Harnessing the Power of Public Datasets in Professional Nursing

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Learning Objectives

1. Identify 2 sources of publically available datasets useful in professional nursing practice.

2. Describe the 4 steps of data and information management to support evidence-based nursing practice.
Why Data?

Data

Application

Information

Knowledge
DIKA Model
Data-Information-Knowledge-Application

Center for Disease Control and Prevention

HIV and Latinos
Increasing Awareness of HIV Among Latinos

Health & Safety Topics

- **Diseases & Conditions**
  - ADHD, Birth Defects, Cancer, Diabetes, Fetal Alcohol Syndrome, Flu, Hepatitis, HIV/AIDS, STDs...

- **Emergency Preparedness & Response**
  - Bioterrorism, Chemical & Radiation Emergencies, Severe Weather...

- **Healthy Living**
  - Food Safety, Bone Health, Physical Activity, Immunizations, Genetics, Smoking Prevention...

- **Injury, Violence & Safety**
  - Brain Injury, Child Abuse, Falls, Fires, Poisoning, Suicide, Youth Violence...

Drinking and Driving: A Threat to Everyone

CDC Works For You 24/7
CDC invests its annual budget in projects that positively impact the health of people everywhere.

- School Asthma Policies Can Save Lives
http://www.cdc.gov/DataStatistics/
OPEN DATA = DATA SHARING
OPEN GOVERNMENT
Community Health Data Initiative (CHDI) 
Launched December 2010

– Make high-value data available to the public
– Encourage innovative uses of it to advance the public good
– Major new public-private effort
– To help Americans understand health & health care performance in their communities
– To help spark & facilitate action to improve performance
Government as Platform

- Trigger enormous public good
- Supply high quality, free government data to the public
- Actively market the availability of this data
Publically Available Data

➔ Useful insights, applications, products, and services

➔ By a growing “ecosystem” of private and public sector innovators

➔ Working with engaged consumers, providers, civic leaders, employers, researchers, and others
Ecosystem of Community Health Data

Data Suppliers ➔ Data Appliers
Ecosystem of Community Health Data

Data Suppliers

Data Divide

Data Appliers
CHDI - Part 1

• Provide to the public, free of charge and without any intellectual property constraint

• Easily accessible, standardized, downloadable data
CHDI Data includes

– Health care, health, and determinants of health performance at the national, state, and county levels

– Hundreds (ultimately, thousands) of measures of health care quality, cost, access and public health (e.g., obesity rates, smoking rates, etc.),

– CMS data

– HHS data

– HP2020 data

– More to be added
CHDI Step 2

- Sponsor new applications for use of data
  - Interactive health maps
  - Social networking apps
  - Viral online games for health education
  - New development of products
Design Framework for HHS’s Community Health Data Initiative

DATA
- HHS - via supply of a comprehensive HHS Community Health Data Set (national, state, regional, and county-level measures of health performance and determinants of health), delivered free of charge.
- State and local governments
- Private sector data suppliers
- Others?

Feedback on data (types of data required, frequency of release, etc.)

http://www.data.gov
Welcome to the Health Data Community
You’ve found a public resource designed to bring together high-value datasets, tools, and applications using data about health and health care to support your need for better knowledge and to help you to solve problems. These datasets and tools have been gathered from agencies across the Federal government with the goal of improving health for all Americans. Check back frequently because the site will be updated as more datasets and tools become available.

More Information
http://www.data.gov/

**HEALTH DATA AND TOOLS AVAILABLE ON DATA.GOV**

Take a look at the different data sets and tools to access those that are publicly available. This page will be frequently updated and enhanced with the suggestions from the forums to ensure that it remains easy to use and appropriate for the public. If you've created an application utilizing the data, head on over to the Apps Expo and share it with others, or get some feedback on your idea through the forums.

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State Cancer Profiles Web site

- **Coverage and Access**
- **Employment-based Health Benefits**
- **Financial and Cost**
- **Health Care Resources**
- **Health Care Utilization, Cost, and Quality**
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http://www.data.gov/

THE HEALTH APPS EXPO

Greetings! You have arrived at the gateway to the online Health Apps Expo. The Apps Expo is an online exposition showing a growing range of applications that have been developed using health data. Here, you’ll find examples of what innovators have been doing to harness the power of data to help improve health and create value. We hope you’ll be similarly inspired to create applications of your own.

