

REGIONAL & STATEWIDE DATA WAREHOUSING

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Data Warehouse Planning and Governance: Regional & Statewide HMIS/Human Services Projects An intermediate curriculum



This curriculum was prepared by the Cloudburst Group under cooperative agreement MDMV00107 with the Department of Housing and Urban Development's (HUD's) Office of Community Planning and Development. This curricula was developed by Ray Allen, Tony Gardner and Barb Ritter under contract with the Cloudburst Group.

LEARNING OBJECTIVES

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To introduce the audience to:

Basic purposes, concepts, and key definitions relating to regional and state-wide HMIS/human services data warehousing

The all-important ***planning processes and governance structures*** needed to successfully develop a regional or statewide data warehouse

Critical planning and governance tips and lessons learned in existing data warehouse projects

PACKET CONTENTS

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This training packet contains the following resources:

What is a Data Warehouse?

What is SHADoW?

What are BACHIC & RHINo?

BACHIC Overview & Guiding Principles for RHINo

SHADoW Interagency Agreement

SHADoW Participation Agreement

SHADoW Data Use Agreement

The  indicates a corresponding resource is available.

TRAINING OVERVIEW

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- Data Warehouse Background
- Major Planning Challenges
- Importance of coordinated planning and leadership
- Governance philosophy and structure
- Approach to meetings and decision process
- Importance of staffing and funding for planning
- Defining participants' roles and responsibilities
- Approaches to overcoming barriers to buy-in and success
- Importance of developing a common vision for regional or state data
- Key lessons learned and suggestions

DATA INTEGRATION

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- Data Integration is combining data residing in different sources and providing users with a unified view of these data (Wikipedia).
- Data Integration or merging of data can take several routes:
 - **XML Data Sharing** – Extensible Markup Language (XML) is a set of rules for encoding documents electronically for sharing a common case file for clients
 - Example – Michigan’s Muskegon project
 - **Combining Systems** – merging data from several similar systems (e.g. HMIS) into a single system
 - Example – 9 CoCs in Louisiana in a single HMIS
 - **Data Warehousing** – extracting, transforming and loading (ETL) data from several sources into a single queryable schema
 - Examples – San Francisco Bay Area’s RHINo and Michigan’s SHADoW project

WHAT IS AN HMIS DATA WAREHOUSE?

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What is a
Data
Warehouse?

A data warehouse is commonly understood to be a central database for organizing and analyzing data from more than one source.

Examples include: merging data from multiple HMIS or data from an HMIS and state mainstream systems.

Typically includes:

Source data

Schema and process for extraction, transformation & loading

Server(s) with relational database and data warehouse schema

Security features

Analysis and reporting tools

WHY AN HMIS DATA WAREHOUSE?

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An effective tool for decision-making support

Designed for ease of data retrieval, analysis, and reporting across large data sets

HMIS are often designed for ease of day-to-day client data transactions; HMIS formats are good for client record management, but are slower than data warehouses for retrieval and analysis across large amounts of data.

WHY AN HMIS DATA WAREHOUSE?

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The potential uses of an HMIS data warehouse:

Analyzing regional or state demographics, trends, and outcomes

Assessing homeless use of mainstream services

Calculating the cost homelessness

Determining what interventions work to prevent and end homelessness

Informing regional or state 10-Year Plans to End Homelessness

HMIS DATA WAREHOUSE EXAMPLES

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What is SHADoW?
What are BACHIC &
RHINO?

- Michigan Statewide Homeless Assistance online Warehouse (SHADoW) Project
 - Contact: Barbara Ritter
 - Michigan Coalition Against Homelessness
 - 15851 Old UU-27, Building 30, Suite 315
 - Lansing, MA 48906
- Bay Area Regional Homeless Information Network organization (RHINO) Project
 - Contact: Ray Allen
 - Community Technology Alliance
 - 115 East Gish Rd., Suite 222
 - San Jose, CA 95112

