Division of Sexually Transmitted Disease Prevention

Business Process Management Modeling Initiative

SUB TASK 3

Update to
Deliverables 3A, 3B

Contract
GS-10F-0087N

Executive Summary

The following document outlines the Business Process Management Model for Sexually Transmitted Disease Prevention at State and Local Health Departments, as identified by representatives from the Division of Sexually Transmitted Disease Prevention, State and Local Health Departments, and external partners. The initiative Steering Committee should continue to vet these documents with State and Local Health Departments, along with DSTDP staff, to ensure that identified functions, relationships, and definitions are accurate and reflect the work of the State and Local Health Departments.

The document examines the three Mega Processes that define STD Prevention within the State and local Health Departments: Data Processing, Intervention, and Program Development. It then breaks these Mega Processes into their respective Major Processes and associates them with the appropriate functional definitions, inputs and outputs, and the key activities.

This model will be used to drive the development of common, but flexible, future state STD Prevention processes that State and Local Health Departments can adopt to promote improved pubic health. In addition, this model will inform the development of the STD Program Area Module (STD PAM), a technology application that is part of the National Electronic Disease Surveillance System (NEDSS) initiative.

Background

The Division of Sexually Transmitted Disease Prevention (DSTDP) at the Centers for Disease Control and Prevention (CDC) seeks to develop a business process model for STD Prevention at State and Local Health Departments.

As of January 2004, Sub Tasks 1, 2, and 3 are complete. This document represents the Sub-task 3 deliverables:

- Deliverable 3a: Detailed documentation providing an annotated overview of STD Prevention public health practice activities.
- Deliverable 3b: Listing of STD Prevention business functions along with specific definitions and contextual documentation linking each to the appropriate objective(s) identified in Sub-Task 2.

Method

Interviews

The team conducted over 30 interviews and conducted two site visits with representatives from the DSTDP, State and Local STD Prevention programs, the Association of Public Health Labs, and Johns Hopkins School of Medicine. Those interviewed were asked to describe their current STD Prevention activities and how their organization uses technology and data.

Straw models

The team crafted a mega and major-level business process management model (BPMM), or a taxonomy, for STD Prevention activities, based on the input received from stakeholders. This BPMM, along with explanatory materials, was circulated to many of the participants for input. The model sparked discussions with stakeholders, which provided the team with further learning about STD Prevention activities; this feedback was incorporated into the materials.

Facilitated Session

On December 15th, 32 stakeholders gathered at the Westin in North Perimeter (Dunwoody, Georgia) for a ten hour facilitated session to refine and validate the business process model for STD prevention at state and local health departments. A model was presented, and activities were designed for the group to build out the model by refining definitions, identifying inputs and outputs, and testing the model against current activities taking place within State and Local Health Departments.

Session Feedback

After the session, each participant was contacted for feedback on the session and the outputs of the session. Further updates were made to the materials, based on feedback received.

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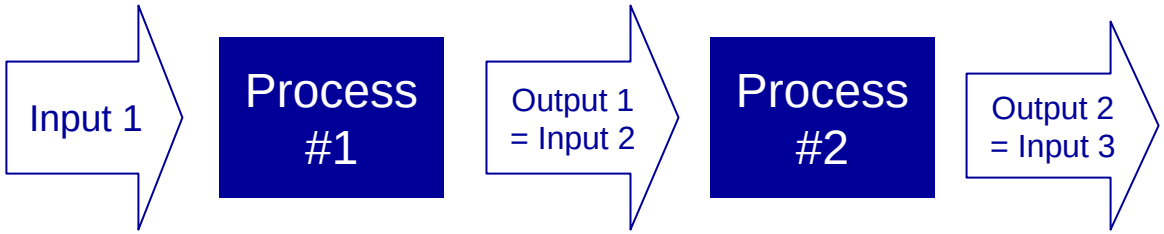
Business Process Modeling Defined

Business Process: A specific ordering of work activities across time and place, with a beginning, an end, and clearly defined inputs and outputs. Business processes are the structure by which the organization physically does what is necessary to produce value for its customers and are broadly defined across functions/departments.

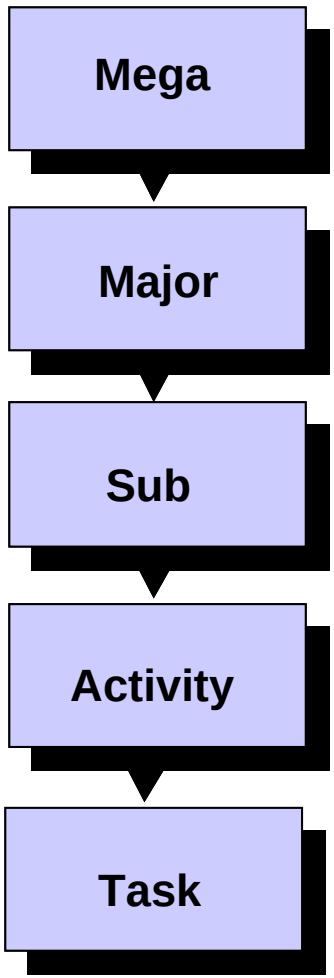
Process Model: A representation of one or more processes and their associations that an enterprise performs. Process modeling is a mechanism for describing and communicating the current or intended future state of a business process.

