

Working with Epidemiologists in Heart Disease and Stroke Prevention Program Planning Appendix of Resources and References

This document is a compilation of additional information, definitions, (hyper)links to resources, and other miscellaneous items that we decided to edit from the workshop presentation, “Working with Epidemiologists in Heart Disease and Stroke Prevention Program Planning.” Most of the information was copied/pasted from previously created slide presentations. It is *not* meant to be an exhaustive resource. As you will see, it is a veritable potpourri of information.

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Chronic Disease

Definitions of Chronic Disease

- A chronic disease is one lasting 3 months or more (National Center for Health Statistics)
- Includes: Heart disease, cancer, stroke and diabetes
<http://apps.nccd.cdc.gov/BurdenBook/DeathCause.asp?BookID=2&state=ct>
- Includes: Heart disease, cancer, stroke, COPD, Diabetes
<http://www.cste.org/pdffiles/New%20Features/CSTechronicReportFINAL.pdf>

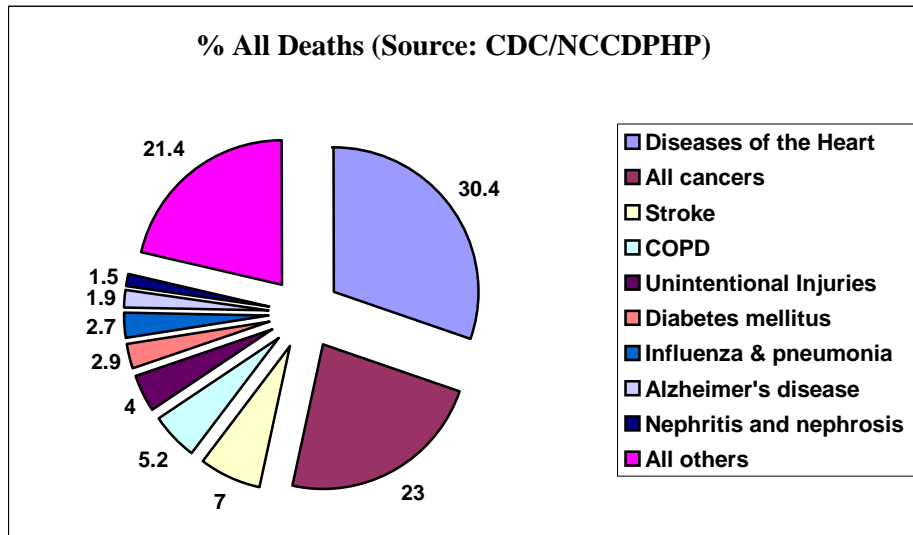
What is Chronic Disease?

- A disease that can be controlled, but not cured.
www.cchs.net/health/health-info/docs/2100/2186.asp
- A disease or illness that is associated with lifestyle or environment factors as opposed to infectious diseases
www.netfit.co.uk/glossc.htm
- A chronic disease is an illness or sickness that is not curable. Usually, the sickness can be controlled for a long time with treatment. When the sickness is poorly controlled, complications occur.
www.mainequalityforum.gov/mqsp03c.html

Chronic Disease Epidemiology

- National Assessment of Epidemiologic Capacity in Chronic Disease: Findings & Recommendations (9/2004)
- National survey conducted 2003
- Conclusions:
 - Need better definitions for chronic disease epidemiologists in state health departments

Chronic Disease Mortality



Source of Data: <http://www.cdc.gov/nccdphp/overview.htm>

How Trends Can Change Cardiovascular Epidemiology

- As with infectious diseases, treatment may be possible before heart disease develops
- The merging of infectious and chronic epidemiology approaches to controlling cardiovascular disease
- Developing cardiovascular surveillance systems to track biomarkers (i.e., NYC's diabetes surveillance of HbA1c)

Did you know that during the past two years....

- ESH/ESC hypertension guidelines may replace JNC 7 (5/14/03)?
- CMS has expanded coverage for ICDs (implantable cardiac defibrillators)?
- For high risk patients, the acceptable level for low density lipoproteins has dropped from 100 to 70 mg/dL?

What do these changes mean?

