

**Minnesota Heart Disease and Stroke Prevention (HDSP) Initiative  
Literature Review – October 2004  
Environmental Setting: Healthcare**

**Abstract Summaries**

**Are rural people getting HeartSmart?**

**Reference**

Aoun, S., & Rosenberg, M. (2004, April) Are rural people getting HeartSmart? *Australian Journal of Rural Health*. 2(2), 81-88. Abstract retrieved June 13, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

**Environmental Intervention and Policies**

A study was conducted in a rural area with the *HeartSmart* program, a hospital-based cardiac rehabilitation program in Bunbury, a regional centre of Western Australia. Participants of the *HeartSmart* program were targeted.

The intervention method included 7-week education and exercise sessions which surrounded the areas of:

- quality of life,
- dietary behavior,
- weight loss, and
- physical activity participation with patients with cardiovascular disease (CVD) or at high risk of CVD.

**Evaluation**

Methods of evaluation included a single group pre- and posttest design with follow-up at 3-, 6- and 12-months after the program was completed. The evaluation was complimented with a cross-sectional survey of non-participants as a pseudo comparison group.

**Key Findings**

The completion rate was 92% for the *HeartSmart* program. Results suggested:

- participants demonstrated significant improvements in:
  - quality of life,
  - compliance with medication,
  - dietary behavior,
  - weight loss, and
  - physical activity participation;
- greatest changes were observed between pre- and post-program stages; and
- sustained behavior change was observed at 6-months after the completion of the program.

Other evidence of health benefits noted from the *HeartSmart* program included:

- significantly better health-related behavior, and

- confidence to diet and exercise, dietary fat intake, cardiac knowledge, and quality of life scores among *HeartSmart* participants compared with non-participants.

A discovery of the benefit of this program is that secondary prevention programs in rural areas can be found to be effective. This effect is not only on the quality of life but also the positive outcomes in lifestyle modification for program participants as compared with non-participants.

### **Lessons Learned**

Areas of consideration for future programs include:

- post-program stage of patient follow-up by general practitioners,
- geographical disadvantage of those living outside regional centers to access the service,
- enhancement of the primary prevention aspect of the program,
- adaptation of the program to fit the needs of Aboriginal clients, and
- facilitation of evaluations by the use of resources and training of staff in computer skills.

## **Pharmaceutical care services and results in Project ImPACT: Hyperlipidemia.**

### **Reference**

Bluml, B. M., McKenney, J. M., & Cziraky, M. J. (2000, March/April) Pharmaceutical care services and results in Project ImPACT: Hyperlipidemia. *Journal of the American Pharmaceutical Association*. 40(2).

### **Environmental Intervention and Policies**

Objectives of the intervention included:

1. Improve patient persistence and compliance with lipid-lowering therapy.
2. Increase communication between patients, physicians and pharmacists.
3. Improve the cholesterol levels of patients over time.
4. Increase the population of patients who reach and maintain their NCEP lipid goals.

The intervention included:

- 26 pharmacy practice sites (four of which were from Minnesota);
- 397 patients completed the entire 2-year study;

### **Evaluation**

Patients had an initial visit and consultation with pharmacist, and three monthly follow-up visits, and quarterly visits.

### **Key Findings**

Statistically significant improvements were found for the 397 patients using beginning and ending LDL-C measures:

- 12.8% ( $\pm 1.6\%$ ) reduction for total cholesterol, and
- 10.0% ( $\pm 6.5\%$ ) for triglycerides.
- Mean reduction of 22.1% ( $\pm 2.6\%$ ) for LDL.

They also evaluated NCEP II guideline compliance.

This article cited that there is evidence that suggests that pharmacists providing disease management services can increase patient compliance and improve treatment outcomes. Cited references include:

Effect of pharmaceutical care on optimal colestipol treatment in elderly hypercholesterolemic veterans. (1997) *Pharmacotherapy*. 17, 576-583.

The effect of clinical pharmacy services on patients with essential hypertension. (1973) *Circulation*. 48,1104-1111.

### **Additional Comments**

- Two critical components of the program were:
  - scheduling of appointments by pharmacist staff, and
  - having adequate staff to provide the specialized services.
- It was noted that two pharmacies contracted with HMOs to deliver these services to the health plan beneficiaries.
- This was not a long-term evaluation study.

