

Sample Solutions to Case Study Exercise – Evidence Based Public Health

Case: Community Care for the Aging

Care of the aging population in the community is currently provided by a variety of government, for-profit, not-for-profit and religious organizations, as well as individuals. A recent think-tank report shows that many elders are falling through the cracks and recommends that local elder care organizations form a coalition to address these elders who are not receiving services. Before investing the time and energy to build such a coalition, the think-tank is asked by the government to provide some examples of similar collaborative programs for aging services that are effective.

P (Population or Patient or Problem): aging population – care and service providers

I (Intervention): coalition-building / collaborative programs

C (Comparison, if one):

O (Outcome(s)): reduce falling through the cracks;

Background questions:

Are there certain types of elders who generally fall through the cracks?

Foreground question (searchable):

Will forming a coalition of organizations providing care for seniors result in more consistent access to services for seniors currently not receiving adequate services? What are characteristics of programs that have done this effectively?

Database(s) or resources that you would search:

AGELINE, PubMed, Sociological and Social Work Abstracts

Terms that you would use in the searching:

Coalitions or Interagency Cooperation; Service Delivery; Aging Network

Look at your relevant results.

Promoting older adult health: aging network partnerships to address medication, alcohol, and mental health problems. Substance Abuse and Mental Health Services

Administration. US. Department of Health and Human Services, Rockville, MD (2002)

Coalition-building in long term care: a guidebook for the aging network

Susik, D. Helen; Pfeiffer, Eric; National Eldercare Institute on Long Term Care and Alzheimer's Disease; University of South Florida. Suncoast Gerontology Center; United States. Administration on Aging. University of South Florida, National Eldercare Institute on Long Term Care and Alzheimer's Disease at the Suncoast Gerontology Center, Tampa, FL (1993)

Case: Correctional Health

You are the recently-hired health administrator at a large urban jail on the West Coast. Inmate suicide is a huge problem at your new institution. You've been called into to collaborate with the counseling and guard representatives on a plan to prevent inmate suicides while reducing the costs associated with suicide watches.

P (Population or Patient or Problem): large urban jail inmate suicides

I (Intervention): suicide prevention plan (specifics unknown)

C (Comparison, if one)

O (Outcome(s)): reduced number of suicides; reduce costs associated with suicide watches

Background questions:

Why are suicide watches so expensive?

Foreground question (searchable):

What suicide prevention activities can reduce the number of suicides in a large urban jail while reducing the costs associated with suicide watches?

Database(s) or resources that you would search:

National Criminal Justice Reference Service, PubMed, PsycInfo

Terms that you would use in the searching:

Inmate suicide, suicide prevention, costs

Look at your relevant results.

Suicide and the Jail Environment: An Evaluation of Three Types of Institutions

Author: Christine Tartaro. Journal: Environment & Behavior Volume:35 Issue:5

Dated: September 2003 Pages:605 to 620

Supervising Solitude: Keeping an Eye on Inmate Suicide

Journal: Prison Review International Issue:1 Dated: July 2001 Pages:128 to 130

Author: Sarah Albery ; Jack Gin

Case: Public Health Dentistry

Your patron is practicing dentist in the community. She receives government subsidies to supply dental care to low-income clients. The city's public hospital is perplexed by an increase in the number of cases of fluoride poisoning annually. Your patron has been appointed to a task force to address whether the amount of fluoride in the water supply needs to be adjusted. Before the first meeting, she would like to read about other cases of fluoride poisoning resulting from excess fluoride in the water supply and any attempts to defluoridate the water, preferably in the United States.

P (Population or Patient or Problem): increase in fluoride poisoning cases

I (Intervention): adjust the amount of fluoride in the water supply

C (Comparison, if one):

O (Outcome(s)): fewer cases of fluoride poisoning without great increase in number of cavities due to lack of fluoride

Background questions:

Did all the fluoride poisoning cases result only from community water access?

Foreground question (searchable):

What are the risks and benefits to defluoridating a community water supply to reduce the number of fluoride poisoning cases?

