

Working with Epidemiologists for Heart Disease & Stroke Prevention Program Development

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Overview

- Epidemiology definitions
- Data sources you should know
- Epidemiologists: “What DO you do?”
- What an epidemiologist can do for your programmatic activities
- “Stroke Warning Signs Media Campaign”
- Hands-on Practice

Key Definitions

- **Epidemiology** “is the study of how often diseases occur in different groups of people and why. Epidemiological information is used to plan and evaluate strategies to prevent illness and as a guide to the management of patients in whom disease has already developed.”

(Source: <http://bmj.bmjournals.com/collections/epidem/epid.1.shtml>)

- **Public Health Surveillance** — “The systematic collection, analysis, interpretation, and dissemination of health data on an ongoing basis, to gain knowledge of the pattern of disease occurrence and potential in a community, in order to control and prevent disease in the community.”

(Source: www.cdc.gov/reproductivehealth/epi_gloss2.htm)

Common Epidemiology Data Sources

- **Surveys**
 - **Risk factor data (BRFSS, YRBS)**
 - **Self-report, disease & disability**
 - **Economic data**
 - **Demographics**
- **Census**
 - **Population estimates**
 - **Births**
 - **Deaths (Cause-specific)**
 - **Economic data**
 - **Socioeconomic indicators**

(Source: Chronic Disease Surveillance in Canada, 2003)

Common Epidemiology Data Sources

- **Administrative databases**
 - Hospital discharge data
 - Health insurance (claims) data
 - Prescription Drug use datasets
 - Mortality
 - Morbidity
 - Health Services utilization
- **Registries**
 - Disease-specific incidence mortality
- **Vital Statistics**
 - Birth Records
 - Death Certificates

(Source: Chronic Disease Surveillance in Canada, 2003)

Using Data in a Logic Model

Figure 2: The Scope of Interest for Chronic Disease Data¹³

Determinants ←	Pre-clinical ←	Clinical ←	Outcome
<p>DATA EXAMPLES: genetics: <i>prevalence of breast cancer gene</i> <i>familial disease</i></p> <p>risk behaviour: <i>smoking</i> <i>dietary fat intake</i></p> <p>environment: <i>occupational exposure</i></p> <p>socioeconomic: <i>housing</i> <i>income level</i> <i>education</i></p>	<p>DATA EXAMPLES: screening: <i>PAP testing</i> <i>blood pressure</i> <i>blood glucose</i></p> <p>risk reduction: <i>smoking cessation program uptake</i> <i>physical activity rates</i></p>	<p>DATA EXAMPLES: diagnosis: <i>modes of diagnosis</i> <i>time to diagnosis</i></p> <p>treatment and procedures: <i>surgery</i> <i>systemic therapy</i> <i>radiation</i> <i>palliation</i></p> <p>service use: <i>hospitalization</i> <i>physician visits</i> <i>home care</i> <i>ambulatory care</i> <i>palliative care</i></p> <p>pharmaceutical: <i>drug use</i> <i>complications and interactions</i></p>	<p>DATA EXAMPLES: mortality: <i>cause specific deaths</i> <i>survival rates</i></p> <p>morbidity: <i>complications</i> <i>degree of disability</i> <i>quality of life</i></p>
<p>DATA SOURCES*: <i>surveys</i> <i>census</i> <i>workplace monitoring</i></p>	<p>DATA SOURCES*: <i>screening databases</i> <i>surveys</i> <i>public health program databases</i> <i>primary care physicians</i></p>	<p>DATA SOURCES*: <i>hospital databases</i> <i>Discharge Abstract Database</i> <i>registry data</i> <i>provincial data repositories</i></p>	<p>DATA SOURCES*: <i>vital statistics</i> <i>coroner's database</i> <i>multiple causes of death</i></p>

* these are potential sources, not necessarily currently available

Source: Canada Disease Surveillance

http://www.phac-aspc.gc.ca/csc-ccs/pdf/hscchronic_disease_surveillance_background_paper_e.pdf (page 13)

Essential Functions of Chronic Disease Epidemiology in State Health Departments

- **White paper by the Council of State and Territorial Epidemiologists – Chronic Disease Epidemiology Capacity Building Workgroup (September 2004)**
(Find it at: <http://www.cste.org>)
- **Role of chronic disease epidemiologists to support the “Ten Essential Public Health Services,” prioritized:**
 - Tier 1 – Essential functions
 - Tier 2 – Supportive or coordinating role
 - Tier 3 – Limited role

Epidemiologist Functions & Public Health Essential Services

Tier 1 – Essential Functions

1. Surveillance
2. Communication
3. Consultation

Tier 2 – Supportive &/or Coordinating Role

4. Evaluation
5. Education
6. Investigation
7. Mobilization

Tier 3 – Limited Role

8. Innovation
9. Regulation
10. Utilization

Tier 1 - Surveillance

Monitor health status to identify and solve community health problems

- Use surveillance to:
 - Assess, identify and evaluate
 - Analyze and implement quality control
- Coordinate information and resources across multiple systems to ensure comprehensive disease surveillance

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Tier 1 - Communication

Inform, educate and empower people about health issues

- Disseminate information
- Identify high risk populations, create appropriate messages
- Ensure target audiences understand messages

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Tier 1 - Consultation

Develop policies and plans that support individual and community health efforts

- Provide surveillance and evaluation data and scientific information for:
 - Program planning
 - Evaluation
 - Policy development
- Provide technical assistance to help interpret and apply data

