, gonorrhea, chlamydia, and other STDs. For example, in Denver and in Texas, priorities for prevention place HIV and syphilis at the forefront, followed by Gonorrhea and then chlamydia, as funding allows. At the MA Department of Health, positive lab and case reports are investigated (mainly infectious syphilis, resistant gonorrhea, and rectal gonorrhea) and morbidity reports from providers are investigated if they are unable to reach and/or treat patients and contact the DOH for help (this occurs primarily for cases of gonorrhea and chlamydia).

Counseling and partner services consists of contacting the patient, setting up an interview, ensuring the patient has had adequate medical follow-up, conducting counseling about risk behavior, and identifying other potential cases. Although most often conducted in person, interviews (chlamydia, gonorrhea) are sometimes done by phone in the Tacoma area, as a Washington State study showed this to be as effective, yet less costly, than in-person interviews.

Improving Services by External Providers

Ensuring that private providers are complying with current recommendations, guidelines, training, and regulatory requirements related to the STD Program represents a

significant portion of work for some project areas who have found that for financial, demographic, or other reasons, most STD diagnosis and testing is conducted by external providers (e.g. CA). Some project areas, such as Tacoma, WA, meet with all providers who report to review guidelines and protocols. However, most grantees struggle with this work. Although they are technically able to identify providers who are non-compliant by comparing lab reports to case reports, this practice is not common. Grantees often cited a desire to better monitor providers and facilitate improved reporting. As stated in earlier sections, the mechanisms to effectively monitor are often not present. Staff members do not have full lists of providers, the analysis tools to evaluate non-compliance, or the resources to visit and train providers. While California discussed partnerships with Managed Care Organizations to obtain compliance data and evaluation of HEDIS data, most grantees use manual evaluation of case reports.

Treatment Assurance

Treatment Assurance is comprised of reviewing case reports and clinical data, and conducting follow-up with providers and patients to ensure appropriate treatment. It is considered separately from direct services to clients because it pertains to those that are seen in public and private health settings. Moreover, it is often a unique department with the DOH. The level of treatment assurance and patient follow-up varies with the level of provider reporting. The higher the level of accurate and complete treatment reporting from providers, the lower the amount of follow-up work required by funded project areas. Because providers often do not report, grantee staff members spend significant time calling and faxing providers to ensure treatment.

In most cases, there is a unique department (Surveillance) who conducts this work, receiving positive lab reports either electronically on paper forms, and then contacting providers to secure treatment information (e.g. Chicago, Philadelphia). If staff members cannot reach the provider, they may contact the patient or transfer the case to another department (Field) to follow-up, usually the same department that conducts counseling and partner services. The disconnect between Surveillance and DIS/Field was noted in some projects, with concern that DIS/Field are responsible for contacting patients, yet full contact information is not always secured by Surveillance through the provider. Others cited that the separation of departments was quite effective, as it limits the number of staff members directly contacting each provider. Treatment assurance information is either collected on forms or entered into a system which can then be accessed by Field staff. Projects expressed frustration with the amount of resources dedicated to these activities, as it is directly proportional to the lack of provider case reporting. More stringent enforcement of reporting is clearly desirable, so that staff can focus on other activities.

Information and Data Management

Collection

Collection and consolidation of burden of disease data, program operations data, programmatic services data, secondary data and contextual data from various sources takes place in disparate ways, by various staff. Information may be received by fax, phone, email, other electronic methods, regular mail, and on paper. Data may also be collected through websites (e.g., census data), books and research reviews, and other secondary sources. Some states, such as California, use Epi Info for case record

collection, while many others use STD*MIS for collection, using the NETSS variables for primary collection and often adding other elements, such as behavioral data, or a full clinical component.

Information is commonly collected on forms, and entered later. Clinical information is entered onto a bubble form or on a paper chart. Positive lab reports are sent to the provider, generally by fax, and reported directly to Department of Health either by fax or as electronic reports. DIS will contact the provider, generally by phone, enter additional information on a paper field form and perform an investigation. The forms are then sent to a central location for entry (e.g. MA, NY).

Prevalence data is generally only available through state-run clinics, clinics funded by the DOH (e.g. family planning, adolescent), or jails, where prevalence monitoring programs take place. Prevalence data is often collected directly from the lab electronically, by the clinical and/or collection system in use. Prevalence monitoring is a separate initiative from case reporting and is typically recorded in a separate Access, Excel or Epi Info application. External data, either qualitative or quantitative, is collected in various ways, and often by separate staff in the Epidemiology department, or by supervisors.

Processing and Consolidation

Processing and consolidation incorporates several tasks, including validating data, comparing with existing information and entering/logging data into the system. De-duplication looms as a large task. Staff attempt to match names, DOB, and address, or some similar algorithm with existing cases. If a variation of the same case is detected, the case is updated; otherwise a new case is entered. Few states cited automation of this process. Even those with integrated applications discussed difficulty with this process (e.g. PA, IL).

The transformation of data to current standards will be a larger task for those areas with highly variable methods of entry and reporting. Project areas with paper entry, multiple system entry, etc. will require more data transformation, which takes more time and resources to accomplish. Those areas who require more standardization will devote less time to this sub-process. Merging of data sources, either clinical with case reports, or community data sources, was not largely observed. Except projects with unified clinical and surveillance systems (e.g., Philadelphia), or those with electronic provider reporting (e.g., LA), clinic information is re-keyed in to the STD surveillance system.

