Using the CDC Framework to Evaluate School-Based Asthma Programs
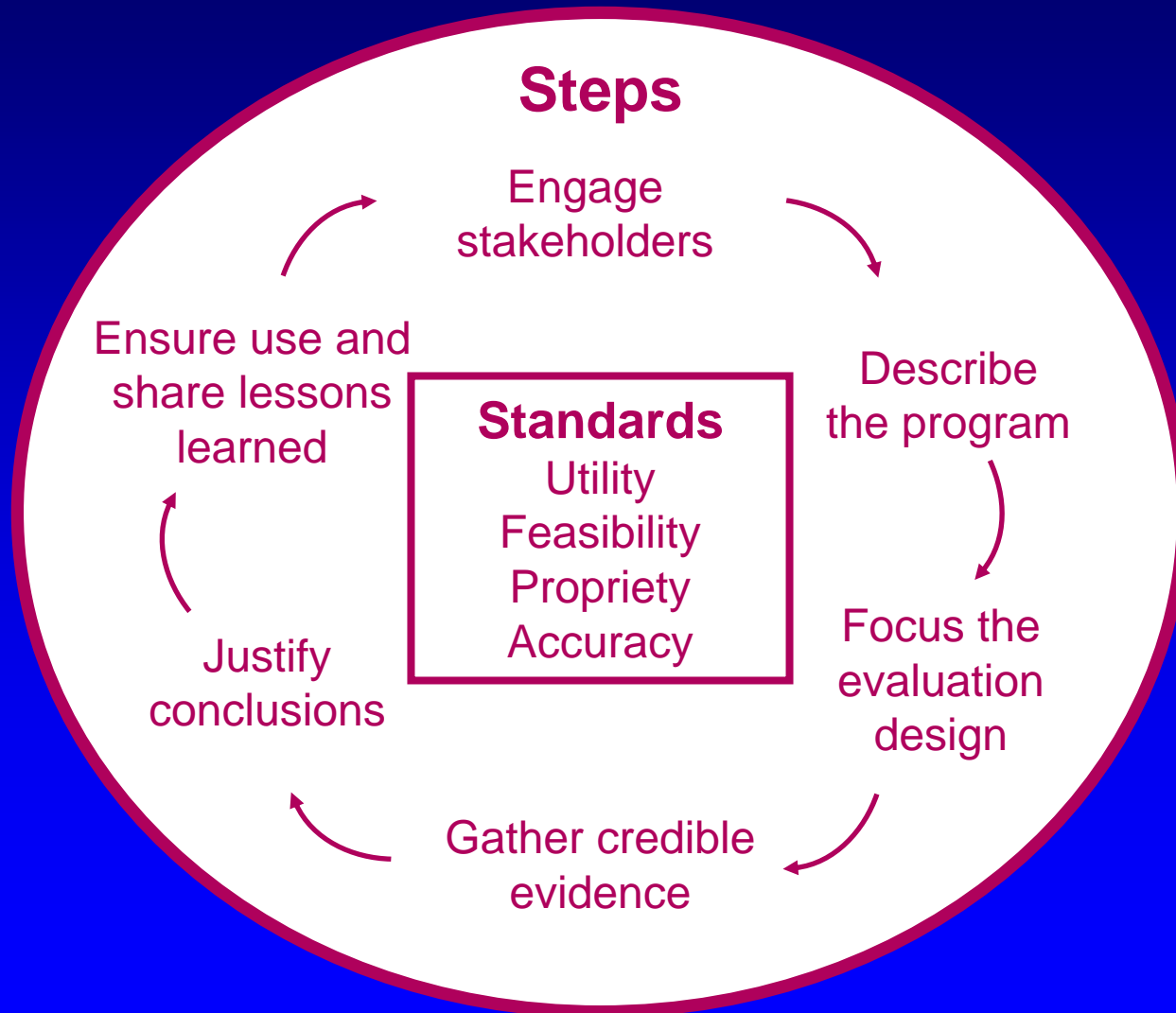
Catherine N. Rasberry, Ph.D., CHES

Division of Adolescent and School Health,
Centers for Disease Control and Prevention

CDC

Objectives:

A After this webinar, participants will be able to:

- List the six steps of the CDC Framework for Evaluation;

- Identify possible stakeholders unique to school-based asthma programs;

- Explain a sample logic model for school-based asthma programs;

- Describe important considerations for focusing the design of a school-based asthma program evaluation;

- Identify possible sources of credible data for school-based asthma program evaluation;

- Describe important considerations in analyzing and interpreting school-based asthma program evaluation data; and

- Identify at least three strategies that can enhance the likelihood that findings from school-based asthma program evaluations will be used.