## **Promoting prevention: skill sets and attributes of health care providers who deliver behavioral interventions.**

### **Reference**

Burke, L. E., & Fair, J. (2003, September-October) Promoting prevention: skill sets and attributes of health care providers who deliver behavioral interventions. *The Journal of Cardiovascular Nursing*. 18(4):256-66. Abstract retrieved July 9, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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### **Environmental Intervention and Policies**

*“Preventive therapies have been shown to reduce morbidity and mortality from cardiovascular disease. However, health care providers are not addressing prevention and not treating patients according to evidence-based guidelines. Reasons frequently cited for not delivering health promotion/disease prevention oriented care is lack of training or skills to provide counseling, and a lack of confidence in health care provider skills.”*

### **Key Findings**

The skills and attributes considered essential for a health care provider to promote behavioral change and risk reduction were outlined as:

- expertise and knowledge of the health care provider ,
- skills for assessing readiness for behavior change,
- relationship building skills, and
- skill in considering the patient's attitudes and beliefs about the disease or treatment.

Communication principles to guide the patient-provider encounter, key behavioral change strategies, and use of technology were reviewed and resources available to support prevention goals were presented.

## **TLC-Eat: An interactive computer-controlled telephone system to improve individual's diets.**

### **Reference**

Delichatsios, H. K., et al. (2001) Randomized trial of a “talking computer” to improve adults' eating habits. *American Journal of Health Promotion*. 15(4) 215-224.

### **Environmental Intervention and Policies**

The targeted population comprised of 298 sedentary adults with poor quality diets which was represented by: 72% women, 45% white, and 45% black.

The intervention was offered through a Health Maintenance Organization (HMO) in lieu of, physical activity (PA) and nutrition counseling of patients. Weekly communication was accomplished with an automated computer-based voice system. The system:

- monitored dietary habits,
- provided educational feedback,
- advice, and
- behavioral counseling.

### **Evaluation**

Randomized control trial (RCT) participants received the phone intervention and controls received standard (in clinic) physical activity (PA) promotion counseling.

A measurement was conducted through a food frequency questionnaire (FFQ) of fruits/vegetables, meats, whole-fat dairy, whole grains and was assigned a global diet quality scale. Measurements were conducted at baseline, 3-months and 6-months.

### **Key Findings**

Intervention participants:

- increased fruit intake by 1.1 SD;
- improved their mean global diet quality score 9 points (scale of 0-100) more than the control groups;
- increased fiber intake; and
- decreased saturated fat.

While this intervention had the ability to reach large numbers of people it was actually individually focused.

## **Diet and physical activity patterns of Lakota Indians.**

### **Reference**

Diet and physical activity patterns of Lakota Indians. (1999, July) *Journal of the American Dietetic Association*. 99(7).

### **Environmental Intervention and Policies**

The targeted population was American Indians. Participating in the intervention were 219 people.

### **Key Findings**

- Data on consumption of fruits suggested that few people surveyed consumed fruit on a daily basis. Participants reported as having eaten vegetables more regularly.
- Regarding physical activity:
  - 44% of the participants said they exercised often,
  - 48% of the participants said sometimes; and
  - 8% of the participants said never/rarely.

### **Lessons Learned**

- Two of the most common barriers to the inclusion of fruits and vegetables in the diet were:
  - fruits and vegetables were too expensive, and
  - lack of availability.
- Lack of child care and lack of time/busy schedule were the most frequently mentioned reasons why it might be hard to get regular exercise.

### **Additional Comments**

Recommendations included:

- Suggestion of environmental interventions to increase opportunities for physical activity.
- Accommodations for parents with children should be provided.
- Community centers, outdoor walking trails and schools open for community use are suggestions for environmental changes.

## **Effect of physician-delivered nutrition counseling training and office-support program on saturated fat intake, weight and serum lipid measurements in a hyperlipidemia population.**

### **Reference**

Effect of physician-delivered nutrition counseling training and office-support program on saturated fat intake, weight and serum lipid measurements in a hyperlipidemia population. (n.d.) *AKA WATCH*

### **Environmental Intervention and Policies**

The targeted population for the intervention was adults.

The intervention method included three randomized groups. They were assembled for the purpose of:

1. usual care
2. physician received counseling training, and
3. physicians advised patients on nutrition changes, with personalized information.

### **Evaluation**

Office support staff assisted with patient encounters by asking them to complete a Dietary Risk Assessment (DRA) in the waiting room prior to meeting with doctor. The physician was given the patient's DRA and algorithm.

### **Key Findings**

One year after intervention the following results were achieved compared with group 1, patients in group 3 had:

- average reductions of 1.1 percentage points in percentage of energy from saturated fat (a 10.3% decrease) ( $p < .001$ ); and
- a decrease of 0.10 mmol/L (3.8 mg/dL) in LDL ( $p = .10$ ).
- average time for the intervention in group 3 was 8.2 minutes, 5.5 minutes more than the control group.

## **Teaching dietary counseling skills to residents.**

### **Reference**

Evans, A. T., et al., (1996) Teaching dietary counseling skills to residents: patient and physician outcomes. *American Journal of Preventive Medicine*. 12(4), 259-265.