Business Process Model: A mechanism for describing and communicating the current or intended future state of a business process.



Business Process Modeling shows how work gets done.

Business Process Model Hierarchy



Mega Process - The highest level processes identified by an enterprise. Two to three, of the average 4-6, mega processes usually form the core value chain for the enterprise. The remaining are primarily support processes.

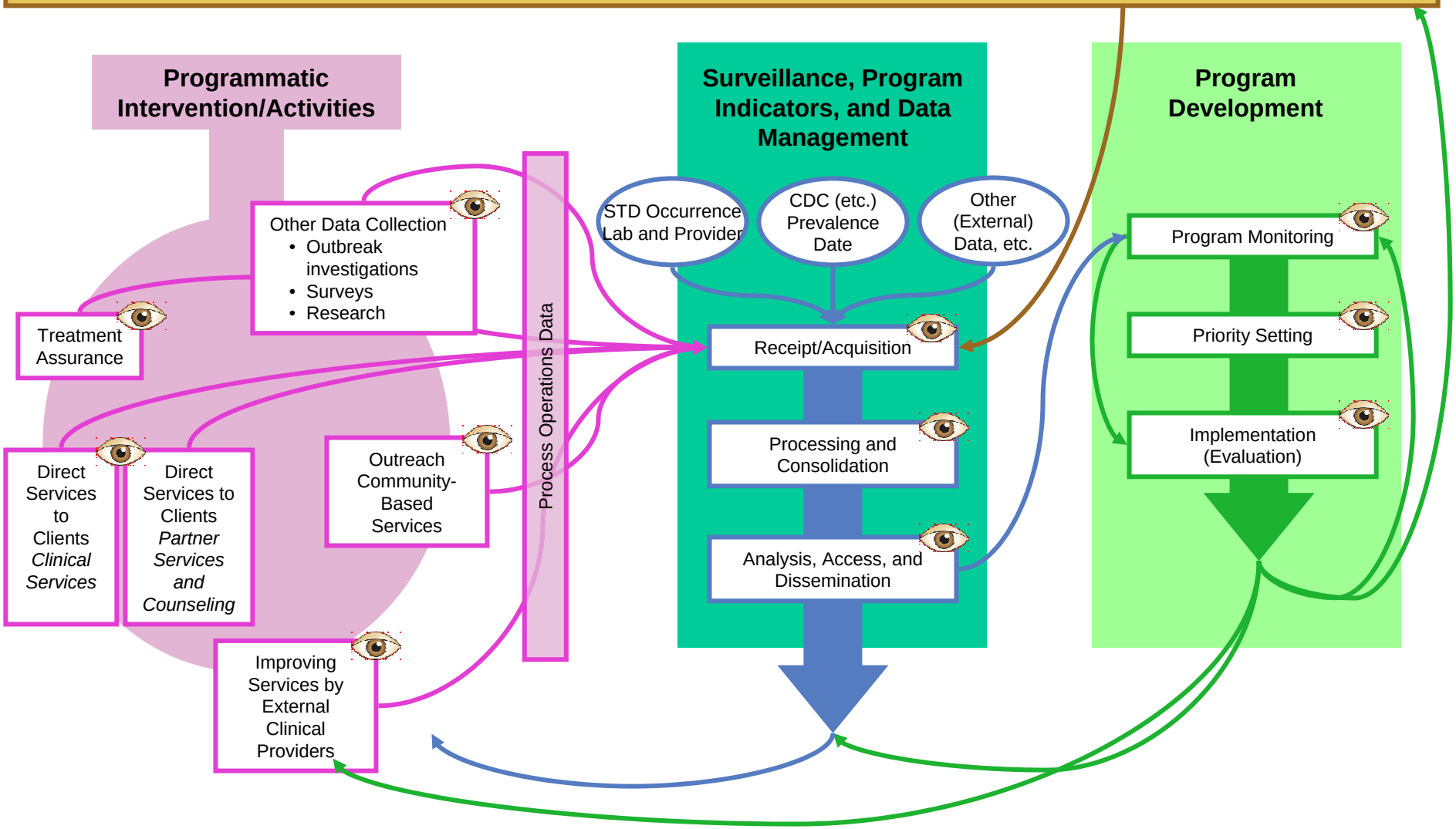
Major Process - A subdivision of a mega process that represents a collection of subprocesses . A collection of major processes take on the complete processing of the mega process.

Sub-Processes - A subdivision of a major process that represents a collection of subprocesses. There is a variable number of levels of subprocesses to bridge the hierarchy between major processes and activities.

Activity - An activity is a unit of work performed by one job function and at one time with one mode of operation.

Task – A workstep performed to complete an activity. A number of worksteps may be required to complete an activity.