CDC

CDC Evaluation Framework

Steps

Engage stakeholders

Ensure use and share lessons learned

Describe the program

Standards
Utility
Feasibility
Propriety
Accuracy

Focus the evaluation design

Justify conclusions

Gather credible evidence

CDC

CDC Evaluation Framework: Standards for Effective Evaluation

- Utility
  - Serve the information needs of intended users
- Feasibility
  - Be realistic, prudent, diplomatic, and frugal
- Propriety
  - Behave legally, ethically, and with regard for the welfare of those involved and those affected
- Accuracy
  - Reveal and convey technically accurate information

Step 1: Engaging Stakeholders

⅄ Stakeholders – persons involved in or affected by the program and primary users of the evaluation

⅄ Why engage stakeholders?

- Make evaluation useful

- Increase credibility

- Help protect participants

⅄ Who could be stakeholders in a school-based asthma program?

CDC

You Tell Me…

⬥ What types of stakeholders have you worked with in school-based asthma programs?

- Asthma program staff
- Funders/sponsors
- Local asthma coalitions
- Hospitals/emergency clinics
- Insurance agencies
- Students with asthma
- School nurses

- Teachers and principals
- Bus drivers
- HVAC personnel
- Custodians and maintenance personnel
- Parents
- School Board members
- Other community organizations (ALA, Boys and Girls Clubs, faith-based organizations, etc.)

CDC

Step 1: Engaging Stakeholders

⮞ After identifying stakeholders, decide how they will be engaged in the evaluation process.