### **Environmental Intervention and Policies**

The targeted population included 130 internal medicine residents and 254 adult outpatients with high blood cholesterol levels. They were mainly middle-aged, unemployed, low-education women with a mean cholesterol level of 263 mg/dl. The setting for the intervention was with clinics during routine visits with outpatients.

This was a quasi-experimental study that included a:

- “treatment as usual” control group,
- “doctor prompt-only” group,
- “doctor education-only” group, and
- “doctor prompt and education” group.

The intervention methods and results described related to the doctor education and prompt group. The goal of this study was to determine if an educational intervention and prompting of residents could improve the dietary counseling of patients with high blood cholesterol and result in positive changes in their diets and cholesterol levels.

The intervention included:

- two 1-hour educational sessions and materials for the residents (cost was \$7 per resident);
- a “contract” placed inside the patient’s chart to serve as a reminder to the physician to do a finger-stick cholesterol test and that doubled as a dietary assessment tool; and
- materials for the patients which included a wallet card for tracking dietary change, a recipe book, a series of pamphlets on cholesterol (cost was \$5 per patient).

### **Evaluation**

This intervention was evaluated using the following:

- assessment of residents’ knowledge, attitudes and counseling behavior pre-intervention and a 10-month post-intervention;
- face-to-face exit interviews with study patients immediately following the initial clinic visit; and
- patients were asked about:
  - the residents’ behavior,
  - their own diet, heart disease and cholesterol,
  - the advice the physician gave them, and
  - their own attitudes and intentions, etc.

The interviews were repeated at 10-months; chart reviews were used to assess rates of physician counseling, and quality of counseling.

### **Key Findings**

This study found that at baseline and follow-up, residents had very high rates (>90%) of understanding of National Cholesterol Guidelines. However, resident attitudes about their self-confidence of providing dietary counseling, and their feelings of personal responsibility to provide counseling increased significantly due to the intervention. Rates of resident counseling increased significantly. Quality of counseling also improved. Patient education and knowledge of their numbers increased significantly. In addition, patient confidence in their ability to successfully change their diets improved, and there was a significant increase in the percentage of patients who reported trying to change their diets. A significant decline in cholesterol was not seen in the patient participants during the 10-month intervention. The authors state, “*This research reaffirms the importance of a prompt or reminder system to stimulate action. Educational programs can change the hearts and minds of people, but changing behavior often requires a reminder system or individualized feedback (p. 264).*”

## **Evaluation of a cardiovascular health program for participants with mental retardation and normal learners.**

### **Reference**

Ewing, G., McDermott, S., Thomas-Koger, M., Whitner, W., & Pierce, K. (2004, February) Evaluation of a cardiovascular health program for participants with mental retardation and normal learners. *Health Education & Behavior*. 31(1), 77-87. Abstract retrieved July 9, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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### **Environmental Intervention and Policies**

A comparison study regarding a cardiovascular disease risk reduction was conducted with a group teaching program for 92 individuals with mental retardation (MR; IQ less than 70) and 97 normal learners.

An 8-week cardiovascular disease risk reduction group teaching program curriculum emphasized:

- exercise,
- nutritional choices, and
- stress reduction.

### **Evaluation**

Measurements before and after the intervention included:

- body mass index (BMI);
- knowledge of healthy eating choices,
- self-report of fruit and vegetable intake, and
- exercise.

### **Key Findings**

The following results were reported from the study:

- *“The mean BMI decreased by .89 for normal learners and not at all for the group with MR.”*
- *“The BMI decreased by at least .75 units (or approximately 5 pounds) for 18.5% of individuals with MR and 44.3% of normal learners.”*

## **Cost-effectiveness of a cardiovascular disease risk reduction program aimed at financially vulnerable women: the Massachusetts WISEWOMAN project.**

### **Reference**

Finkelstein, E. A., Troped, P. J., Will, J. C., & Palombo, R. (2002, July-August) Cost-effectiveness of a cardiovascular disease risk reduction program aimed at financially vulnerable women: the Massachusetts WISEWOMAN project. *Journal of Women's Health & Gender-based Medicine*. 11(6), 519-526. Abstract retrieved June 26, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

### **Environmental Intervention and Policies**

A cardiovascular disease (CVD) risk reduction program which targeted older uninsured and underinsured women was the Massachusetts WISEWOMAN Project. The setting was at five enhanced lifestyle intervention (EI) and six minimum intervention (MI) healthcare sites. The assessment regarded the cost-effectiveness comparison of providing:

- CVD screening and enhanced lifestyle interventions (EI); and
- CVD screening and a minimum intervention (MI).