Database(s) or resources that you would search:

PubMed, Water Resources Abstracts, NTIS

Terms that you would use in the searching:

Fluoride Poisoning or Fluoridation/adverse effects, Water Supply
Fluorides/administration & dosage

Look at your relevant results.

1: Penman AD, Brackin BT, Embrey R. Outbreak of acute fluoride poisoning caused by a fluoride overfeed, Mississippi, 1993. Public Health Rep. 1997 Sep-Oct;112(5):403-9.

2: Angelillo IF, Torre I, Nobile CG, Villari P. Caries and fluorosis prevalence in communities with different concentrations of fluoride in the water. Caries Res. 1999;33(2):114-22.

3: Horowitz HS, Heifetz SB. The effect of partial defluoridation of a water supply on dental fluorosis--final results in Bartlett, Texas, after 17 years. Am J Public Health. 1972 Jun;62(6):767-9.

Case: Emergency Preparedness

You are a regional EMS commander attending a state-level emergency preparedness meeting. Your workgroup has been charged to develop a training program for emergency preparedness, particularly pre-hospital decontamination protocols, that utilizes the information garnered from the effective and not-effective programs already out there.

P (Population or Patient or Problem) emergency preparedness prehospital decontamination providers

I (Intervention): training program and protocols

C (Comparison, if one)

O (Outcome(s)) effective use of knowledge from previous program development

Background questions:

What pre-hospital decontamination protocols are available?

Foreground question (searchable):

What are effective characteristics of training programs for emergency preparedness and pre-hospital decontamination protocols for emergency providers?

Database(s) or resources that you would search:

PubMed, police and fire databases, relevant EP agencies, NYAM/NLM Resource Guide for Public Health Preparedness (<http://www.phpreparedness.info/>)

Terms that you would use in the searching:

Disaster Planning; Decontamination, Staff Development, Education (subheading), Inservice Training, (keywords for training and education)

Look at your relevant results.

Schleipman AR, Gerbaudo VH, Castronovo FP Jr. Radiation disaster response: preparation and simulation experience at an academic medical center. J Nucl Med Technol. 2004 Mar;32(1):22-7.

Veenema TG. Chemical and biological terrorism preparedness for staff development specialists. J Nurses Staff Dev. 2003 Sep-Oct;19(5):218-25; quiz 226-7.

3: Hick JL, Penn P, Hanfling D, Lappe MA, O'laughlin D, Burstein JL. Establishing and training health care facility decontamination teams. Ann Emerg Med. 2003 Sep;42(3):381-90.

Case: Epidemiology - Counting the Homeless

The State Assembly is trying to address the issue of how many homeless are in the communities. One particular concern is accurately counting the number of homeless who die each year. You are the director of the state Vital Statistics program who is being asked to report this data on homelessness and you want to find best practice examples of the most accurate method(s) of obtaining this data.

P (Population or Patient or Problem): homeless who die

I (Intervention): data collection strategies

C (Comparison, if one)

O (Outcome(s)): more accurate enumeration of homeless deaths

Background questions:

What strategies are used now to come up with this number?

Foreground question (searchable):

What are the most effective strategies to identify people who are homeless at time of death?

Database(s) or resources that you would search:

PubMed, FORS (forensics database), social science and demographic databases

Terms that you would use in the searching:

Homeless Persons/statistics & numerical data, Mortality

Look at your relevant results.

1: Ohsaka T, Sakai Y, Kuroda K, Matoba R.

[A survey of deaths of homeless people in Osaka City]

Nippon Koshu Eisei Zasshi. 2003 Aug;50(8):686-96. Japanese.

2: [No authors listed]

Enumerating deaths among homeless persons: comparison of medical examiner data and shelter-based reports--Fulton County, Georgia, 1991.

MMWR Morb Mortal Wkly Rep. 1993 Sep 24;42(37):719, 725-6.

3: Hanzlick R, Parrish RG.

Deaths among the homeless in Fulton County, GA, 1988-90.

Public Health Rep. 1993 Jul-Aug;108(4):488-91.