Program Management and Operations: Staff Development, IT Support, Financial Management, Administration, Internal Communication



Surveillance

Business Process Model for STD Prevention

Data and Information

Burden of Disease Data

- Case reports
- Prevalence data

Programmatic Services Data

- Clinic data (e.g. customer satisfaction, patient flow)
- Client data (by patient)
- Interview and behavioral data
- Field records
- Compliance data
- Outreach data

External Quantitative Data

- Community risk behavior data
- Community data (Demographic, behavioral, financial)
- Syndromic data (e.g. pharmacy, emergency room)
- Administrative data from external stakeholders (e.g., service utilization data from hospitals)

Program Operations Data

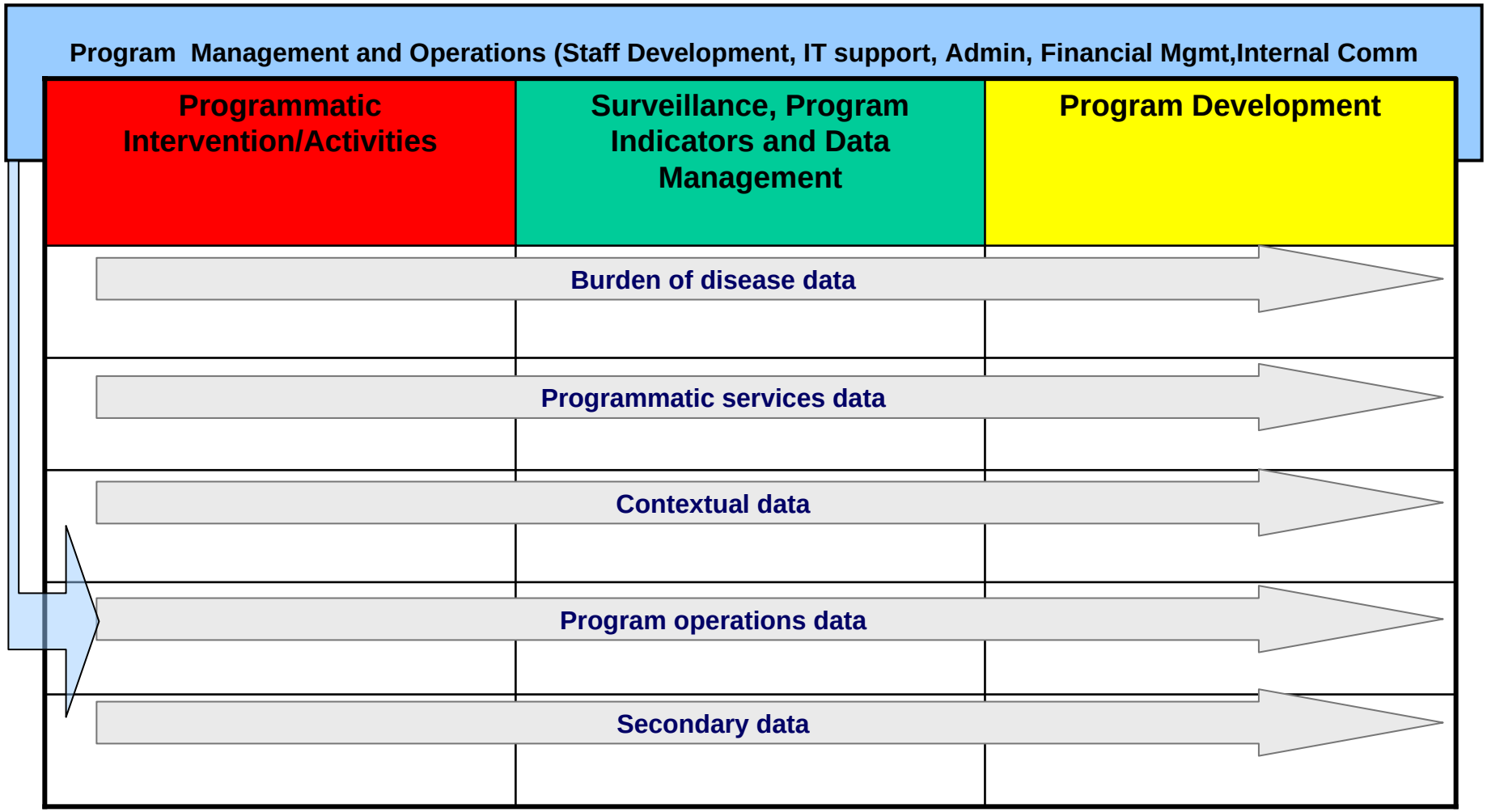
- Personnel and productivity data
- Fiscal data
- Internal programmatic data (e.g staff training)
- Objectives (yearly goals, surveillance goals, program indicators, etc.)

External Qualitative Data

- Research, Evaluations
- Guidelines and Recommendations
- Legislative information
- Anecdotal data

Business Process Model for STD Prevention

Each type of data is an input to each mega process. The data is used and then transformed to an output during the mega process activities.