### **Evaluation**

Methods to evaluate the program included:

- cost calculations based on data collected during the screenings and intervention activities were conducted with 1,586 women in 1996;
- risk factor data, including cholesterol and blood pressure measures used to create a summary effectiveness outcome (10-year probability of developing coronary heart disease, CHD); and
- cost-effectiveness ratio of the EI was compared with the MI (calculated by dividing the incremental cost of the EI by the incremental effectiveness of the EI).

### **Key Findings**

- The incremental cost of the EI was \$191.
- Based on the results of a 1-year study period, the 10-year probability of CHD:
  - decreased from 9.4% to 9.2% in the MI group;
  - decreased from 10.3% to 9.8% in the EI group; and
  - it would cost \$637 to achieve a 1% decrease in the 10-year probability of CHD for women enrolled in the EI.

### **Lessons Learned**

- Because the differences between groups were not statistically significant, the hypothesis cannot be rejected that the EI results in no greater reductions in CHD risk.
- Future research is needed to assess the impact of lifestyle intervention targeting financially disadvantaged women.

## **Inter-Tribal Heart Project.**

### **Reference**

Inter-Tribal Heart Project. (1996) *Results from the Cardiovascular Health Survey.*

### **Environmental Intervention and Policies**

The targeted population included ages of 25-44 and people over 45 years of age. The setting was with the Red Lake Tribal Council, White Earth Tribal Council and Menominee Tribal Council in Minnesota. Almost 1,400 people participated.

### **Evaluation**

Methods of evaluation included:

- A randomized list of people who utilized the Indian Health Services (IHS)/Tribal health care facility at least once during the previous three years was developed.
- Patients completed risk factor assessment and physical exams.

### **Key Findings**

Results regarding physical activity with Inter-Tribal Heart Project (ITHP) participants, indicated:

- 35% of the participants age  $\geq 25$  were regularly physically active;
- more men than women engaged in regular physical activity (40% versus 34%);
- prevalence of physical activity decreases with age;
- prevalence of people who are inactive (no leisure time physical activity) was 28%; and
- this prevalence was higher among women than men and increased with age.

Only 18% of women and 13% of men met the recommendation for the daily consumption of 5 of more fruits and vegetables.

### **Additional Comments**

Conclusions call for a need for broad-based approaches to improve the heart health of residents in these communities. A second phase of the ITHP is reported to be in progress. Various health promotion strategies are being employed including: education, organization, policy and legislative changes.

## **The Eating Patterns Study: Scripted dietary counseling by physicians in primary care clinics.**

### **Reference**

Lazovich, D., et al. (2000). Implementing a dietary intervention in primary care practice: A process evaluation. *American Journal of Health Promotion*. 15(2), 118-125.

### **Environmental Intervention and Policies**

The targeted population for the intervention was with 28 physician practices and their patients with advance appointments for non-acute, non-chronic problems. The setting was in 28 physician practices in six primary care clinics which were members of the Group Health Cooperative of Puget Sound.

At the start of the study physicians received a script, the study rationale, and procedures. A brief training, 30-minute, was completed in the most convenient manner for each physician. The physicians were instructed on when and how the intervention was to be implemented with each patient and on how to record each contact they made. The physician gives a brief, less than one minute, introduction about the importance of a healthy diet and then asks the patient if they have been making any efforts to eat a healthier diet. If they respond by saying 'yes', they are congratulated and given the booklet to get "some new ideas". If they say 'no', they are reassured, given encouragement, and then given the book and told to read it.

### **Evaluation**

Patients were given a food frequency questionnaire, FFQ, and short survey at the beginning of their intervention appointment. Physicians recorded delivery of the message and booklet at the patient's appointment. Intervention participants were interviewed via telephone 3-months later about their experience at the physician's office, and if their eating habits had changed.

### **Key Findings**

Of the patients in the study, 95% received the booklet and patients reported that only 50% of them received it directly from the doctor. Overall, 93% reported reading the booklet; use of the booklet varied little whether it was given by the physician or by other staff. Regardless, the more time spent discussing the booklet, the more likely participants were to have used the booklet. There was a small, but significant decrease in dietary fat intake, which was greater for the intervention group than for the control group.

## **Do paediatric cardiologists discuss cardiovascular risk factors with patients and their families?**

### **Reference**

Lentzner, B. J., Connolly, D. M., & Phoon, C. K. (2003, December) Do paediatric cardiologists discuss cardiovascular risk factors with patients and their families? *Cardiology in the Young*, 13(6), 551-558. Abstract retrieved June 13, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

### **Environmental Intervention and Policies**

The targeted population was paediatric cardiologists throughout the nation. The setting was in healthcare. The hypothesis studied was “*paediatric cardiologists do not consistently discuss cardiovascular risk factors with patients and their families.*”

### **Evaluation**

A nationwide survey of paediatric cardiologists determined the frequency of discussion with patients of:

- arteriosclerosis, and
- modifiable risk factors of:
  - weight,
  - smoking,
  - diet and nutrition, and
  - physical activity.