- Directly involved in designing and conducting the evaluation

- Informed periodically of evaluation progress

- Can provide guidance and/or feedback in all steps of the evaluation process

CDC

Step 2: Describing the Program

⋏ Need

⋏ Expected Effects

⋏ Activities

⋏ Resources

⋏ Stage of Development

⋏ Context

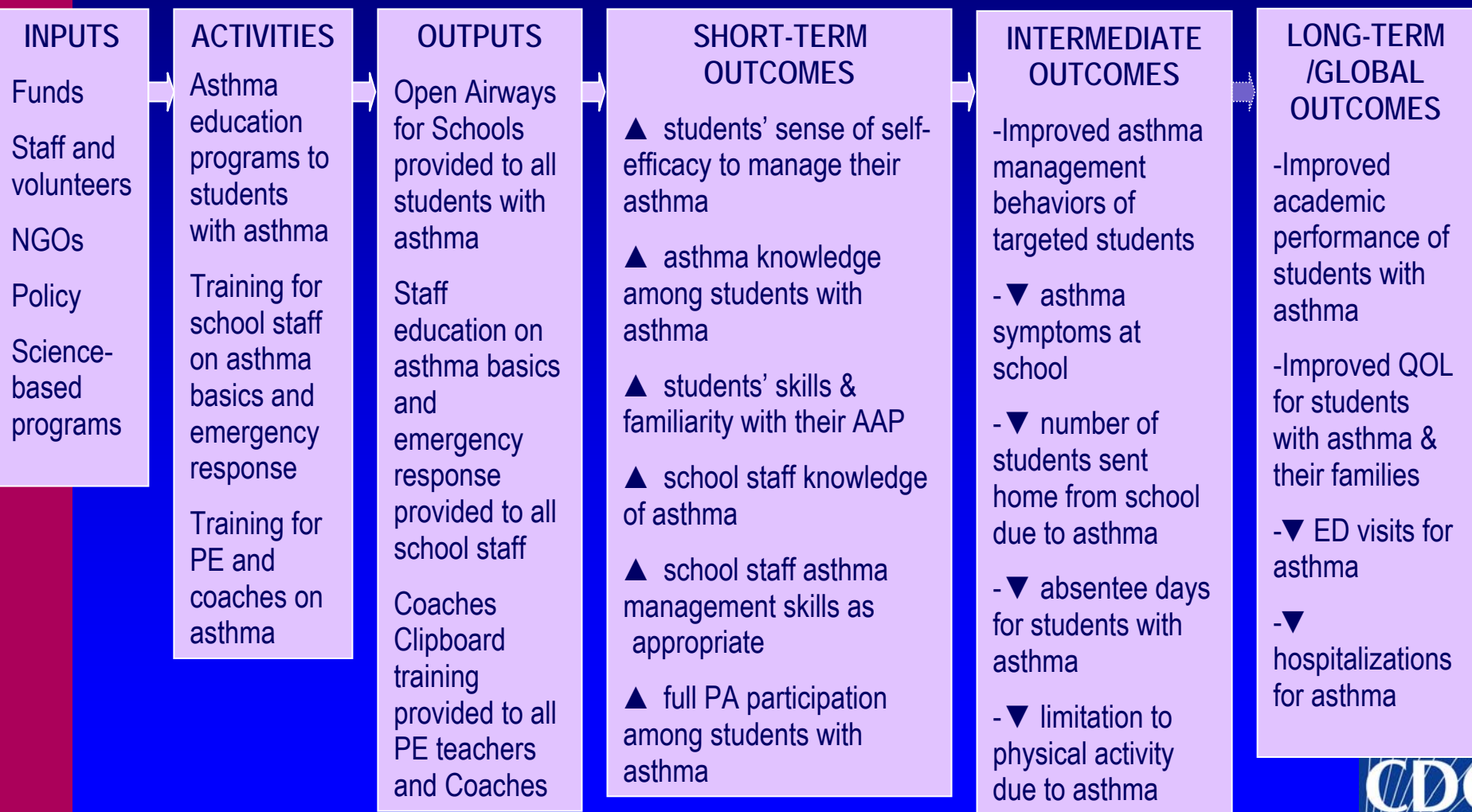⋏ Logic Model

CDC

Step 2: Describing the Program Logic Model

⚠ A visual depiction of how your program is intended to work; shows relationships between elements of the program and expected changes

⚠ Can be an excellent tool to help guide your evaluation

⚠ Although a logic model is not an essential prerequisite for evaluation, the understanding of your program that it depicts *is* essential.

Logic Model for Planning & Evaluating LEA Efforts to Help Schools Address Asthma

DRAFT

Overall DASH Goal: Increase the number of 'asthma-friendly' schools nationwide

INPUTS

Funds
CDC/ DASH
State, federal, local, and private sources

Staff and volunteers
LEA and/or LHD
-Asthma coordinator
-Health coordinator
-Resource nurses
-School nurses
-Health educators
-Physician consultant
-District- & school-level advisory groups

Collaboration & TA
Federal agencies
NGOs
State agencies
Local agencies
Universities
Parents
Community coalitions
Policy-makers
Community Physicians

Legislation and Policy-
IDEA, 504, ADA-FERPA, HIPAA
Children's Health Act of 2000
Pro-Children Act

State/local school health laws & regulations

Prof Dvpt

Science-based asthma programs

Program planning & evaluation
-Initial needs assessment
-Ongoing quality improvement

ACTIVITIES

Inform & educate policy makers

Establish & maintain program mgmt & administrative support systems
•information mgmt
•communication
•reimbursement

Build partnerships
•ID & provide guidance & resources to LEA asthma champion
•Participate in school health advisory council, asthma coalition & family activities

-Establish 'asthma-friendly' policies
•tobacco-free
•access to medicines
•AAP
•emergency care
•physical activity
•IAQ

-Provide health & mental health services
•Conduct case identification, refer uninsured
• Ensure links with medical care
•Require AAP & provide acute care
•Track symptoms & attendance
•Target students with poorly controlled asthma
•Provide intensive case management

-Provide asthma ed programs
•all students
•students with asthma
•school staff
•PE and coaches
•parents

-Provide or support smoking cessation
•any student
•staff

-Develop an environmental management plan

-Develop an IPM plan

-Develop a system for evaluating & improving policies and programs
•use a coordinated approach
•monitor school policies & programs
•monitor asthma prevalence using YRBSS
•focus on health disparities

OUTPUTS

Presentations conducted & target audiences

Program mgmt & administrative support systems in place
•data tracking system
•communication system

