# The Nuts & Bolts of Data Collection

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## Presenter Disclosures

Rachel Pearson

- The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

"No relationships to disclose."

## HFHS School-Based & Community Health Program

- Established in Detroit, Michigan in 1994
- Initial support from the W.K. Kellogg Foundation in partnership with the Detroit Public Schools
- Current funding:
  - HFHS, local, state & private sources
- Services offered:
  - Primary care, behavioral health (including psychiatric services), prevention, health education, reproductive health, & Medicaid outreach

## SBCHP Program Composition

- 7 school-based health centers
  - 8th school-based clinic opened in May 2009
- 1 school-linked health center
- Health education program in 4 schools
- Oral health services
  - Permanent program at 1 clinic
  - Mobile program at 4 clinics
- Vision services (pilot program)
  - Mobile program at 3 clinics
- Changes coming for next year

# Evolution of SBCHP Data

Electronic: some clinical services
Paper: everything else

↓

Electronic: reimbursable services (billing)
Paper: everything else

↓

Electronic: all clinical services, health education, behavioral health caseloads, some referrals, Medicaid outreach
Paper: medical records, labs, follow-up, some referrals

↓

Electronic: everything above including medical records, labs, follow-up, referrals

2011 goal!

# Current Data Stored Electronically

- Data stored in multiple databases
  - Consent form databases
  - Billing database
  - RN database (general nursing services)
  - Health education database
  - Oral health database
  - Vision services database
  - Medicaid outreach database

# Future Plans for Data

- Electronic health record
  - Consent forms
  - Billing data
  - Medical records
- Other database (MRN from EHR used to link patients)
  - General nursing & care manager services
  - Oral health
  - Vision services
  - Medicaid Outreach
- Health education database

# SBCHP 2008 Program Demographics

| Race | Percent |
|---|---|
| American Indian/Alaska Native | 0.14% |
| Asian/ Other Pacific Islander | 1.28% |
| Black/ African American | 57.97% |
| White/Caucasian | 10.53% |
| Multi-racial | 0.31% |
| Unreported/Unknown | 29.77% |
| **Ethnicity** | **Percent** |
| Arabic | 1.39% |
| Hispanic | 0.33% |
| Non Arabic/Hispanic | 98.28% |

| Age | Percent |
|---|---|
| 0-4 | 3.25% |
| 5-10 | 30.89% |
| 11-12 | 12.97% |
| 13-15 | 26.56% |
| 16-18 | 20.19% |
| 19-21 | 3.44% |
| 22+ | 2.69% |
| **Gender** | **Percent** |
| Male | 45.19% |
| Female | 54.81% |

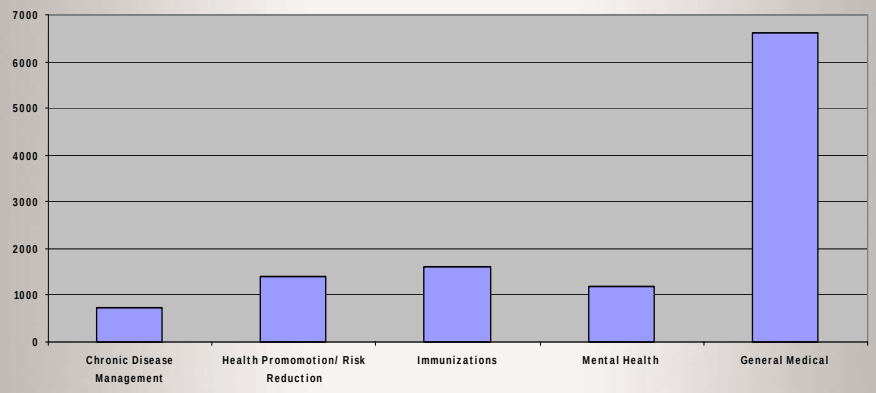
# SBCHP 2008 Program Demographics

| Insurance at Last Visit | Percent |
|---|---|
| Blue Cross Blue Shield | 11.01% |
| Commercial | 3.11% |
| Commercial HMO | 3.91% |
| Medicaid | 8.43% |
| Medicaid HMO | 56.52% |
| Medicare | 0.06% |
| Tricare and Other | 0.19% |
| Uninsured | 16.78% |