### **Key Findings**

Of the paediatric cardiologists studied:

- two-fifths indicated they discussed atherosclerotic disease with their patients frequently to always;
- interaction with patients with cardiovascular disease:
  - weight was discussed frequently to always by 59%,
  - smoking was discussed by 61%,
  - diet and nutrition was discussed by 63%, and
  - physical activity was discussed by 92%;
- interaction with patients without cardiovascular disease:
  - weight was discussed frequently to always by 35%,
  - smoking was discussed by 46%,
  - diet and nutrition was discussed by 39%, and
  - physical activity was discussed by 62%;
- “*cardiovascular risk factors were discussed more consistently as children grew older.*”

### **Lessons Learned**

Respondents of the survey provided these insights:

- promotion of cardiovascular health was a role more appropriate for providers of primary care;
- most common barriers to anticipatory guidance were:

- constraints of time, and
- perceived role of the cardiologist.

**Additional Comments**

Although the role of paediatric cardiologist can provide more prominence in anticipatory guidance regarding preventive cardiology and education, it still remains controversial.

## **Acculturation and cardiovascular disease risk in midlife immigrant women from the former Soviet Union.**

### **Reference**

Miller, A. M., Chandler, P. J., Wilbur, J., & Sorokin, O. (2004, Spring) Acculturation and cardiovascular disease risk in midlife immigrant women from the former Soviet Union. *Progress in Cardiovascular Nursing*. 19(2), 47-55. Abstract retrieved July 9, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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### **Environmental Intervention and Policies**

Women in midlife from the former Soviet Union were in the target population for the study with 218 participants. Examined within the longitudinal study of post immigration health were the following:

- relationships among acculturation,
- depression, and
- cardiovascular risk factors.

The study also identified factors predicting Framingham Risk Scores.

### **Evaluation**

The evaluation measures indicated:

- leading risk factors were obesity, dyslipidemia, and depression;
- older women had:
  - lower American Behavioral Acculturation subscale scores,
  - higher Russian Behavioral Acculturation subscale scores, and
  - higher depression scores;
- length of residence was significantly correlated with American behavioral acculturation but not Russian behavioral acculturation; and
- baseline body mass index, both acculturation scores, and depression scores predicted Framingham Risk Scores after one year, but serum glucose did not.

### **Key Findings**

*“The results suggest that contrary to findings in other immigrant groups, women from the former Soviet Union may decrease their risk for coronary heart disease as they assume a more American lifestyle.”*

### **Additional Comments**

*“Nursing interventions to address the high cardiovascular disease risk in this population are suggested.”*

## **A systematic review of the use of computers in the management of hypertension.**

### **Reference**

Montgomery, A. A., & Fahey, T. (1998) A systematic review of the use of computers in the management of hypertension. *Journal of Epidemiology and Community Health*. 52, 520-525.

### **Environmental Intervention and Policies**

The targeted population was adults in the setting of American Indian Tribal Communities, Health Maintenance Organizations (HMOs), and clinics.

Seven studies met the criteria, random control trials of computers and computer-based clinical decision support systems that investigated *any dimension* of the administration or management of hypertension.

Selected interventions had varied results, for example:

Study #1: The setting was with six practices in a hospital-affiliated family medicine center in Canada with 8,289 subjects. A computer reminder was sent to a General Practitioner versus a letter to patient versus a nurse telephone call to patient. The outcome was with significant increase in patients with a blood pressure (BP) recorded ( $p < .001$ ), but no improvement in BP control was found.

Study #3: One community health center was the setting with 1,115 subjects. Computer reminders were sent to General Practitioner, versus usual care. The outcome was a significant increase in patients with a BP recorded ( $p < .05$ ) and in control of BP ( $p < .05$ ).

Study #5: In the Netherlands, 15 general practices with 574 subjects were targeted. Data was processed by a central computer and sent to special care practices versus usual care. The outcome included significantly increased percentage of patients under permanent surveillance (76% versus 45%) and control of BP (70% versus 56% at .05 level of significance).

### **Evaluation**

Measures of evaluation included:

- patient uptake/administration,
- physician performance and
- blood pressure (BP) control.

### **Key Findings**

Computers can have a favorable effect on the uptake and follow up of patients in hypertension management. However, the effect of computers on physician's knowledge, recording of information and blood pressure control is less conclusive.