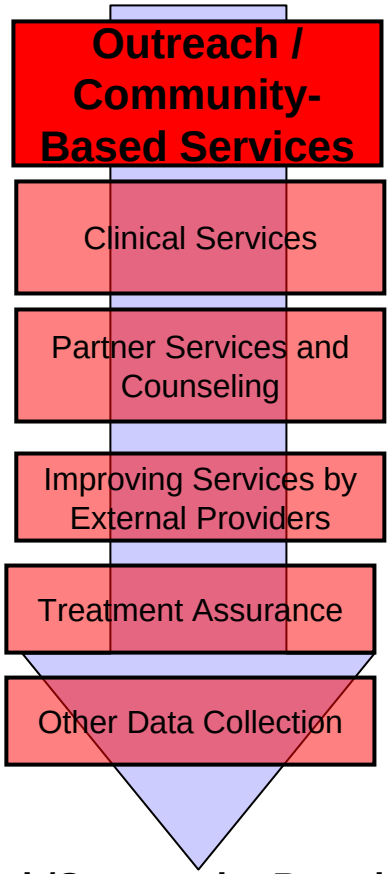


Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Materials and communications
- Implementation plan
- Prioritized issue list
- Prevalence data
- Case report data
- Outreach data
- Community data
- Risk behavior data
- Qualitative data

OUTPUTS

- Referrals for clinical service or testing
- Outreach data
- Qualitative data
- Personnel and productivity data
- Legislative information

ACTIVITIES

- Educate and screen high risk populations in non-clinical settings (bars, baths) to promote behavior change and clinical follow-up
- Build appropriate partnerships and coalitions with CBOs and providers to further training, education, funding, and media, etc.
- Distribute materials and condoms (schools, baths)
- Identify high-risk persons and refer for testing
- Provide media outreach to promote education and behavior change
- Disseminate reports to legislators and respond to queries

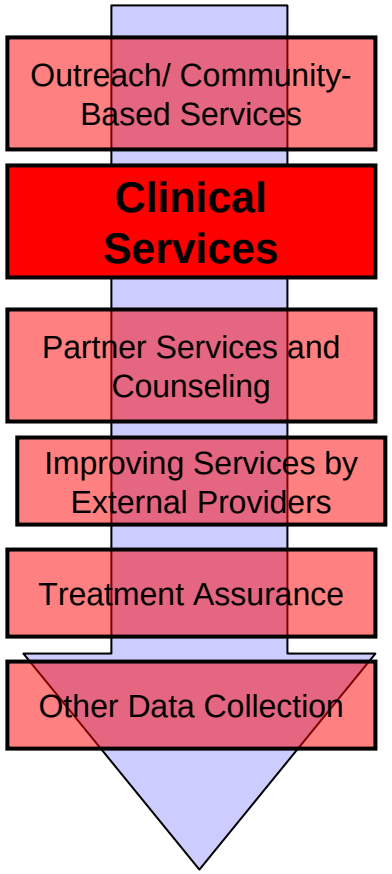
Outreach/Community-Based Services: Conduct education, training, legislative activity, and communication within community and build appropriate partnerships and coalitions to promote healthy behavior, quality care, testing and treatment

Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Materials and communications (for distribution)
- Referrals for services
- Implementation plan
- Case reports
- Clinic data
- Interview and behavioral data
- Field records
- Guidelines and recommendations

OUTPUTS

- Case reports
- Clinic data
- Prevalence data
- Interview and behavioral data
- Qualitative data
- Personnel data

ACTIVITIES

- Review patient records, link to other data sources, if applicable
- Conduct clinical services, including testing, diagnosis, vaccinations and treatment
- Counsel and refer patients for further care
- Document services, patient information
- Submit case information

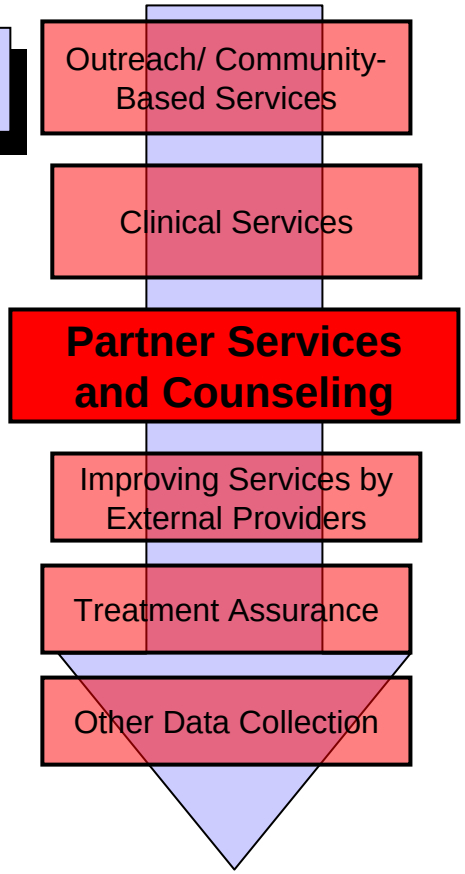
Clinical Services: Conduct STD screening, testing and treatment conducted in public health clinics

Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Materials and communications (for distribution)
- Implementation plan
- Case reports
- Field records
- Interview and behavioral data
- Guidelines and recommendations

OUTPUTS

- Interview and behavioral data
- Field records
- Qualitative data
- Personnel data

ACTIVITIES

- Review case reports, field records, interview records, link to other data sources, if applicable
- Conduct partner services to identify, treat, and counsel additional patients
- Provide referral for testing and treatment, and/or services when appropriate
- Document field records, interview records, behavioral information, etc.