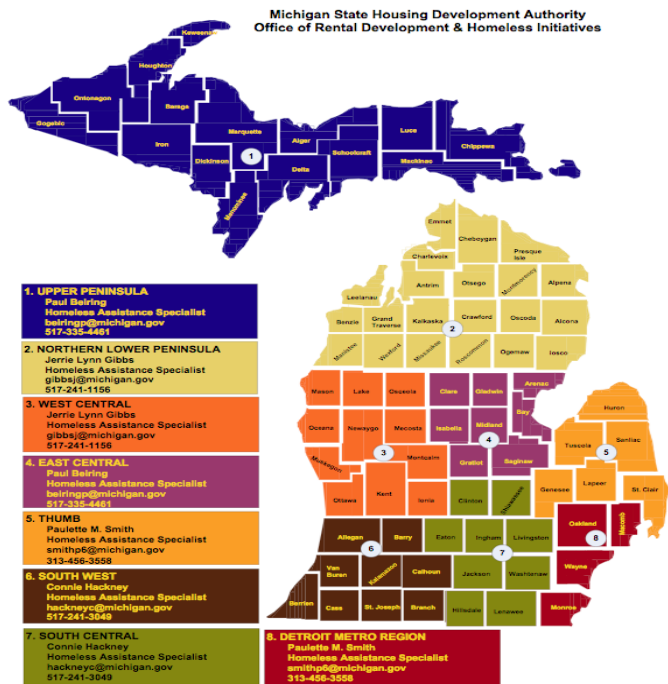
STATEWIDE DATA WAREHOUSE EXAMPLE: MICHIGAN SHADoW PROJECT

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Source Data: Statewide HMIS and Michigan Human Services Data Warehouse

Objective: Examine homeless use of state mainstream systems to help determine: cost of homelessness, impact of state program changes, patterns of state service usage relating to homelessness, and extent homeless are benefiting from state services.

Key Planning Group: SHADoW Leadership Board



REGIONAL DATA WAREHOUSE EXAMPLE: BAY AREA RHIN_o PROJECT

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Geography: San Francisco and
Monterey Bay Area

Source Data: HMIS data from 11
Counties/CoCs

Objective: Provide a rich repository
of regional data to better analyze
trends, gaps in services, and mobility
patterns among homeless people,
and to inform regional policy and
funding directions.

Key Planning Group: Bay Area
Counties Homeless Counties
Information Collaborative



MAJOR PLANNING CHALLENGES POSED

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Data warehousing is a major planning challenge, but one that can be well worth the effort.

Planning may take longer than expected.

The “people” issues are more challenging than the problems with technology.

With careful organization, the project can be a great success!

IMPORTANCE OF COORDINATED PLANNING AND LEADERSHIP

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Importance of coordinated planning

A well-coordinated planning process is critical to the success of any HMIS/human services data warehouse.

A data warehouse will only succeed if attention is placed on:

- Engaging key stakeholders
- Defining the project vision and goals
- Developing and carrying out a work plan for achieving the vision and goals
- Reaching consensus on all key decisions along the way
- Overcoming barriers and challenges

IMPORTANCE OF COORDINATED PLANNING AND LEADERSHIP

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Importance of coordinated planning (cont.)

Start with **first things first**:

- Policy and program decisions take precedence over technology choices, not the other way around.
- Higher level policy choices should be made before lower level operational decisions.
- Think first about what you want to know **before** deciding on a data warehouse.

IMPORTANCE OF COORDINATED PLANNING AND LEADERSHIP

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Importance of leadership

A strong **project champion** is essential to:

- Initiate the project vision
- Engender stakeholder support and buy-in
- Attract funding and resources

SHADoW leader - The Michigan Statewide HMIS
Project

RHINo leaders - Community Technology Alliance and
the Schwab Foundation

GOVERNANCE PHILOSOPHY AND STRUCTURE

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Collaboration and consensus building are keys to success.

The business world's model: central authority

Management *commands* the data warehouse and corporate departments must provide the data.

Our CoC/human services world's model: decentralized authority

Participation is *voluntary* and participants bring their own interests to the table.

GOVERNANCE PHILOSOPHY AND STRUCTURE

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Governance philosophy:

Governance approaches are evolving because HMIS/human service data warehousing is new.

Both RHINo and SHADoW use a single steering group composed of key stakeholder organizations.

Both projects emphasize **consensus building** among equal partner agencies.

In both projects, stakeholders are represented at a policy level for key decisions and involve IT staff.

GOVERNANCE PHILOSOPHY AND STRUCTURE

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Governance group composition:

A single lead steering group helps to centralize planning, enhances project coordination, and avoid confusion.

Key stakeholders should be represented, meaning those who will provide data, use data, pay for the project, or carry out the project.

Representatives should be able to commit, or facilitate commitment of, their organizations at a policy level.