## **Tracking women's awareness of heart disease: an American Heart Association national study.**

**Reference:** Mosca, L., Ferris, A., Fabunmi, R., Robertson, & R. M. (2004, February 10) Tracking women's awareness of heart disease: an American Heart Association national study. American Heart Association. *Circulation*. 109(5), 573-579. Epub (2004, February 04). Abstract retrieved July 7, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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## **Environmental Intervention and Policies**

The leading cause of mortality in men and women in the United States is cardiovascular disease (CVD). Evidenced by prior research, there is a lack of risk awareness by women.

This study assessed the contemporary awareness, knowledge, and perceptions related to CVD risk among American women. Additionally the study evaluated trends since 1997, when the American Heart Association initiated a national campaign to improve awareness of CVD among women.

The targeted population was a random sample of United States women with an oversampling of black and Hispanic women. This represented 1024 respondents age greater or equal to 25 years of age; 68% were white, 12% black, 12% Hispanic, and 8% other ethnicities.

## **Evaluation**

A telephone survey of a nationally representative random sample of women was conducted in June and July 2003. The results were compared with those of similar surveys in 2000 and 1997. A standard interviewer-assisted questionnaire evaluated awareness, knowledge, and perceptions about heart disease.

## **Key Findings**

A shift in awareness of heart disease as the leading killer of women has occurred since 1997. In 2003, 46% of respondents spontaneously identified heart disease as the leading cause of death in women, up from 30% in 1997 ( $p < 0.05$ ) and 34% in 2000 ( $p < 0.05$ ). By comparison, the percentage of women citing cancer as leading cause of death has significantly decreased.

Additionally,

- *“Black, Hispanic, and younger women (<45 years old) had lower awareness of heart disease as their leading cause of death than did white and older women. “*
- *“Nearly all women reported comfort in discussing prevention with healthcare providers, but only 38% of women reported that their doctors had ever discussed heart disease with them.”*

## **Additional Comments**

*“Awareness of CVD has increased, although a significant gap between perceived and actual risk of CVD remains. Educational interventions to improve awareness and knowledge are needed, particularly for minority and younger women.”*

## **Native American medicine in the treatment of chronic illness: developing an integrated program and evaluating its effectiveness.**

### **Reference**

Native American medicine in the treatment of chronic illness: developing an integrated program and evaluating its effectiveness. (1999, January) *Alternative Therapies*. 5(1).

### **Environmental Intervention and Policies**

The targeted population included non-Native American adult patients diagnosed with diabetes, hypertension, asthma, depression, and other conditions.

The intervention included 116 patients who were treated in conjunction with traditional native healers in an intensive program of Native American practices lasting 7 to 10 days. The first 7 days included bed rest away from distractions. Patients received 2 to 7 hours per day of therapeutic intervention such as ceremony, journal writing, and synthesis activities utilizing Native American image. Plus, patients learned problem-solving skills to adjust to their environment.

As a result, the patients were compared with those who worked with traditional healers and those who received treatment at an emergency room. The reviewer notes that the comparison group is relatively weak and the intervention group is biased towards higher socio-economic status.

### **Evaluation**

Evaluation was conducted five years after program completion for 107 patients, of which all but two reported “psychological breakthroughs”.

### **Key Findings**

Patients who completed the intensive program improved more than those who did not. Statistically significant differences ( $p < .01$  diabetes and depression) were shown for the patients who responded to questions asking if the results of their therapy provided a “cure”, made them feel “better”, “no-change”, or “worse.” Death was also tracked. The author is not sure if they can attribute to the program the participants’ lifestyle or other issues.

## **Physician/dietician nutrition counseling of patients who are overweight, hypertensive or have type II diabetes.**

### **Reference**

Pritchard, D. A., et al. (1999) Nutritional counseling in general practice: A cost effective analysis. *Journal of Epidemiological Community Health.* 53, 311-316.

### **Environmental Intervention and Policies**

The targeted population for the intervention included 273 randomly allocated patients who were overweight, hypertensive or had type II diabetes.

The setting was with a university group, general practice in Australia.

This study utilized three different treatment groups, a dietician group, a doctor/dietician group and a control group (or doctor only). Patients in the dietician group received six individual counseling sessions, the first session lasted 45-minutes and each additional lasted 15-minutes. Patients in the doctor group saw the doctor three times during 12-months to encourage the patient and to monitor progress. The dietician reviewed the patient's records and told the doctor what was to be discussed, in regard to healthy eating, during the visit. Counseling included advice on food shopping, cooking, food selection, meal planning, and exercise programs. Patients kept food records. The control group received no counseling.

### **Evaluation**

Physiologic screenings were conducted with participants pre- and postintervention, including height, weight, blood pressure, blood glucose, as well as questions regarding marital status, occupation and current medications. The main outcome evaluated included changes in weight and blood pressure. A cost-benefit analysis was also conducted.