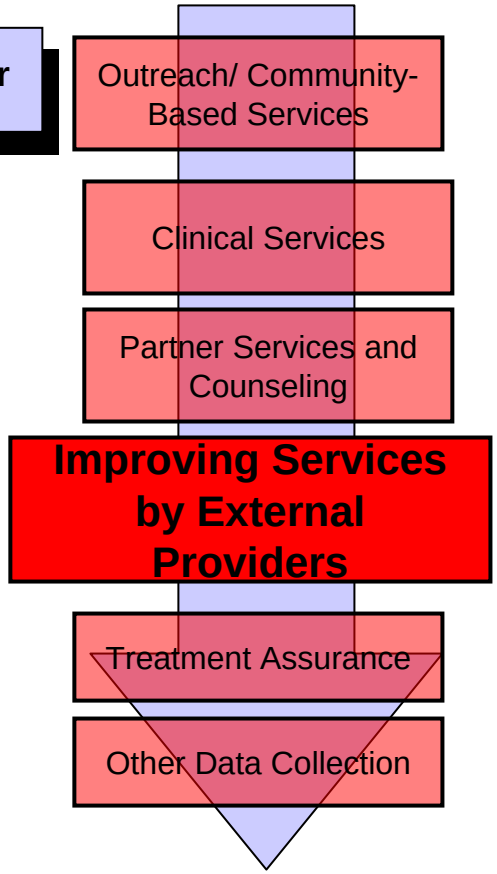
Partners Services and Counseling: Provide counseling, contact tracing and partner services. Identify potential transmission and prevent additional spread of disease through referral for and provision of testing and treatment

Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Materials and communications
- Implementation plan
- Prevalence data
- Case data
- Risk behavioral data
- Community data
- Qualitative data
- HEDIS data addressing CT screening as available
- MCO practice policies/ guidelines

OUTPUTS

- Compliance data (reporting, treatment, screening)
- Qualitative data
- Personnel data

ACTIVITIES

- Build partnerships with provider population to increase compliance, training, and awareness of current program
- Conduct training, communications and technical assistance to support proper diagnosis, treatment, counseling, referral, testing, partner services and vaccination, etc.
- Monitor compliance with current program guidelines, regulatory requirements and recommendations

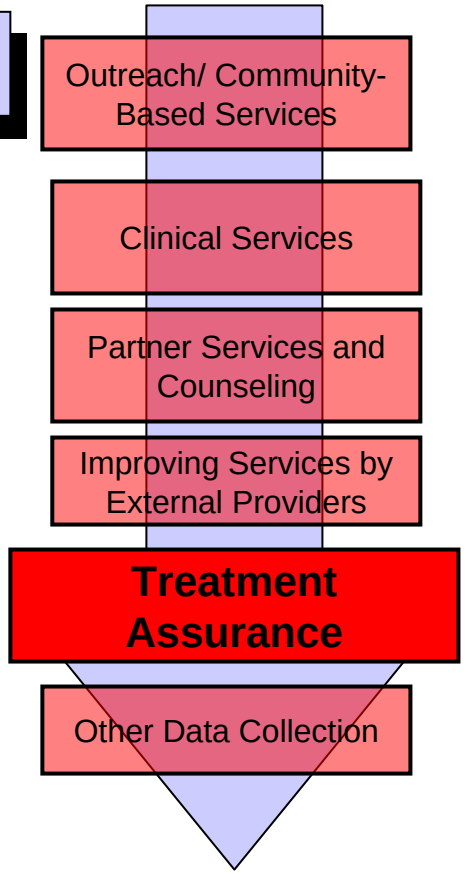
Improving Services by External Providers: Ensure that private providers comply with current recommendations, guidelines, training, and regulatory requirements related to the STD Program

Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Materials and Communications
- Implementation plan
- Case data
- Clinical data
- Interview and behavioral data
- Field records

OUTPUTS

- Case data
- Interview and behavioral data
- Field records
- Personnel data

ACTIVITIES

- Review records and identify patients requiring follow up
- Link record to existing data, and update or de-duplicate record, if required
- Follow-up with provider to ensure treatment is complete
- Follow-up with patient, if necessary, to ensure treatment and provide referral for clinical services
- Identify additional need for partner services and refer for follow-up
- Document follow-up, case information

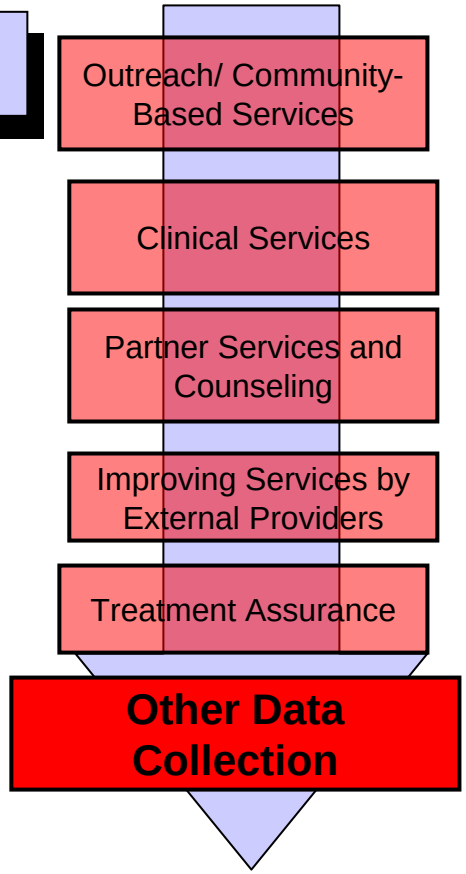
Treatment Assurance: Review case reports and clinical data, and conduct follow-up with providers and patients to ensure appropriate treatment