Partners participate in activities

'Asthma-friendly' policies established

Asthma case identification conducted
AAP required
Attendance data for students with asthma tracked and monitored

Acute care protocols established

Equipment & supplies provided

Qualified staff trained & available at all times

Updated AAPs from MDs on file at school

Communication plan between MDs and RNs established

Effective case management services provided

Appropriate asthma ed sessions provided for specified target audiences

Smoking cessation sessions available for any student & staff

PA guidance established

Tobacco-free policy established

Environmental management plan established

IPM plan established

Annually reviewed policies available

Annual process evaluation report available

SHORT-TERM OUTCOMES

▲ collaboration among agencies, organizations, providers & the community

▲ skills of designated staff & peer educators to plan & deliver high quality asthma programs

▲ number of schools that:
• permit self-carry/self-administration of quick relief medicine by appropriate students
•assure immediate access to quick relief medications
•target students with poorly controlled asthma

▲ knowledge of which students have asthma (including days absent) among appropriate school staff

▲ number of schools that report:
• number of students identified with asthma
• current AAP on file at schools for students known to have asthma
• attendance data for students with asthma

▲ student adherence to AAP

▲ staff adherence to AAP

▲ access at schools to asthma management tools (peak flow meters, spacers)

▲ correct use of asthma management tools (peak flow meters, spacers) by students with asthma

▲ communication among medical home, family and school nurses (or other appropriate staff)

▲ use of appropriate pharmacotherapy by students with persistent asthma

▲ students' sense of self-efficacy to manage their asthma

▲ asthma knowledge among students with asthma

▲ students' skills & familiarity with their AAP

▲ school staff knowledge of asthma

▲ school staff asthma management skills as appropriate

▲ full PA participation among students with asthma

▲ number of schools that implement & enforce 'tobacco-free' policies

INTERMEDIATE OUTCOMES

- ▲ enforcement of 'asthma-friendly' policies

-Improved asthma management behaviors of targeted students

-Improved asthma management behaviors of staff

- ▲ access to health care for students with asthma

- ▼ asthma symptoms at school

- ▼ number of students sent home from school due to asthma

- ▼ absentee days for students with asthma

- ▼ limitation to physical activity due to asthma

LONG-TERM /GLOBAL OUTCOMES

-Improved academic performance of students with asthma

-Improved interactions between schools & medical homes

-Improved QOL for students with asthma & their families

-▼ ED visits for asthma

-▼ hospitalizations for asthma

-▼ health disparities (QOL, ED, Hospitalizations) among students with asthma

Key

IAQ:	Indoor Air Quality
Asthma-friendly:	Policies and procedures that create safe and supportive learning environments for students with asthma
ED:	Emergency Department
SEA:	State Education Agency
ToT:	Training of the Trainer
LEA:	Local Education Agency
TA:	Technical Assistance
Prof Dvpt:	Professional Development
Absences:	% absentee days
PA:	Physical activity, physical education, athletics
MGMT:	Management
QOL:	Quality of Life
AAP:	Asthma Action Plans
▼ :	Decreased
Asthma ed:	Asthma Education
▲ :	Increased
IPM:	Integrated pest management
YRBSS:	Youth Risk Behavior Surveillance System

CDC

Step 2: Describing the Program Logic Model for Addressing Asthma

INPUTS	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	INTERMEDIATE OUTCOMES	LONG-TERM /GLOBAL OUTCOMES
Funds	Asthma education programs to students with asthma	Open Airways for Schools provided to all students with asthma	▲ students' sense of self-efficacy to manage their asthma	-Improved asthma management behaviors of targeted students	-Improved academic performance of students with asthma
Staff and volunteers			▲ asthma knowledge among students with asthma	- ▼ asthma symptoms at school	
NGOs	Training for school staff on asthma basics and emergency response	Staff education on asthma basics and emergency response provided to all school staff	▲ students' skills & familiarity with their AAP	- ▼ number of students sent home from school due to asthma	-Improved QOL for students with asthma & their families
Policy			▲ school staff knowledge of asthma		
Science-based programs	Training for PE and coaches on asthma	Coaches Clipboard training provided to all PE teachers and Coaches	▲ school staff asthma management skills as appropriate	- ▼ absentee days for students with asthma	-▼ ED visits for asthma
			▲ full PA participation among students with asthma	- ▼ limitation to physical activity due to asthma	-▼ hospitalizations for asthma

CDC

Step 3: Focusing the Evaluation Design

⤷ Consider:

- Purpose

- Users

- Uses

- Questions

- Methods

- Agreements

CDC

Step 3: Focusing the Evaluation Design

⊿ Purpose

- To gain insight? Change practice? Assess effects? Affect participants?