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Tier 2 - Evaluation

Evaluate effectiveness, accessibility, and quality of personal and population-based health services

- Design, implement, and coordinate scientifically-sound evaluations
- Using evaluation results
 - Increase existing program effectiveness
 - Design new programs to address identified needs

Tier 2 - Education

Assure a competent public health and personal health care workforce

- Training and technical assistance
 - Use of surveillance tools, study design, data analysis methods and tools, data interpretation
- Ensure consistent surveillance and evaluation approaches and methods
- Integrate chronic disease epidemiology expertise into program planning and implementation

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Tier 2 – Investigation

Diagnose and investigate health problems and health hazards in the community

- Investigate unusual chronic disease occurrences
- Identify/quantify health risks associated with environmental exposures, personal and social risk factors

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Tier 2 – Mobilization

Mobilize community partnerships and action to identify and solve health problems

- Use data collected to inform community, policy makers, and others to develop action plans to solve defined health problems

Tier 3 Functions

- **Innovation:** Research for new insights and innovative solutions to health problems
- **Regulation:** Enforce laws and regulations that protect health and ensure safety
- **Utilization:** Link people to needed personal health services; Assure the provision of health care when otherwise unavailable

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Bringing this together

***What epidemiologists can do for your
programmatic activities***

When Planning /Developing a Program...

Epidemiologist:

- Surveillance: Provide surveillance data to identify subpopulations that you can target interventions for

Program Manager:

- The type of program you are thinking of developing: (e.g., educational, environmental change, policy change, etc.)
- The population you are thinking of working with

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

When Planning /Developing a Program...

Epidemiologist:

- **Communication:**
Provide guidance for reaching targeted audiences

Program Manager:

- Age and educational level of the audience
- The program's message (so we can provide the statistics)

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

When Planning /Developing a Program...

Epidemiologist:

- Consultation: Provide scientific basis for developing evaluation activities, help with the development of logic models for interventions

Program Manager:

- The indicators you should be tracking;
- The outcomes/outputs you want out of the program/activity

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

When Planning /Developing a Program...

Epidemiologist:

- Evaluation: Provide guidance for developing an evaluation plan: What kinds of data to collect, how to collect the data, how to analyze and interpret the findings

Program Manager:

- The mission, goals and objectives of your program/activity
- Inventory of software and staff capability to collect and analyze data

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

When Planning /Developing a Program...

Epidemiologist:

- Education; Investigation; Mobilization; Innovation: Present the science behind your program to collaborators and targeted audience

Program Manager:

- Meet and work out an agreement on the specifics the program will address, and the scientific support the epidemiologist will provide

When Monitoring a Program...

Epidemiologist:

- **Consultation:** Provide guidance in setting up surveillance systems to track activities: What kinds of data to collect, how to collect the data, tools for collecting data, how to analyze and interpret the findings

Program Manager:

- Available resources (staff and software) to manage the system

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

When Evaluating a Program...

Epidemiologist

- **Consultation:** Provide guidance for collecting data for your evaluation plan: What kinds of data to collect, how to collect the data, tools for collecting data, how to analyze and interpret the findings

Program Manager:

- Available resources (staff and software) to collect and analyze data

Tier 1: Essential **Tier 2: Supportive** **Tier 3: Limited Role**

Example: “Stroke Warning Signs Media Campaign” Planning and Development Phase

- **Surveillance:** Stroke risk factor and mortality for various populations; hospitalizations for stroke from discharge data; signs/symptoms awareness data; population (census) data on race/geography/education
- **Communication:** Inform you (the project manager), your staff, and your partners on the need based on the data (see “Surveillance”)

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Example: “Stroke Warning Signs Media Campaign”

Planning and Development Phase

- **Education:** Present data to partner organizations to set the stage; present evidence that other media campaigns have worked
- **Consultation:** Asking tough planning questions: How are we going to evaluate the success of the campaign? What’s the best source of data? Should a pre- and a post-intervention awareness survey be conducted?
- Provide guidance on what stroke signs awareness data to obtain; how to keep of track it; analyzing findings; how to most effectively report and disseminate findings

Tier 1: Essential Tier 2: Supportive Tier 3: Limited Role

Example: “Stroke Warning Signs Media Campaign” Planning and Development Phase

- **Evaluation:** Help set up the evaluation plan asking the questions:
 - What are the measures of success?
 - What data will we need to provide?
 - How should we obtain these data?
 - What will be the plan for analyzing data that we obtain?

Example: “Stroke Warning Signs Media Campaign”

Monitoring Phase

- **Consultation:** Setting up a surveillance/evaluation database to keep track of how the campaign is going and what the results are showing (process as well as outcomes)

Example: “Stroke Warning Signs Media Campaign” Evaluation Phase

- **Consultation:** Provide guidance on how to analyze and interpret the stroke signs awareness data that have been obtained; and how to effectively report and disseminate findings to partners and targeted audiences

Now It's Your Turn...

Let's Walk Through the Steps

When I'm Planning/Developing A Program...

- This is what I need to think about:

- This is what I would like the Epidemiologist to do for us:

When I'm Monitoring A Program...

- This is what I need to think about:
- This is what I would like the Epidemiologist to do for us:

When I am Evaluating A Program...

- This is what I need to think about:
- This is what I would like the Epidemiologist to do for us:

Questions?

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