Business Process Model for STD Prevention

Mega

Programmatic Intervention/ Activities

Major



INPUTS

- Case data
- Clinical data
- Interview and behavioral data
- Field records

OUTPUTS

- Interview and behavioral data
- Clinical data

ACTIVITIES

- Review alerts, aberrations, records, outbreak investigation protocols
- Construct necessary instruments for outbreak investigation
- Conduct research via interviews, questionnaires, focus groups
- Document findings
- Extract necessary data for sentinel surveillance (clinic data, lab data)

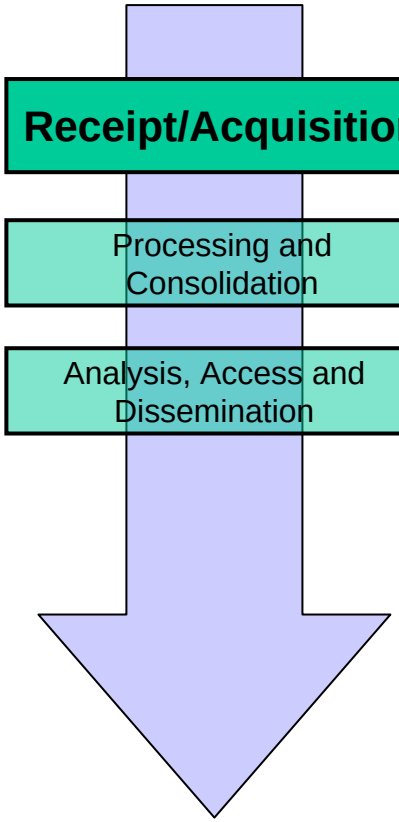
Other Data Collection: Collect information specifically for research, outbreak investigation or sentinel surveillance

Business Process Model for STD Prevention

Mega

Surveillance, Program Indicators and Data Management

Major



INPUTS

New data elements:
- Burden of disease data
- Programmatic services data
- Program operations data
- External qualitative data
- External quantitative data

OUTPUTS

- Verified records
- Downloaded data sets
- External data

ACTIVITIES

- Collect burden of disease data from providers and labs (mail, fax, electronic, phone)
- Collect programmatic services data from health department, clinics, providers and primary prevention programs
- Collect data from clinics, primary prevention programs and partners
- Collect data from external sources
- Collect program operations data from internal staff
- Validate complete data received and entered
- Follow-up with data source, if necessary

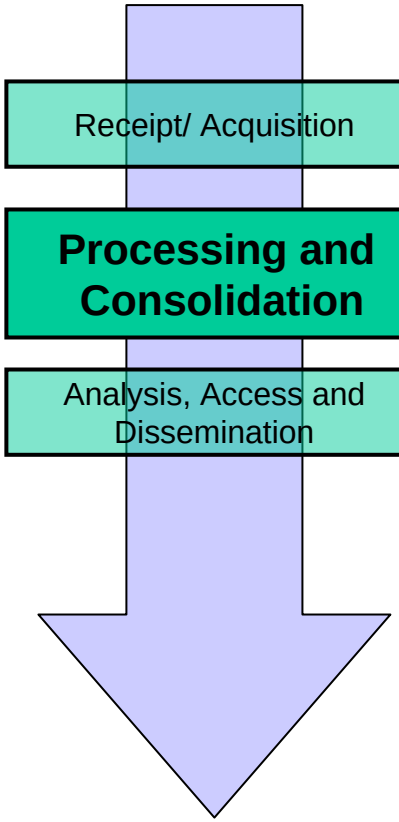
Receipt/Acquisition: Receive and acquire burden of disease data, program operations data, programmatic services data, secondary data and contextual data from various sources takes place in disparate ways, by various staff

Business Process Model for STD Prevention

Mega

Surveillance, Program Indicators and Data Management

Major



INPUTS

- Verified records
- Downloaded data sets
- External data

OUTPUTS

- Cleansed and completed record
- Standardized data / formatted data
- Integrated data at patient and partner level (e.g. integrate clinic and partner treatment) and community level (e.g. CBO and outreach data)
- Enhanced qualitative data

ACTIVITIES

- Compare data with existing records and de-duplicate, or update record
- Transform data to standardized format (allowing linking, merging, integration)
- Link to other data sources, if required
- Enter data into system (if necessary)
- Identify intervention or follow-up requirements
- Identify high rates/ out-of-normal rates through flagging mechanism