- Medical guidelines are changing so fast that most people don't know what they should be doing to stay healthy
- Downward trend in acceptable biomarker levels means more people will be diagnosed with "some" medical problem
- Most printed health educational materials are probably outdated

A Chronic Disease Epidemiologist Job Description

- The ideal candidate will have a strong background in chronic disease epidemiology, experience in a public health setting, supervisory/leadership experience and excellent, verbal, written and interpersonal skills.
- The epidemiologist will work under the general direction of the CCHD community health services director, and in close collaboration with the Office of Epidemiology and Office of Chronic Disease Prevention and Health Promotion.
- As the health district lead for chronic disease epidemiology, the candidate will use population-based data, and health data to plan and evaluate health promotion and disease prevention efforts, set priorities, and develop sound public policy, while helping strengthen chronic disease epidemiology capacity in the long term.
- Interested persons should review the following materials:
 - 1) STEPSBKG.doc
 - 2) Essential Functions of Chronic Disease Epidemiology In State Health Departments: <http://www.cste.org/pdffiles/New%20Features/Essential%20Functions%20White%20Paper%20Edited%20Final%20092204.pdf>

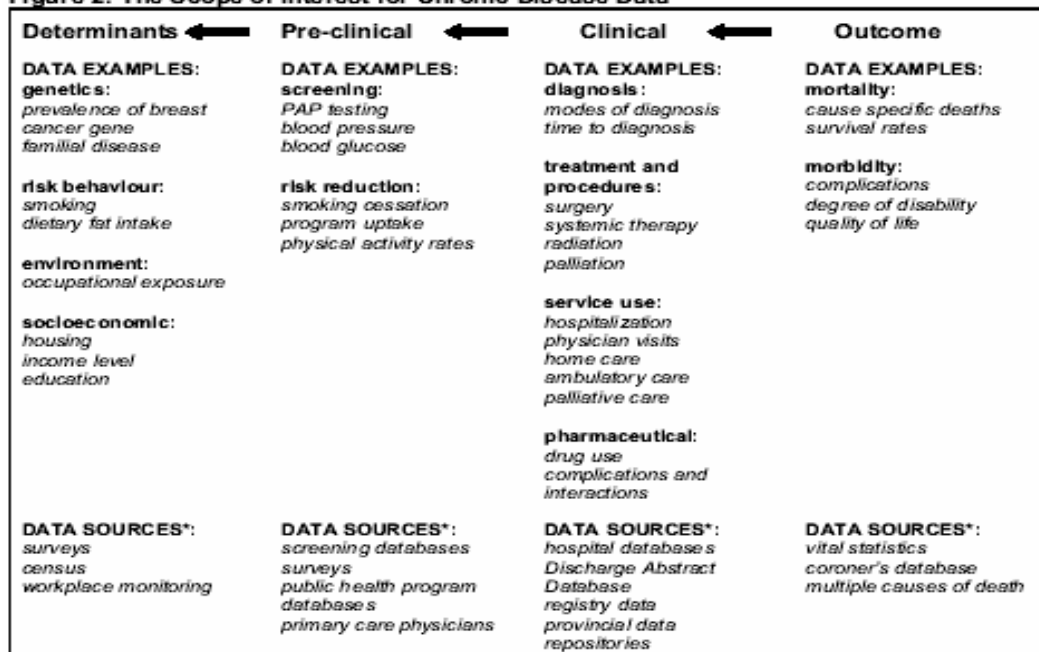
<http://www.aaphp.org/Jobs/2005/march/030605nvcdepi.htm>

Using Data in a Logic Model

From: Canada Disease Surveillance

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

Figure 2: The Scope of Interest for Chronic Disease Data¹⁵



* these are potential sources, not necessarily currently available

Resources and References

Emerging Trends

- **Endothelial Dysfunction (e.g. ED) as the Root of All Vascular Disease**
http://www.escardio.org/knowledge/cardiology_practice/ejournal_vol1/Vol1_no16.htm
<http://www.clinicalcardiology.org/supplements/CC20S2/9711.ccsuppl2.full.pdf>
- **Infection (e.g., viral) as a risk factor for cardiovascular disease**
http://www.phppo.cdc.gov/nltm/pdf/2002/NLTN_CID_3pp.pdf
<http://www.servier.com/pro/cardiologie/pdfs/kas149ang.asp>
- **Inflammation (e.g., stress) is the process to manage**
<http://www.americanheart.org/presenter.jhtml?identifier=4648>
- **Increasing use of biomarkers to diagnose and monitor cardiovascular disease**
<http://www.americanheart.org/downloadable/heart/1043429236960hc0303000499.pdf>

“Did you know?”