# SBCHP 2008 Program Data

- Patients seen
  - ≈4,300
- Patient visits
  - 10,135
- Physical health visits
  - 8,956
- Behavioral health visits
  - 1,179

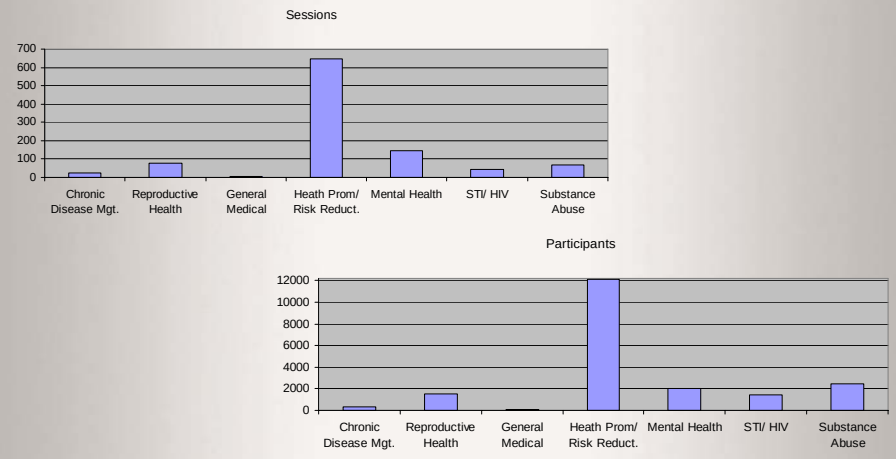
# SBCHP 2008 Program Data
# Top Services Provided




# SBCHP 2008 Program Data
# Top Medical Diagnoses

| ICD9 Code | Diagnoses Description | Visits |
|---|---|---|
| V20.2 | ROUTINE INFANT OR CHILD HEALTH CHECK | 870 |
| 784.0 | HEADACHE | 294 |
| 465.9 | ACUTE UPPER RESPIRATORY INFECTIONS OF UNSPCIFIED SITE | 221 |
| 493.90 | ASTHMA, UNSPECIFIED | 186 |
| 460 | ACUTE NASOPHARYNGITIS [COMMON COLD] | 159 |
| V72.0 | EXAMINATION OF EYES AND VISION | 147 |
| 462 | ACUTE PHARYNGITIS | 140 |
| 278.00 | OBESITY, UNSPECIFIED | 125 |
| 477.9 | ALLERGIC RHINITIS, CAUSE UNSPECIFIED | 125 |
| 536.8 | DYSPEPSIA & OTHER SPECIFIED DISORDERS OF FUNCTION OF STOMACH | 124 |

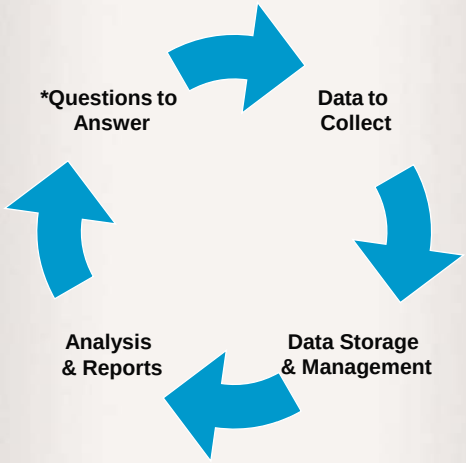
# SBCHP 2008 Program Data
# Health Education







# Lifecycle of Data



## Small Group Exercise

- Turn to the last page in your packet
- Look at the stakeholder questions
  - What additional questions should we add?
- Work in small groups to complete the form
- Discuss findings with the large group

## Self Assessment

Where is your program in the lifecycle of data?

- Identifying questions to answer

just starting | moving along | going strong

## Self Assessment

Where is your program in the lifecycle of data?