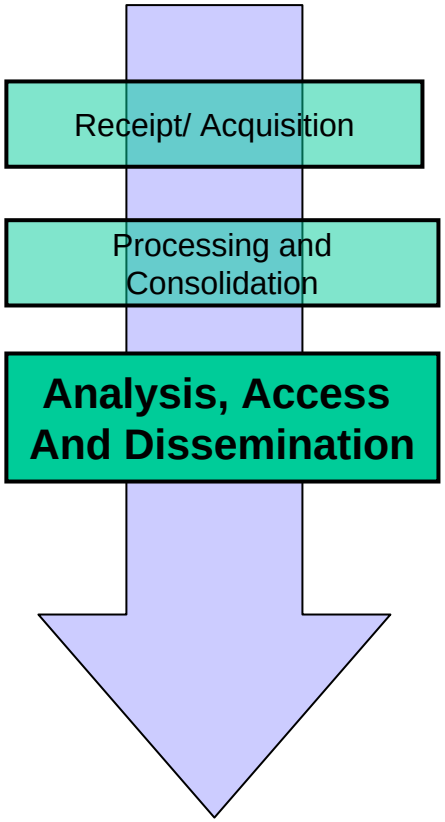
Processing and Consolidation: Validate data, compare with existing information and enter/log in system

Business Process Model for STD Prevention

Mega

Surveillance, Program Indicators and Data Management

Major



INPUTS

- Cleansed and complete record
- Enhanced qualitative data
- Integrated data
- Standardized data

OUTPUTS

- Case records with links to programmatic services data pushed to staff for follow-up
- Programmatic data and prevalence data available to staff for analysis
- Operations/personnel data available for staff and supervisors
- External quantitative and qualitative data disseminated and available to stakeholders
- Flagged indices for out-of-range data (thresholds) pushed to staff for follow up
- Reports/cases sent to DOH/CDC

ACTIVITIES

- Identify and determine audience for data reporting and dissemination
- Disseminate records to CDC and/or disseminate records and cases to State DOH
- Distribute/push cases to DIS/field as needed for investigation and follow-up
- File qualitative information and external data and disseminate to appropriate staff
- Produce standardized reports on a regular basis and disseminate

Analysis, Access and Dissemination: Allocate cases to DIS, send pre-defined reports to the CDC and make data and information available to staff

Business Process Model for STD Prevention

Mega

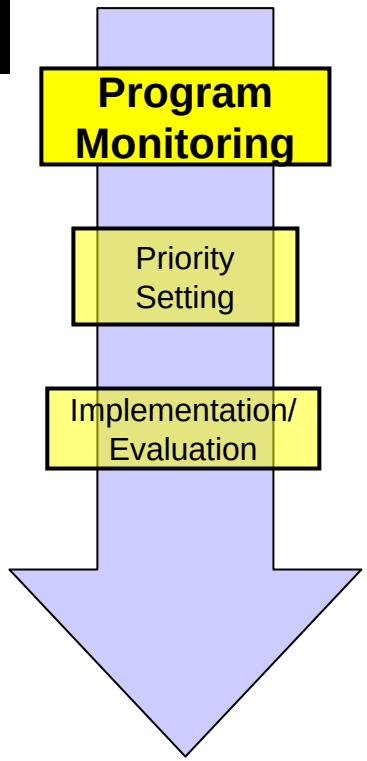
Program Development

Major

Program Monitoring

Priority Setting

Implementation/ Evaluation



INPUTS

- Program Objectives
- Standard Performance Measures
- Flagged Performance Indices and Results
- Sorted, Disseminated data
  - Programmatic services data
  - External data
  - Burden of disease data
  - Program operations data

OUTPUTS

- Base-lined and Analyzed Program Performance
- Identified trends and general programmatic needs
- Reports to partners

ACTIVITIES

- Aggregate data and run standard and ad-hoc reports
- Analyze/interpret programmatic outcomes (by STD, age, risk group, locale, etc.)
- Analyze/interpret data against programmatic goals
- Analyze/interpret data against process indicators (# trained)
- Analyze/interpret data against performance measures (productivity)
- Analyze/interpret external data and community descriptors (changes in demographics, services provided, risk factors/behavior, economics, etc.)
- Identify key trends, emerging programs, outbreaks
- Produce and distribute reports to partners (disease incidence, distribution)

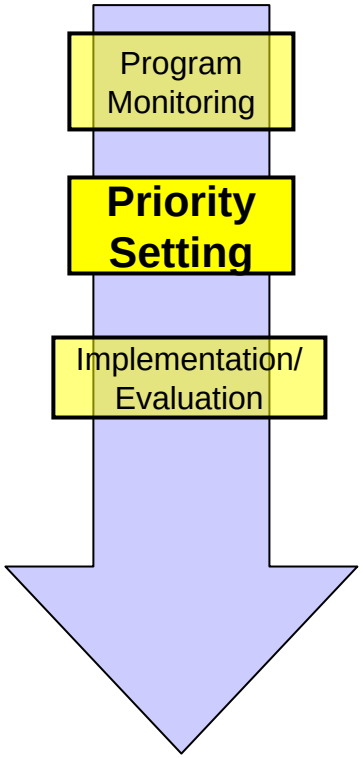
Program Monitoring: Compare actual program outcomes to planned outcomes, performance measures, and performance through on-going data review