Case: Public Health Laboratories

You are a microbiologist at a large public health reference laboratory. Now that your institution has prepared a level three biohazard laboratory, you've been asked to consider the sensitivity and specificity of rapid tests to detect anthrax.

P (Population or Patient or Problem): rapid tests to detect anthrax

I (Intervention): sensitivity and specificity

C (Comparison, if one)

O (Outcome(s)): accurate diagnoses of anthrax

Background questions:

What rapid tests are available?

Foreground question (searchable):

What are the sensitivity and specificity of rapid tests to detect anthrax?

Database(s) or resources that you would search:

PubMed, BIOSIS, NYAM/NLM Resource Guide for Public Health Preparedness
(<http://www.phpreparedness.info/>)

Terms that you would use in the searching:

Anthrax or *Bacillus anthracis*, Sensitivity and Specificity, search rapid concept as
textword

Look at your relevant results.

Rantakokko-Jalava K, Viljanen MK. Application of *Bacillus anthracis* PCR to simulated clinical samples. *Clin Microbiol Infect*. 2003 Oct;9(10):1051-6.

2: Ryu C, Lee K, Yoo C, Seong WK, Oh HB. Sensitive and rapid quantitative detection of anthrax spores isolated from soil samples by real-time PCR. *Microbiol Immunol*. 2003;47(10):693-9.

4: De BK, Bragg SL, et al. A two-component direct fluorescent-antibody assay for rapid identification of *Bacillus anthracis*. *Emerg Infect Dis*. 2002 Oct;8(10):1060-5.

5: Ellerbrok H, Nattermann H, Ozel M, Beutin L, Appel B, Pauli G. Rapid and sensitive identification of pathogenic and apathogenic *Bacillus anthracis* by real-time PCR. *FEMS Microbiol Lett*. 2002 Aug 27;214(1):51-9.

Case: Public Health Law

Many city and states public health laws include a provision for detention of people with infectious disease, such as tuberculosis, if necessary to ensure treatment or halt further spread of a condition. Much of the literature around this issue is on the ethics of detention. You are hoping to find evidence that detention is an effective public health practice or case law supporting detention that you can use to justify your agency's use of this strategy.

P (Population or Patient or Problem): spread of infectious disease by people dangerous to others or not treatment-compliant

I (Intervention): detention

C (Comparison, if one)

O (Outcome(s)) balance between individual rights and safety of population

Background questions:

What is the current legal standing of detention in your area?

Foreground question (searchable):

In what cases has detention been found an effective and legally supportable way to prevent disease transmission?

Database(s) or resources that you would search:

PubMed, LexisNexis or Westlaw or HEIN online, Bioethics resources (LocatorPlus)

Terms that you would use in the searching:

Quarantine/legislation & jurisprudence

Communicable Disease Control/legislation & jurisprudence or Communicable Diseases

Transmission (subheading)

Look at your relevant results.

Lacey C. Abuse of quarantine authority. The case for a federal approach to infectious disease containment. *J Leg Med.* 2003 Jun;24(2):199-214.

Lerner BH. Catching patients: tuberculosis and detention in the 1990s. *Chest.* 1999 Jan;115(1):236-41.

Mindes P. Tuberculosis quarantine: a review of legal issues in Ohio and other states. *J Law Health.* 1995-1996;10(2):403-28.

Case: Maternal, Infant and Reproductive Health

You are the head of the Maternal, Infant and Reproductive Health program in a city with a high rate of adolescent pregnancy. Many of these teenagers do not receive prenatal care until late in the pregnancy. You are working with community-based organizations that serve teens to come up with some strategies to increase the uptake of prenatal care. Your group wants to look into the role of the male partner and whether the male partner's involvement affects prenatal care.

P (Population or Patient or Problem): pregnant teenagers with late prenatal care

I (Intervention): male involvement

C (Comparison, if one): no male involvement

O (Outcome(s)): increased uptake of prenatal care

Background questions:

What are the issues that drive male involvement with their pregnant teenage partners?

Foreground question (searchable):

Does increased involvement of the male partner result in increased or earlier usage of prenatal care in teenage pregnancies?