- Identifying data to collect

just starting | moving along | going strong

## Data Collection Tools Things to Consider

- Development takes time, plan on revisions
- Choose vocabulary carefully
  - Consider the audience
- Avoid ambiguity
  - Have others interpret items for clarification
- Phrase items and responses correctly
  - Statements use Agree/ Neutral/ Disagree
  - Questions use Always/ Sometimes/ Never

## Data Collection Tools Things to Consider

- Limit open ended questions
  - Difficult to predict how people will answer
  - Time consuming to code for data entry
- Focus on multiple choice
  - Limits variety of responses
  - Easy to code
  - Use even for simple questions like gender
- Be precise with questions

## Data Collection Tool Example

Open Ended Question

- How often do you exercise? _____
  - Sample responses
    - Sometimes
    - When I feel like it
    - A lot
    - It depends
    - Two or three times a week

## Data Collection Tool Example

Multiple Choice Question

- How frequently do you exercise each week?
  - Never
  - 1-2 times
  - 3-4 times
  - 5-6 times
  - everyday

## Data Collection Tools Things to Consider

- Ambiguous questions yield useless data
- Consider the following sometimes/ always/ never questions:
  - How often do you drink? *drink what?*
  - Are you satisfied? w*ith what?*
  - Do you eat fruit? *during what time period?*

## Data Collection Methods

- Data collected on paper
  - Handwritten
  - Typed and then printed
- Data entered into a database
  - Entered by person providing the data
  - Entered by the person collecting the data

## Self Assessment

Where is your program in the lifecycle of data?

- Designing data collection tools & methods

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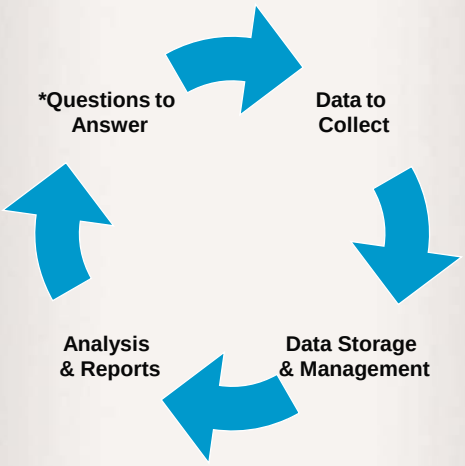
# Lifecycle of Data




# Data Storage

- Paper records
  - Cumbersome
  - Requires manual manipulation of data
- Electronic records
  - Easier to manipulate for analysis & reporting
  - Two step process with paper collection & electronic storage
  - One step process with electronic collection & storage

## Data Storage

- Two main types of databases
- Flat file databases
  - Excel
  - All data for a record is stored in one row
  - Easy to set-up
  - Good for simple datasets (i.e., attendance logs)
  - Ease of use depends on complexity of data
  - Cumbersome for large datasets

## Data Storage

- Relational databases
  - MS Access
  - Data is stored in multiple tables
  - Tables relate to each other through common data elements
  - Good for complex databases (billing data)
  - More difficult to set-up & manage
  - Easy to enter data using “forms”

## Which one to use?

- Flat file databases (Excel)
  - Simple stand alone data
    - Pre/post test data
    - Satisfaction survey data
- Relational databases (MS Access)
  - Complex data relationships (one-to-many)
    - One patient with multiple visits
    - One visit with multiple procedures

## Learning How to Use Databases

- Flat file databases
  - Not too hard to learn on your own
  - Good how to books for software like Excel
- Relational databases
  - Hard to learn on your own
  - Look for classes at a local community college
- Collage/graduate students needing internships may be able to help

## Database Development

- Not a one-size fits all process
- Consider
  - Skills of database developer
  - Skills of staff entering data
  - Type of data (numeric, text)
  - How data will be used (questions to answer)
  - How data will be manipulated
  - How data will be reported

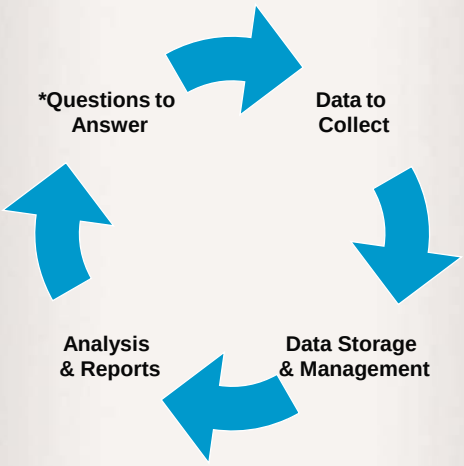
## Self Assessment

Where is your program in the lifecycle of data?