Business Process Model for STD Prevention

Mega

Program Development

Major



INPUTS

- Base-lined and Analyzed Program performance
- Analyzed trends
- External data (research, guidelines)
- Resources (budget, staff availability, staff expertise)
- Infrastructure (technology, partners, organizational design)

OUTPUTS

- Prioritized Issue List and Recommendations for Programmatic Improvements
- Implementation plan
- Feasibility study

ACTIVITIES

- Identify areas of need, program adjustment based on data analysis
- Prioritize needs and recommendations
- Examine best practices in other states, CDC guidelines, current practices to determine changes needed to address issues
- Outline required changes and improvements
- Assess resources required for change (administrative, technology, staff, funding)
- Ensure alignment of strategy with other activities, current policy
- Create implementation/change plan

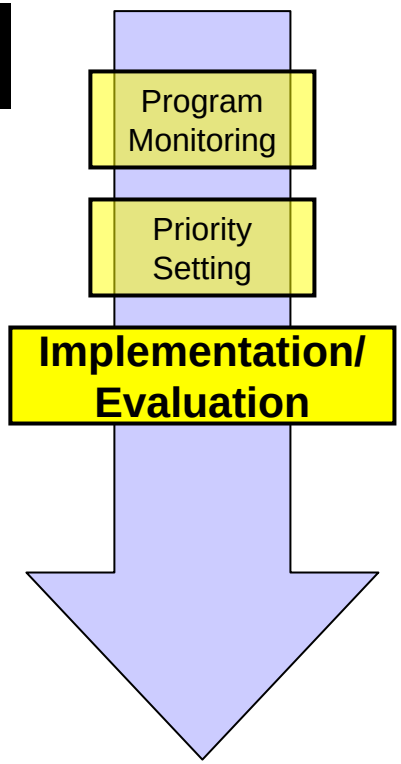
Priority Setting: Identify changes required in program to further health outcomes. Create implementation plans for changes and communicate need

Business Process Model for STD Prevention

Mega

Program Development

Major



INPUTS

- Prioritized Issue List and Recommendations for Programmatic Improvements
- Resources (staffing, funding)
- Infrastructure
- Feasibility Study

OUTPUTS

- Implemented Plan (Includes Policy Changes)/ Adjusted Current Program
- Updated Materials and Communications

ACTIVITIES

- Update objectives, program activities to reflect improvements
- Evaluate and solicit feedback from stakeholders and programs
- Identify new information needed (research, etc) and/or develop plan to improve information gathering
- Capture resources required for implementation
- Update materials, training, communication, staff to support change
- Disseminate reports, new policies, recommendations to stakeholders
- Support implementation with TA, communications

Implementation/ Evaluation: Enact changes to programs identified during priority setting. Alter program goals, methods, administration and staffing as necessary

Business Process Model for STD Prevention

Program Management and Operations

In addition to the three mega processes, there are cross-cutting components that capture general program management and operational activities:

Staff Development	Review staffing plan, skill sets, and workload using personnel and productivity data. Adjust staffing, as necessary. Identify internal training needs, and develop and conduct training. Monitor staff knowledge
IT Support	Identify strategic and tactical IT needs, using internal programmatic data and fiscal data. Modify IT infrastructure and implement changes
Financial Mgmt	Seek financial support to ensure funding. Develop budget using fiscal data and internal programmatic data. Communicate funding information to staff and monitor budget
Administration	Review administrative tasks and processes using administrative data. Conduct day-to-day activities necessary to operate offices, sites, etc.
Internal Communication	Identify topics pertinent to keep staff informed and identify communication tools. Create and disseminate internal communications

Existing Public Health and Surveillance Process Models

The process models below were found within CDC materials and public health research articles. They inform the model to be derived in the BPMM initiative

From Program Operations Guidelines at CDC DSTDP:

- Leadership and Program Management
- Evaluation
- Training and Professional Development
- Surveillance and Data Management
- Partner Services
- Medical and Laboratory Services
- Community and Individual Behavior Change
- Outbreak Response
- Areas of Special Emphasis (corrections, adolescents, managed care, STD/HIV interaction, syphilis elimination, other high-risk populations

From the Epidemiology Program Office, Overview of PH Surveillance

- Collection
- Analysis
- Interpretation
- Dissemination
- Link to public health practice

From NCSD STD Program Infrastructure Needs Assessment, June 2002:

- Surveillance and Data Management
- Intervention Services
- Information Dissemination
- Partnerships and Linkages
- Planning and Policy
- Clinical Services
- Staffing, Training, and Development
- Program Evaluation
- Financial Resources
- Program Adaptation

From Conceptual Framework of PH Surveillance, McNabb:

- Eight core processes:
  - Detection
  - Registration
  - Reporting
  - Confirmation
  - Analyses
  - Feedback
  - Acute (epidemic-type) and
  - Planned (management-type) responses
- Four support activities enable the eight core processes:
  - Communications
  - Supervision
  - Training
  - Resource Provision