- **Giuseppe Mancia, MD, PhD Discusses the 2003 ESH/ESC Hypertension Guidelines (6/2003)**
http://www.medscape.com/viewprogram/2520_pnt
- **Is The Glass Half Empty? CMS Expands ICD Coverage, But Decision Falls Short of MADIT II Criteria (6/10/2003)**
<http://www.medscape.com/viewarticle/456960>
- **Update on Cholesterol Guidelines: More-Intensive Treatment Options for Higher Risk Patients (7/12/2004)**
<http://www.nih.gov/news/pr/jul2004/nhlbi-12.htm>

Chronic Disease

- **Chronic Disease Overview**
<http://www.cdc.gov/nccdphp/overview.htm>
- **National Assessment of Epidemiologic Capacity in Chronic Disease: Findings and Recommendations**
<http://www.cste.org/pdffiles/New%20Features/CSTEChronicReportFINAL.pdf>
- **Essential Functions of Chronic Disease Epidemiology**
<http://www.cste.org/pdffiles/New%20Features/Essential%20Functions%20White%20Paper%20Edited%20Final%20092204.pdf>

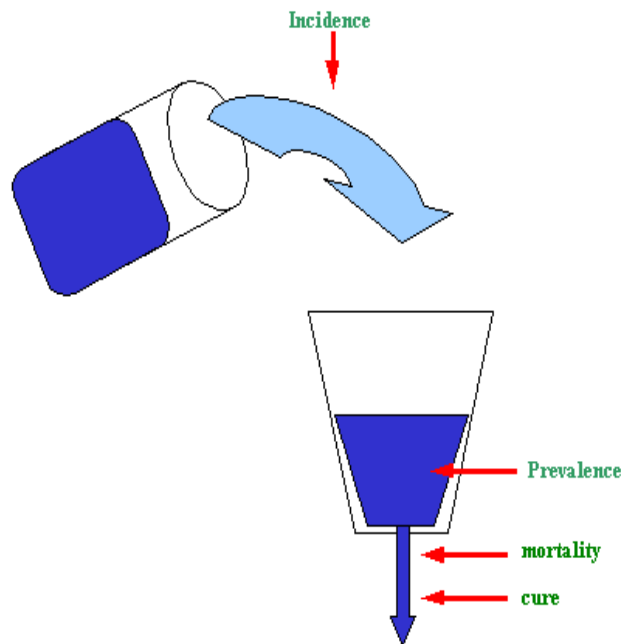
Epidemiologic Methods

- **Appendix. Operations Checklist**
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5305a2.htm>
- **Chronic Disease Surveillance in Canada**
http://www.phac-aspc.gc.ca/csc-ccs/pdf/hscchronic_disease_surveillance_background_paper_e.pdf
- **The Art and Science of Evidence-Based Decision-Making... Epidemiology Can Help!**
http://www.phac-aspc.gc.ca/csc-ccs/pdf/epidemiology_e.pdf

Selected Key Epidemiology Concepts

Incidence vs. Prevalence

- The **incidence** of disease is defined as the number of new cases of disease occurring in a population during a defined time interval. The number is a measure of the risk of disease.
- The **prevalence** is the number of individuals with a certain disease in a population at a specified time divided by the number of individuals in the population at that time. This measure does not convey information about risk.



(Sources: <http://www.answers.com/topic/epidemiology>;
http://www.umanitoba.ca/centres/mchp/concept/dict/Prev_incid/incid_prev_water.html)

Age-adjusted and crude rates are different ways to measure death **rates**. The **crude rate** is defined as the total number of events divided by the total population at risk, then multiplied by 100,000.

(Source: http://www.michigan.gov/documents/AppB_10201_7.pdf)

Age-adjusted death rates represent the mortality experience that would have occurred in a standard population had the age-specific **rates** of the area or population subgroup been experienced by the standard population. Both **crude** and **age-adjusted rates** are presented as per 100,000, except for infant mortality

Things that Can Affect Results

- Chance
- Bias
- Confounding

Chance:

- Measurements can be affected by random variation.
- Avoid errors from random variation with adequate sample size.

Bias: Error in measurement of variable; systematic variation

- Selection bias** (random selection, random allocation)
- Measurement bias** (blinding)
- Analysis bias** (follow up and intent to treat analysis)

Confounding: Error in interpretation of an accurate measurement.

- Confounder:** factor linked to outcome and unevenly distributed between study groups
- Known** (stratify results)
- Unknown:** (randomization)

(Source: http://www.faem.org.uk/site/research/technical_guide/techpages/biasconfound.htm)