Source: Centers for Disease Control and Prevention. Framework for program evaluation in public health. MMWR 1999;48(No. RR-11).

You Tell Me…

- For which of the following purposes have you used evaluation?
  - To see if a program had its intended effect
  - To determine which program components were most effective
  - To identify unintended consequences of a program
  - To gain insight that could be used to improve program implementation (facilitators, barriers, etc.)
  - To help program participants learn
  - To determine cost-effectiveness
  - To meet a funder's requirements

Step 3: Focusing the Evaluation Design

- Users
  - Who will use the evaluation findings? Involve those people in selecting questions and methods.
  - In a school-based asthma program, who might some of the users be?
    - Program director/staff/nurses
    - Local asthma coalition
    - Funders
    - Principal
    - Superintendent
    - School board members

CDC

Step 3: Focusing the Evaluation Design

⯅ Uses

  • Clarify how results will be used.

    ⬈ This will be linked to specific users.

Source: Centers for Disease Control and Prevention. Framework for program evaluation in public health. MMWR 1999;48(No. RR-11).

Example Logic Model Segment

INPUTS	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	INTERMEDIATE OUTCOMES	LONG-TERM /GLOBAL OUTCOMES
Funds Staff and volunteers NGOs Policy Science-based programs	Asthma education programs to students with asthma Training for school staff on asthma basics and emergency response Training for PE and coaches on asthma	Open Airways for Schools provided to all students with asthma Staff education on asthma basics and emergency response provided to all school staff Coaches Clipboard training provided to all PE teachers and Coaches	▲ students' sense of self-efficacy to manage their asthma ▲ asthma knowledge among students with asthma ▲ students' skills & familiarity with their AAP ▲ school staff knowledge of asthma ▲ school staff asthma management skills as appropriate ▲ full PA participation among students with asthma	-Improved asthma management behaviors of targeted students - ▼ asthma symptoms at school - ▼ number of students sent home from school due to asthma - ▼ absentee days for students with asthma - ▼ limitation to physical activity due to asthma	-Improved academic performance of students with asthma -Improved QOL for students with asthma & their families -▼ ED visits for asthma -▼ hospitalizations for asthma

CDC

Step 3: Focusing the Evaluation Design

⋏ Evaluation questions

- Create boundaries for your evaluation; work with stakeholders to select evaluation questions to be answered.

Step 3: Focusing the Evaluation Design

⊾ Methods

- Design: Experimental? Quasi-experimental? Observational?

- Other considerations: What data sources will be used? What data collection instruments are necessary? Who collects data? How is it managed? How will it be analyzed?

CDC

Step 3: Focusing the Evaluation Design

⚐ Agreements

- Clarify how evaluation plan will be implemented and establish clear roles and responsibilities for those involved.

CDC

Step 4: Gathering Credible Evidence

⌃ Information needs to be both believable and relevant to stakeholders.

⌃ Credible evidence allows for sound judgments and well-supported recommendations.

⌃ Credibility of evidence can be impacted by:

- Indicators
- Sources (of data)
- Quality
- Quantity
- Logistics

Step 4: Gathering Credible Evidence

⤴ Indicators

- Translate general concepts regarding the program, its context, and its expected effects into specific measures that can be interpreted

- Examples:

  ➚ Program participation rates

  ➚ Client satisfaction

  ➚ Intervention exposure (dosage)