### **Key Findings**

The doctor and dietician group lost the most weight, followed by the dietician-only group. The difference in weight lost between the dietician-only group and dietician/doctor group was in the right direction, but not significant. Both treatment groups were successful at lowering blood pressure, with the doctor/dietician group, again, being the most successful. The dropout rate was lower in the doctor/dietician group than in the dietician-only group. The cost-benefit analysis revealed that the cost of an extra kilogram of weight loss for patients in the doctor/dietician group was \$9.76 and for the dietician group was only \$7.30. They attribute the increased cost in the doctor/dietician group to the cost of staffing a dietician, the extra time the doctors spent in consultation, and that the attendance rate was higher in that group.

## **“Heart Health Nova Scotia”: Continuing Professional Education.**

### **Reference**

*Project 18 – Multidisciplinary learning in continuing professional education: The Heart Health Nova Scotia Experience.* G8 database project summary retrieved (n.d.) from Canadian Heart Health Database Centre, Memorial University, St. John's, NF, <http://www.med.mun.ca/g8hearthealth>.

### **Environmental Intervention and Policies**

The targeted population included 36 health professionals which included medical doctors, registered nurses, dieticians, pharmacists, social workers, health educators and recreation specialists. The setting for the intervention was through professional education.

The purpose of this pilot project was to develop and test a multidisciplinary case-based continuing education program for health professionals working in Nova Scotia. The program consisted of four 2-hour sessions delivered to groups of 10-12 professionals.

### **Evaluation**

Measurements of the outcomes included:

- the participant's and facilitator's involvement in the sessions;
- their feelings about this strategy as a learning method;
- the length and number of sessions;
- the resources needed; and
- the most and least satisfying aspects of the program.

These goals were accomplished through direct observation of the sessions, review of documentation, questionnaires administered pre- and post-program and through key informant interviews.

### **Key Findings**

The authors reported, *“The project was found to be an effective means of acquiring new understandings and promoting health professionals collaboration in addressing heart health in their communities.”*

## **Identification of cardiovascular risk factors in homeless adults.**

### **Reference**

Szerlip, M. I., & Szerlip, H. M. (2002, November) Identification of cardiovascular risk factors in homeless adults. *The American Journal of the Medical Sciences*. 324(5), 243-246. Abstract retrieved June 26, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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### **Environmental Intervention and Policies**

Common cardiac risk factors present in homeless adults is unknown. The study identified the reversible cardiovascular risks present in the homeless. The setting for the study was at a homeless clinic in New Orleans, Louisiana where 100 homeless patients were the targeted population and matched with 200 non-homeless patients who attended an inner-city primary care clinic.

### **Evaluation**

A retrospective chart review was performed randomly on homeless patients. The comparison was with matched non-homeless patients. The review of the each of the charts from the two groups was for the presence of:

- hypertension,
- diabetes mellitus type 2,
- cigarette smoking, and
- hypercholesterolemia.

Within the study, statistical comparisons were made between the homeless and the control subjects.

### **Key Findings**

The following comparisons were reported regarding the following risk factors:

- hypertension present in the population of:
  - 65% of the homeless population studied, and
  - 52% of the non-homeless population studied;
- smoking present
  - 75% of the homeless population studied, and
  - 57% of the non-homeless population studied;
- diabetes
  - no difference in prevalence with either of the populations studied; and
- total cholesterol
  - no difference in prevalence with either of the populations studied.

*“Compared with national data, hypertension, smoking and diabetes seem to be represented excessively in the homeless population.”* Than in a matched cohort, smoking and hypertension are significantly more prevalent in the homeless population.

*“Education and preventive programs are needed to reduce the prevalence of cardiovascular disease and reduce the over-utilization of expensive healthcare resources.”*

## **Different outcomes for different interventions with different focus!—A cross-country comparison of community interventions in rural Swedish and US populations.**

### **Reference**

Weinchall, L., Lewis, C., Nafziger, A. N., Jenkins, P. L., Erb, T. A., Pearson T. A. et al. (2001) Different outcomes for different interventions with different focus!—a cross-country comparison of community interventions in rural Swedish and US populations. *Scandinavian Journal of Public Health*. 56(Suppl.), 46-58. Abstract retrieved June 26, 2004 from PubMed database, National Library of Medicine, <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi>.

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### **Environmental Intervention and Policies**

Risk factor outcomes in Swedish and United States intervention programs were compared for the prevention of cardiovascular disease (CVD). The exploration was on how different intervention program profiles affect the outcome. The setting was in two intervention areas as compared to two reference areas:

- intervention areas
  - Norsjo, Sweden
  - Otsego-Schoharie County, New York state, USA
- reference areas
  - Northern Sweden region
  - Herkimer County, New York state, USA

### **Evaluation**

A quasi-experimental design was used to compare trends in risk factors and estimated CVD risk in two intervention areas with those in reference areas using serial cross-sectional studies and panel studies.