Other composition factors to consider:

- Geographic balance
- Nonprofit provider representation
- Homeless or formerly homeless representation
- Academic/research partners

GOVERNANCE PHILOSOPHY AND STRUCTURE

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BACHIC

- CoC coordinators from 11 CoCs:
Alameda San Mateo
Contra Costa Santa Clara
Marin Santa Cruz
Monterey Solano
Napa Sonoma
San Francisco
- Lead agency

SHADoW Leadership Board

- 6 state agency representatives
Housing Development Authority
Michigan Coalition Against
Homelessness
Human Services
Community Health
Corrections
IT
- Statewide HMIS staff and 3rd-party service contractors

GOVERNANCE PHILOSOPHY AND STRUCTURE

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Committees and other structural issues:

Meeting coordination (who sets the agenda?):

- Co-chairs or executive committee?
- Staff-led?

Working committees (who accomplishes tasks?):

- Fundraising?
- Design/Technology (for IT level involvement)?
- Policies and Procedures?
- Report design and approval?

Fiscal agent (who manages the funds?):

- Partner agency?
- Another government agency or nonprofit?

GOVERNANCE PHILOSOPHY AND STRUCTURE

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Relationship to other local, regional, or statewide groups:

Coordinate and link with other regional or statewide groups, e.g., homeless coalitions or state interagency councils on homelessness

Communicate with local CoC and/or 10-Year planning groups

Remember that the data warehouse should be designed to **serve broader regional or statewide data needs**

APPROACH TO MEETINGS AND DECISION PROCESS

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- Approach to meetings:
- Meetings must be regular and well-planned.
- Regularly scheduled meeting: every month or two months (3-4 hour meetings may be needed).
- **Neutral outside facilitation is key.**
- Agendas should emphasize decisions/action needed now.
- Agenda example:
 - Introductions
 - Agenda review
 - Participant/subcommittee updates
 - 3 to 6 decision/action items
 - Wrap up, next steps, setting next meeting

APPROACH TO MEETINGS AND DECISION PROCESS

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Approach to meetings (cont.):

Support decisions with written presentations and background materials

Steps may be needed to overcome distance barriers to meeting

BACHIC reduces travel time by meeting in the approximate geographic center of Bay Area (Oakland)

SHADoW Leadership Board allows remote meeting participation via on-line visual and audio conferencing technology

APPROACH TO MEETINGS AND DECISION PROCESS

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Decision process:

Critical choices need to be made on many issues

Consensus building is absolutely critical!

Democratic voting should be viewed as supporting and documenting the consensus previously reached

IMPORTANCE OF STAFFING AND FUNDING FOR PLANNING

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Seed funding is needed to pay for process planning and technical expertise.

Planning and technical services that may be needed:

Neutral facilitation (especially for thorny issues)

Meeting space, agenda, other written materials

Project documents (agreements, design documents, work plans, and policies and procedures)

Technology and capacity needs assessment

Fundraising activities

Funds for planning can come from the state, local governments, or an interested foundation.

BASIC PARTICIPATION UNDERSTANDINGS AND AGREEMENTS

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- It is **critical to take the time needed to define core understandings and agreements.**
- These core understandings and agreements are the “glue” that holds the collaboration together.
- Reaching core understanding and agreement can be very challenging, but once done helps to catapult the project toward success.

BASIC PARTICIPATION UNDERSTANDINGS AND AGREEMENTS

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- BACHIC Overview & Guiding Principles for RHINo
- SHADoW Interagency Agreement
- SHADoW Participation Agreement
- SHADoW Data Use Agreement

- BACHIC core understandings and agreement are recorded in:
 - Project Overview and Guiding Principles for RHINo
 - Policies and Procedures for Implementation and Operation of RHINo
- SHADoW core understanding and agreements are in a set of documents, including:
 - Interagency Agreement
 - Participation Agreement
 - Data Use Agreement

DEFINING PARTICIPANTS' ROLES AND RESPONSIBILITIES

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- Participants' roles and responsibilities must be defined, agreed, and make sense.
- Central roles and responsibilities are best recorded in the core participation agreements or MOUs.
- Operational roles and responsibilities should be detailed in policies and procedures or standard operating procedures document.
- No matter where they are recorded, it is very important to take the time to make sure **everyone understands and agrees with their roles and responsibilities.**

DEFINING PARTICIPANTS' ROLES AND RESPONSIBILITIES

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- Roles and responsibilities may need to be articulated for any combination of:
 - Steering group
 - Committees of the steering group
 - Representatives of CoCs, state agencies, or other groups
 - Lead agency
 - Data warehouse staff or contractors
 - Local HMIS staff
 - Planning, fundraising, and technical consultants
 - Data analyst and academic researchers