- Status of database development/ data storage

just starting | moving along | going strong

# Lifecycle of Data




# Data Management

- Storing data is a beginning, not an end
  - Data retrieval is paramount
    - No point in storing data that cannot be retrieved
  - Test retrieval systems early in the process
    - Verify retrieved data is in a useful format
  - Ensure data is entered correctly
    - Staff who document & enter data are properly trained
- HIPAA considerations

## Data Quality Control

- Similar to chart audits
- Conduct on a regular schedule
- Select a sample of records and examine for accuracy
- Identify missing data
- Identify duplicate data

## Data Quality Control

- Run reports and look for unusual data
  - Ages outside of program population range
  - Staff attached to the wrong clinics
  - Procedures attached to the wrong staff
- Errors should be corrected
  - Flagging errors is better that deleting
- Identify & correct processes that may contribute to errors
- Re-train staff as needed

# Self Assessment

Where is your program in the lifecycle of data?

- Status of Data Quality Control

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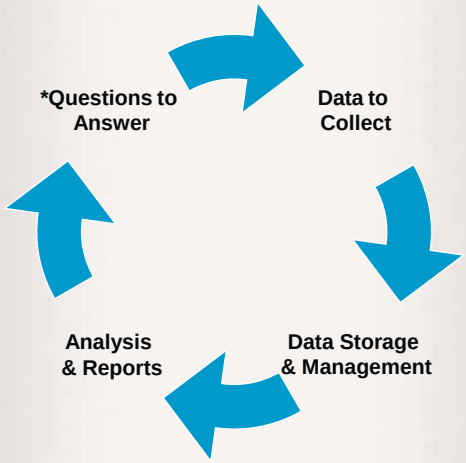
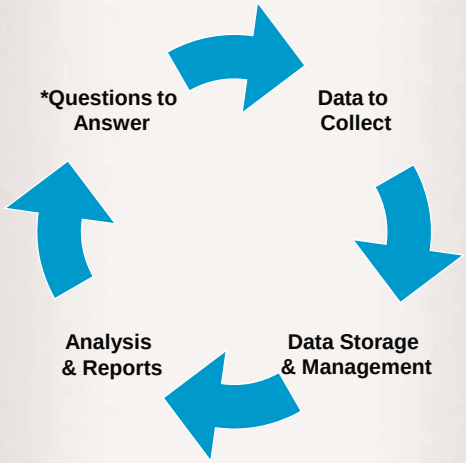
# Lifecycle of Data



# Analysis and Reports

- Analysis depends on the type of database & questions to answer
- Basic reports useful for SBHCs
  - Number of patients
  - Demographics of patients
  - Number & type of visits
  - Most frequently made diagnoses
  - Needs of patients (needs assessments)
  - Satisfaction with services

# Lifecycle of Data



## Self Assessment

Where is your program in the lifecycle of data?

- Overall Program Rating

just starting | moving along | going strong

## Small Group Exercise

- Identify two things your program does well
- Identify two things your program needs to improve
- Share this information with a neighbor

## Small Group Exercise

- Pick one area of improvement
- Create a specific goal for improving that area
- Identify three action steps that you can and will take to reach your goal

## Small Group Exercise Example

- Area: We need a more sophisticated method of storing data
- Goal: Develop a relational database
- Action Steps:
  - 1) Identify the staff person best capable of developing a database
  - 2) Locate a training for the staff person to attend
  - 3) Send the staff person to the training

## Small Group Exercise

- Pick one area of improvement
- Create a specific goal for improving that area
- Identify three action steps that you can and will take to reach your goal
- Share this information with a neighbor

## Closing Advice

- Start with the end in mind
- Don't try to do everything at once
  - Incremental change is easer to maintain
  - Remember what has been accomplished when looking at what needs to be done
- Systems won't always work the first time
  - Be prepared for several iterations
  - Sometimes a bad system helps staff embrace the better system