Programs in the two countries were able to achieve significant changes in CVD risk factors that the local communities recognized as major concerns:

- changing eating habits in the Swedish population, and
- reducing smoking in the United States population.

*“When pooling the serial cross-sectional studies, the estimated risk reduction (using the Framingham risk equation) was significantly greater in the intervention populations compared to the reference populations.”*

### **Key Findings**

Consistent is the overall pattern of risk reduction. This suggests that the two different models of rural county intervention can contribute to significant risk reduction. The greatest effect with the Swedish program was on the reduction of serum cholesterol levels. In the United States program the greatest its greatest effect was on smoking prevention and cessation. The outcomes were consistent with the programmatic emphases.

*“Socially less privileged groups in these rural areas benefited as much or more from the interventions as those with greater social resources.”*

## **Study finds heart patients fare much better if given reminders on drug regime.**

### **Reference:**

Windham, C. (2004, September 21) Study finds heart patients fare much better if given reminders on drug regime. p. D6.

### **Environmental Intervention and Policies**

A group of hospitals in the Salt Lake City-based nonprofit health system which was led by physicians from Intermountain Health Care reported success in increasing the number of patients who got blood-pressure and cholesterol life-saving medications upon discharge. Through this systematic medication program, the hospitals showed they reduced the likelihood for readmission and death in their discharged heart patients.

The study examined records from almost 58,000 patients discharged from 10 of Intermountain Health Care's (IHC) largest hospitals. The intervention strategy implemented in 1997 used:

- checklists,
- reminder cards,
- follow-up phone calls, and
- educational brochures.

The intervention was effective in:

- tracking whether the patients got prescriptions, and
- improving doctors' adherence to recommended standards of care.

### **Evaluation**

To measure the program's impact, researchers compared data with:

- 26,000 patients hospitalized between 1996 and 1998, and
- 31,465 patients hospitalized between 1999 and 2002.

### **Key Findings**

After implementation of the program, hospitals started seeing improvements.

- The rate of prescriptions by 1999 for heart-beneficial medicines increased to more than 90% for discharged patients.
- In heart-failure patients, deaths were reduced by about 23% and readmission cut by about 9% after one year.

Although there is a financial disincentive for hospitals to run discharge programs, the institutions can benefit according to researchers, with the estimate the lower readmission rates in the heart-failure group could result in an estimated \$2.5 million a year in savings to the community by avoiding "unnecessary" readmissions.

## **Cardiac rehab cuts risks after heart attack: Cardiac rehabilitation reduces risk of death by more than 50%.**

### **Reference**

Witt, D. (2004, September 1) Cardiac rehab cuts risks after heart attack: Cardiac rehabilitation reduces risk of death by more than 50%. *Journal of the American College of Cardiology*. 44, 988-996.

### **Environmental Interventions and Policies**

This article reports a study at Mayo of 1,821 people from Minnesota who had heart attacks and discharged from the hospital between 1982 and 1998. Overall, 55% of the heart attack survivors participated in a cardiac rehabilitation program following their attack. The cardiac rehabilitation program consisted of a medically supervised exercise program designed to help people regain strength and improve heart health after a heart attack or heart surgery.

### **Evaluation**

The 1,821 people identified in the study were followed after discharge from hospital to assess participation rates in the cardiac rehabilitation program.

### **Key Findings**

- Researchers found up to a third of deaths within three years after a heart attack were attributable to *not* participating in cardiac rehabilitation.
- Participation rates in cardiac rehabilitation were much higher among men than women, 67% vs. 38%.
- Participation also declined with increasing age, with 81% of heart attack survivors under 60 participating vs. 32% of those over 70.
- Other factors that increased the likelihood of participating in cardiac rehab included:
  - smoking,
  - high cholesterol levels,
  - greater body mass index (BMI),
  - family history of heart disease, and
  - cardiologist was the primary care provider.

Although the study was not designed to answer exactly why some groups are less likely to participate, Veronique Roger, M.D. and cardiologist at the Mayo Clinic in Rochester, MN said, *“Some key issues for women may be a lack of transportation and support networks. They may also not see rehab as important, or may need to care for a spouse who may also be ill.”*

### **Lessons Learned**

- Participation in cardiac rehabilitation was strongly associated with improved survival in the years following a heart attack. (e.g. 95% for participants vs. 64% among non-participants).
- Participation reduced the risk of repeat heart attack by 28%.
- Extra nudge to participate in rehabilitation was needed by physicians, in particular to women patients.