  Program activities

  ➚ Changes in behavior

  ➚ Changes in policy

  ➚ Changes in environment

  Program effects

CDC

Example Logic Model Segment

INPUTS	ACTIVITIES	OUTPUTS	SHORT-TERM OUTCOMES	INTERMEDIATE OUTCOMES	LONG-TERM /GLOBAL OUTCOMES
Funds	Asthma education programs to students with asthma	Open Airways for Schools provided to all students with asthma	▲ students' sense of self-efficacy to manage their asthma	-Improved asthma management behaviors of targeted students	-Improved academic performance of students with asthma
Staff and volunteers		Staff education on asthma basics and emergency response provided to all school staff	▲ asthma knowledge among students with asthma	-▼ asthma symptoms at school	-Improved QOL for students with asthma & their families
NGOs	Training for school staff on asthma basics and emergency response		▲ students' skills & familiarity with their AAP	-▼ number of students sent home from school due to asthma	
Policy			▲ school staff knowledge of asthma	-▼ absentee days for students with asthma	-▼ ED visits for asthma
Science-based programs	Training for PE and coaches on asthma	Coaches Clipboard training provided to all PE teachers and Coaches	▲ school staff asthma management skills	-▼ limitation to physical activity due to asthma	-▼ hospitalizations for asthma
			▲ full PA participation among students with asthma		

CDC

Step 4: Gathering Credible Evidence

⤢ Sources of data

- Identify sources of data to address your indicators.

- Some indicators may be measured by more than one data source.

- Consider using more than one type of data – Qualitative and quantitative

  ⤢ Ex: Ask about access to inhalers on a student survey and in focus groups.

CDC

Step 4: Gathering Credible Evidence

⬈ Sources of data

- Examples from DASH asthma program evaluations:

  ⬈ Student surveys, student and parent focus groups, interviews with key staff, nurse and health service records, policy documents, program participation records

- Other examples:

  ⬈ School attendance records, hospital/ED records, PE class records, student information forms, grades/academic achievement records

CDC

Step 4: Gathering Credible Evidence

⟁ Quality of data

- Impacted by collection instruments, collection procedures, sources, data management, coding, error-checking, and other factors

- Goal (in the real world): obtain data that is high enough quality to meet the stakeholder's criteria for credibility

⟁ Quantity of data

- To ensure conclusions can be made with confidence

CDC

Step 4: Gathering Credible Evidence

- Logistics
  - Methods, timing, and infrastructure for collecting and handling data
  - When working with schools, consider:
    - Parental consent/student asset
    - If surveying students, plan for those who don't participate
    - Academic Calendar:
      - Summer, winter, and spring breaks
      - Standardized testing (may be hard to pull students out of class during or immediately prior to this time)
      - Snow days!
      - School events
    - Teachers' schedules
    - Priorities of the administration

Step 5: Justifying Conclusions

⬧ Evaluation conclusions are justified when they are linked to the evidence gathered and judged against agreed-upon values or standards set by the stakeholders.

- This is a necessary step for evaluation findings to be used.

⬧ Standards – values of the stakeholders against which the program is judged

- Program objectives, performance by a comparison group, participant needs, participation levels, feasibility, sustainability, and institutional goals

CDC

Step 5: Justifying Conclusions

⚼ Analysis/Synthesis

- Guided by evaluation questions, types of data, and stakeholder input

⚼ Interpretation

- Determining the practical significance of the evidence

⚼ Judgments

- Making statements about the merit, worth, or significance of the program

CDC

Step 5: Justifying Conclusions

⤺ Recommendations

- What actions should be considered given the evaluation results?

    ↗ This requires knowledge of program context, not just evaluation results.

    ↗ Share draft recommendations.

⤺ Remain aware of the limitations of your evaluation.

CDC

Step 6: Ensuring Use and Sharing Lessons Learned

⚑ Must plan for using data from the beginning.

⚑ Critical elements:

- Design

- Preparation

- Feedback

- Follow-up

- Dissemination

Source: Centers for Disease Control and Prevention. Framework for program evaluation in public health. MMWR 1999;48(No. RR-11).

CDC

To Sum It Up

⚟ We've discussed:

- Six steps of the CDC Framework for Evaluation;

- Stakeholders unique to school-based asthma programs;

- Using logic models for school-based asthma programs;

- Considerations for focusing the design of a school-based asthma program evaluation;

- Sources of credible data for school-based asthma program evaluation;

- Considerations in analyzing and interpreting school-based asthma program evaluation data; and

- Strategies to enhance the likelihood that findings from school-based asthma program evaluations will be used.

CDC

Questions?

Using the CDC Framework to Evaluate School-Based Asthma Programs

Catherine N. Rasberry, Ph.D., CHES

Division of Adolescent and School Health,
Centers for Disease Control and Prevention

CDC