These apps have been created by non-Federal sources and are curated by a non-governmental entity, Health 2.0. The Apps Expo is not moderated by the Federal government, and inclusion in the Expo does not represent any form of an endorsement of that app or of Health 2.0 by the U.S. Department of Health and Human Services. To access the Apps Expo from HealthData.gov, you will be leaving the Federal web site and taken to a website operated by Health 2.0 that is not in the domain of the Federal government.
http://www.health2apps.com/
http://www.data.gov/communities/node/81/other_dasites

**OTHER DATA SITES**

The Federal government isn't the only resource where you can find useful health data. This section of the site contains link to data and datasets provided by non-Federal government sources. If you find the other sites useful, or have suggestions for us, let us know through the forums. Please note that you will be leaving a Federal government website to access these resources.

**California Health Interview Study**

CHIS is the nation's largest state health survey. A random-dial telephone survey conducted every two years on a wide range of health topics, CHIS data gives a detailed picture of the health and health care needs of California's large and diverse population. More than 50,000 Californians - including adults, teenagers and children - are surveyed by CHIS. Participants in the CHIS survey are chosen at random and the sample is extensive enough to be statistically representative of California's diverse population. CHIS is especially known for its hard-to-find data on ethnic subgroups.

**County Health Rankings**

An interactive website providing access to 50 state reports with rankings of each county within each state according to its health status.
More Public Datasets

- http://www.who.int/whosis/en/
- http://wonder.cdc.gov/
- http://www.ihi.org/ihi
What's New...

...is the staggering increase in opportunities for finding patterns in data.
4 basic steps in Evidence Based Practice

(Sackett, et al)

Step 1 - Convert your information need into an answerable question

Step 2 - Find the best evidence

Step 3 - Appraise search results for validity and usefulness

Step 4 - Apply the findings to your clinical practice and evaluate your professional performance

Any database

• Choose database
• Browse for information – “query”
  – Filter by zipcodes or census tract
• Export the results
  – Reformatted file download
• Analyze the data
  – Graph
  – Statistical analysis
• Apply knowledge to patient care
• Evaluate outcomes
Example: PHN & Summer Drownings

- The Public Health Department wants to offer a publicity campaign to reduce drownings
- Limited funds
- How are you going to do this?
- Who are you going to target? When?
WISQARS Injury Mortality Reports, 1999 - 2007

Choose your Report Options, then click the Submit Request button.

For more information about an option or a category of options, click on the underlined name or phrase. To return to the home page, click the CDC Home button.

Report Options

1. What was the intent or manner of the injury? (Select one)
   - All Intents
   - Unintentional
   - Violence-related
     - Homicide and Legal intervention
       - Homicide
       - Legal Intervention
   - Suicide
   - Undetermined intent

2. What was the cause or mechanism of the injury? (Select one)
2. **What was the cause or mechanism of the injury?** (Select one)

- All injury
- All injury and adverse effects

**Adverse Effects**
- Adverse effects, overall
  - Medical care, adverse effects
  - Drugs, adverse effects
- Cut / Pierce
- Drowning
- Fall

**Fire / Heat**
- Fire / Burn
  - Fire / Flame
  - Hot object / Substance
- Residential fire / Flame
- Firearm
- Non-Firearm

**Transportation-Related**
- Transportation-Related, overall
- Motor vehicle, overall
  - Motorcyclist
  - Occupant
  - Pedal cyclist
  - Pedestrian
  - Other
  - Unspecified
- Pedal cyclist (includes mv traffic and other)
  - Pedal cyclist, other
- Pedestrian (includes mv traffic and other)
  - Pedestrian, other
- Suffocation
- Terrorism

3. Select specific options.

Census Region/State
California

Race
All Races

Sex
Both Sexes

Submit Request or Reset

Advanced Options (not required)

Select age groups.

- All Ages (includes unknown age)
- Age Groups 0-4 to 15-19
- Custom Age Range <1 to <1

Compare injury rates using age-adjusting.
Select Standardized Year for Age-Adjusting:
- Use 2000 as the Standard Year.
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Review & analyze data

• Highest rates of drowning in alternate years
  – Toddlers (male & female)
  – Teen Boys

• Target campaign
  – Toward parents of toddlers
  – Teen boys
  – Every other year
Caution: Data Gone Bad

– Data entry errors
  • Healthcare enrollment with typo of birthdate

– Insufficient data
  • Limited data range might not capture full cycles

– Unreproducible results
  • Need validity & reliability tests

– Acting on inaccurate or incomplete data
  • Treatments, policy
I don't have a particular recommendation other than that we base decisions on as much hard data as possible. We need to carefully look at all the options and all their ramifications in making our decisions.

~ DOROTHY DENNING
LET MY DATASET CHANGE YOUR MINDSET

~HANS ROSLING
THANK YOU!

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