Database(s) or resources that you would search:

POPLINE, PsycInfo, ERIC, PubMed

Terms that you would use in the searching:

Adolescent pregnancy, male, prenatal care

Look at your relevant results.

Title: Adolescent fathers: the under studied side of adolescent pregnancy.

Author: Elster AB; Lamb ME

Source: : 177-90. New York, New York, Aldine de Gruyter, 1986. In: School-age pregnancy and parenthood: biosocial dimensions, edited by Jane B. Lancaster and Beatrix A. Hamburg.

Title: Attitudes of adolescent males toward adolescent pregnancy and fatherhood.

Author: Redmond MA

Source: Family Relations. 1985 Jul; 34(3): 337-42.

Case: Restaurant Inspections and Foodborne Illness

The question of whether restaurant inspections actually curtail foodborne illness outbreaks has been raised in your local press. The restaurant inspection program is one of the largest and most visible components of your county health department. You want to find out what inspection strategies are most predictive of outbreaks and how you might ensure that your program reflects these practices.

P (Population or Patient or Problem): foodborne illness outbreaks

I (Intervention): restaurant inspection strategies, risk factors for outbreaks

C (Comparison, if one)

O (Outcome(s)): inspection programs incorporates strategies most predictive of outbreaks

Background questions:

What strategies does your program currently use?

Foreground question (searchable):

Which food safety risk factors are the most predictive of foodborne illness outbreaks and how have these been integrated into inspection programs?

Database(s) or resources that you would search:

AGRICOLA, PubMed, Food Science & Technology Abstracts

Terms that you would use in the searching:

Risk assessment (risk); Foodborne illness, Inspection (Food inspection); food safety; food poisoning prevention

Look at your relevant results.

A risk-based restaurant inspection system in Los Angeles County.

Author: Buchholz, U. et al.

Source Info: Journal of food protection. J. food prot. Feb 2002. v. 65 (2)
p. 367-372.

How indicators can perform for hazard and risk management in risk assessments of food premises. Author: Phillips, B. et al.

Source Info: British food journal. Br. food j. 1994. v. 96 (11)
p. 26-35.

Case: School Obesity Prevention

You are a member of the school board for an inner city middle school. You've heard your daughter and other girls talking about how fat some of the students are getting. The school barely offers gym classes and everywhere you look there are vending machines. You want to make an impact, but you don't know where to start. You want to get some evidence about what works and at what cost in order to prepare for a meeting with the principal and superintendent.

P (Population or Patient or Problem): overweight children at an inner city middle school

I (Intervention): increased gym classes

C (Comparison, if one)

O (Outcome(s)): Reduce overweight in children while not costing the school money

Background questions:

What gym classes are currently offered?

Foreground question (searchable):

Will changes in gym class content and scheduling reduce the amount of overweight children at an inner city middle-school without increasing costs?

Database(s) or resources that you would search:

ERIC, PubMed

Terms that you would use in the searching:

Body weight or overweight or obesity, Physical Education (ERIC descriptors are case sensitive)

Look at your relevant results.

Murray, Barbara A. ; Murray, Kenneth T.

Title: A Nation Out of Shape.

American School Board Journal v186 n8 p29-30 Aug 1999

ED340997. Newman, Ian M. Eating and Exercising: Nebraska Adolescents' Attitudes and Behaviors. Technical Report 25. Pagination: 35. Publication Date: 1991-12-00

Case: Sexual Education Programs

You are the health teacher in a rural Southern high school. You've heard girls talking about what sound like STD symptoms and you want to start teaching safer sex education. Your principal espouses abstinence-only education. You want to compile some evidence about the effectiveness of sex education curricula to bring to a discussion with the superintendent.

P (Population or Patient or Problem) rural Southern high school students

I (Intervention) safer sex education curricula

C (Comparison, if one) abstinence-only sex education curricula

O (Outcome(s)) increase in practice of STD prevention; reduction in STDs

Background questions:

What is the rate of STDs at the school?

Foreground question (searchable):

Will the implementation of a safer sex education curriculum be more effective in increasing STD prevention practices and decrease the number of STDs in a rural Southern high school population?