DEFINING PARTICIPANTS' ROLES AND RESPONSIBILITIES

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- Policies and procedures or standard operating procedures are very useful for defining roles and responsibilities.
- General topics:
 - Data preparation, transfer, and receipt
 - Data access rights
 - Data warehouse management and administration
 - Data confidentiality and security
 - Data release, reporting, and publication
 - Researcher and 3rd party participation

APPROACHES TO OVERCOMING BARRIERS TO BUY-IN AND SUCCESS

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- The “people” issues are more challenging than the problems with technology.
- A significant challenge is to sustain participant buy-in and support.
- Two keys to success:
 - Make a compelling case for the value of the regional or statewide data.
 - Actively address participants’ specific concerns and problems.

APPROACHES TO OVERCOMING BARRIERS TO BUY-IN AND SUCCESS

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- **Common participation barriers:**
 - Not understanding the value of regional or statewide data
 - Lack of funding for participation and contribution of data
 - Lack of staff time or capacity for contributing data
 - Concerns about control and ownership of data contributed
 - Concerns that comparative data might reflect negatively on the agency or CoC

APPROACHES TO OVERCOMING BARRIERS TO BUY-IN AND SUCCESS

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- Common participation barriers (cont.):
 - Concerns about protecting confidential information
 - Perceiving the project as lower priority than, or competitor for resources to, other activities (e.g., HMIS or PIT count)
 - Staff turnover among participants
 - Lack of authority or willingness to commit the participating CoC or agency

APPROACHES TO OVERCOMING BARRIERS TO BUY-IN AND SUCCESS

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- **Strategies to overcome barriers:**
 - Explain the specific uses and value of regional or statewide data.
 - When possible build on existing technology, MOUs, Data Use Agreement, and policies.
 - Identify and include existing supporters of regional or statewide approaches on homelessness.
 - Reach out to and regularly inform all stakeholders.
 - Carefully and respectfully listen to all participants issues and concerns.
 - Seek to provide answers and solutions to each issue or concern.

APPROACHES TO OVERCOMING BARRIERS TO BUY-IN AND SUCCESS

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- Strategies to overcome barriers (cont.):
 - Show all the benefits of the project, such as shared HMIS strategies and practices.
 - Help with local CoC or agency costs if possible.
 - Exceed local CoCs' confidentiality and security requirements, including removing client identifiers.
 - **Be persistent!** Changing minds will take time.
 - **Remain positive!** Your enthusiasm will help convince others.

IMPORTANCE OF DEVELOPING A COMMON VISION

- The single most important planning activity of a regional or statewide data project is to **create understanding and consensus around what the project will accomplish.**
- An early planning goal should be to surface everyone's ideas and forge the commonalities into a unified vision.
- The resulting vision may be for a data warehouse, or it may be for another form of collaboration.
- The important thing is give sufficient time to reach group consensus on what the project must accomplish and how it will do so.

IMPORTANCE OF DEVELOPING A COMMON VISION

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- A step-by-step strategy - **CUPID**
 - Craft a vision or mission statement.
 - Uncover the benefits expected.
 - For policymakers?
 - For service providers?
 - For homeless people?
 - For the public? Others?
 - Prepare the programmatic goals for meeting vision/mission.
 - Identify the reports needed to meet the goals.
 - Determine the data needed to generate the needed reports.

KEY LESSONS LEARNED AND SUGGESTIONS

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- Cultivate strong leadership.
- Build upon a prior history of regional or statewide collaboration.
- Budget and identify funding for planning.
- Policy should guide technology, not the reverse.
- Make sure key stakeholder are represented at the policy level and that IT staff are also engaged.
- Consensus building is a critical activity.
- Developing and gaining buy-in for regional or statewide vision is also a critical activity.
- **Be patient!** - It will take more time than expected.
- Take steps to ensure that the project complements and supports other state, regional, and local groups.

KEY LESSONS LEARNED AND SUGGESTIONS

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- Listen to the issues and concerns of participants.
- Provide answers and solutions to participants concerns.
- Nurture the process with neutral facilitation, staffing, and technical expertise.
- Use technology to overcome distance barriers.
- Assess (periodically) participants' technology needs and capacity to participate in a data warehouse.
- Use a work plan/checklist to identify and logically order all needed tasks and make sure they are completed.
- Clearly document all important agreements and decisions.

DATA WAREHOUSING: ADDITIONAL RESOURCES

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- Curricula:
- Data Warehousing 101
- Data Warehouse Program Requirements
- Data Warehouse System Design and Technology Choices