Reporting and Dissemination

Reporting and dissemination includes not only allocating cases to DIS, but also sending pre-defined reports to the CDC, State DOH (as appropriate) and making data and information available to staff. For most project areas, dissemination of cases to DIS is a manual process, in which case reports are received on paper and handed to staff. In some projects it is automated. Cases are entered into an application, and DIS are notified through work lists (e.g. Philadelphia)

Again, most areas use NETSS variables as a base for required information, and then may add additional components, such as behavioral variables. This data is uploaded by locals to the state, and then by the state, to CDC, for reporting purposes. All uploads

are done primarily through STD*MIS to NETSS. Only those variables defined and required by CDC are uploaded, but additional elements are often transmitted, through an extended record. In most cases, significant portions of the case record are not transmitted, and are considered proprietary to the states and/or locals. In these cases, the data elements reside at the clinic, local, and/or state where collected.

Program Development

Program Monitoring

The process of comparing actual program outcomes to planned outcomes, performance measures, and performance through on-going data review varies considerably by area. However, analyzing case data is essentially the same as analyzing productivity data, there must be some aggregation and then evaluation. Basic analysis is often automated through STD*MIS (e.g. MA, TX) or other programs. For example, in Philadelphia, the data is collected in the clinics in the city every week, and analyzed on a standard basis to provide status for that week. Additionally, the DIS supervisor collects his/her own DIS data, including how many cases were investigated, closed, etc., workload, cases open longer than X days, and so on, and use this data to make staffing decisions.

More comprehensive program monitoring activities often present a challenge. Usually the data is collected by the clinic/department of health, exported to other applications, such as SAS or Excel, and analyzed by in-house epidemiologists. Some areas, such as WA, review programs for key indicators, such as outbreak levels, on a quarterly basis. Many projects and local health departments cited that they do not have the staff, technology or resources to extract the data or the Epidemiological expertise to analyze it.

Priority Setting

Priority setting, identifying changes required in each program to further health outcomes, creating implementation plans for changes, and communicating needs for changes, were not fully explored with interviewees. It is not clear how projects compare outcomes with goals and identify necessary programmatic changes. When questioned about programmatic adaptations based on findings, most projects cited new activities with adolescents and MSM. Few significant changes in treatment assurance or partner service activities were discussed, although some programs cited cost benefit analyses of their activities.

Implementation

Responsibility for enacting changes to programs identified during priority setting, and altering program goals, methods, administration and staffing as necessary often resides with the state, supported by the local health departments. For example, a Texas regional health department stated that they would look to the state to oversee the implementation of a new IT system, but that they would likely be responsible for rolling out the training, materials and communications. TN cited that they implement systems centrally and roll them out to the regional/local health departments in pilot phases. They base their rollout plan on the capabilities and skills of the various regional/local health departments.

Independently funded local health departments are more likely to implement their own new programs than locals who are part of the state system. However, some locals cited quite a bit of independence in program implementation, developing their own systems, conducting research and building outreach activities (e.g. Denver, King County).

Based on program priorities, it is not uncommon for programs to share findings and methodologies, etc. with each other to maximize available resources, although only a few examples were cited. Specifically, in Philadelphia, the program adopted a piece of the California media campaign targeting MSM. This helped avoid additional development costs, while using a campaign with proven effectiveness (e.g. CA) to target an area of proven need (MSM).

Conclusion

The information above represents only a summary of CDC funded grantees and local health departments. It is intended to inform on the range of activities conducted by health departments and the differences in their capabilities and needs. However, it should be noted that generally, goals and high-level processes are generally common between grantees. For programmatic activities, direct services to clients (e.g., partner treatment, clinical services, counseling) and treatment assurance are fairly consistent. The biggest differences were noted in the types of outreach/community-based services and activities with partners, yet projects cited interest in the same areas. The innovative programs conducted by sophisticated grantees were referenced as areas of interest by other projects (e.g., provider monitoring, training, screening).

The most prominent differences are noted in organizational design, culture and infrastructure. The levels of centralization (state versus local) and the level of autonomy of local health departments will have significant impact on future changes. Implementation plans must consider the activities conducted by the local health departments and the degree to which they will need to change to accommodate an integrated system. For some projects, necessary mechanisms are already in place (e.g., locals already entering data into an STD application), while for others, changes will be significant (e.g., local currently tracking information on paper and send it to the state). Moreover, grantees must also consider participation of providers and labs, and the support necessary for infrastructure improvements, receipt of data to a centralized repository, and dissemination of electronic information local health departments. Additionally, there is further consideration required for the design and culture changes of those programs that integrate HIV and STD work.

At the next stage of the BPMM initiative, stakeholders will be asked to detail the future state. Using the same categories presented above, and outlined in the business process model, participants will flow future state processes and answer specific questions about cultural changes, organizational changes, and technology and external support necessary to implement and support a statewide integrated system. Although the information presented here is quite detailed, the future state information will be much more so, as inputs must be translated to an implementation plan. Over the next two months the BPMM team will engage representatives from CDC grantees, local health departments, DSTDP and external partners to document input through activities, surveys and facilitated sessions. The future state will be compared to the above information and a gap analysis conducted. The gap will be used to inform the STD PAM development. As stakeholders identify functional needs from the system, they will be documented as

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functional requirements and distributed to the developers. In addition, the gap will be translated to a high-level implementation plan which will outline change management needs, including communications, training, and resource requirements.