Database(s) or resources that you would search:

POPLINE, ERIC, PubMed

Terms that you would use in the searching:

Abstinence, education, sex education, sexually transmitted diseases, risk reduction behaviors

Look at your relevant results.

Title: Understanding "abstinence": implications for individuals, programs and policies.

Author: Dailard C

Source: Guttmacher Report on Public Policy. 2003 Dec; : 4-6.

Title: Safer-sex programs increase condom use among Black adolescents.

Author: Schreck L

Source: Family Planning Perspectives. 1999 Jan-Feb; 31(1): 48-9.

Title: Promotion of sexual abstinence: reducing adolescent sexual activity and pregnancies.

Author: Khouzam HR

Source: SOUTHERN MEDICAL JOURNAL. 1995 Jul; 88(7): 709-11.

Case: Substance abuse programs

You are part of the utilization oversight team for a mid-sized city's state-funded substance abuse programs. There has been a lot of press about the use of buprenorphine in heroin addiction treatment. Your team wants to come up with some guidance for the programs about adding buprenorphine to their programs.

P (Population or Patient or Problem): heroin addicts in state-funded substance abuse programs

I (Intervention): buprenorphine

C (Comparison, if one): existing treatment

O (Outcome(s)): better health status and reduced costs

Background questions:

How does buprenorphine work?

Foreground question (searchable):

Will incorporating buprenorphine into heroin addiction treatment at state-funded substance abuse programs result in better health status or reduced costs?

Database(s) or resources that you would search:

PubMed, PsycInfo, PIE

Terms that you would use in the searching: Buprenorphine, Heroin Dependence, Outcome and Process Assessment, Cost-Benefit Analysis

Look at your relevant results.

1: Oldham NS, Wright NM, Adams CE, Sheard L, Tompkins CN. The Leeds Evaluation of Efficacy of Detoxification Study (LEEDS) Project: An open label pragmatic randomised control trial comparing the efficacy of differing therapeutic agents for primary care detoxification from either street heroin or methadone - ISRCTN07752728. BMC Fam Pract. 2004 Apr 29

2: Guichard A, et al.. Illicit drug use and injection practices among drug users on methadone and buprenorphine maintenance treatment in France. Addiction. 2003 Nov;98(11):1585-97.

3: Doran CM, Shanahan M, Mattick RP, Ali R, White J, Bell J. Buprenorphine versus methadone maintenance: a cost-effectiveness analysis. Drug Alcohol Depend. 2003 Sep 10;71(3):295-302.

Case: Workplace Health

You are the recently-hired health educator at a large customer service center in the suburban Midwest providing phone and email support to a worldwide audience. You were hired to develop interventions to improve ergonomics for your mostly middle-aged, white, overweight co-workers and to boost morale through a healthier work environment. You've been asked to justify the continuation of your position by providing data that workplace wellness interventions like the ones you're considering will increase productivity and reduce absenteeism and turnover.

P (Population or Patient or Problem) mostly middle-aged, white, overweight co-workers at suburban customer service center

I (Intervention) ergonomics, health promotion activities

C (Comparison, if one)

O (Outcome(s)) increase productivity and reduce absenteeism and turnover, improved working conditions, increased morale.

Background questions:

What are some possible health promotion interventions?

Foreground question (searchable):

In a population of mostly middle-aged, white, overweight customer service workers, will ergonomic and health promotion activities increase productivity and reduce absenteeism and turnover, improved working conditions, increased morale?

Database(s) or resources that you would search:

Business databases, PubMed, CINAHL, National Institute for Health and Clinical Excellence

Terms that you would use in the searching:

Health promotion, workplace, ergonomics, employees, workforce, wellness, productivity, absenteeism, sickness absence, turnover, morale, workplace health

Look at your relevant results.

Shephard, R.J. Worksite health promotion and the older worker. *International Journal of Industrial Ergonomics* 2000 25 (5): 465-475

Aldana, S.G., Pronk, N.P. Health promotion programs, modifiable health risks and employee absenteeism. *Journal of Occupational and Environmental Medicine*, 2001 43 (1): 36-46