

HEALING HANDS



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Heart of the Matter: Managing and Preventing Cardiovascular Disease

Heart disease is the number one killer of both men and women in the U.S. Poor diet, insufficient aerobic exercise, excessive use of drugs that elevate blood pressure and pulse rate (including nicotine and alcohol), highly stressful lives, and lack of regular preventive health care increase the risk for life-threatening diseases of the cardiovascular system. Homelessness compounds this risk, complicates treatment, and presents barriers to self-care. This issue of Healing Hands reports the prevalence of cardiovascular diseases among homeless people, explores special considerations for the treatment and self-management of those with chronic disease, and highlights strategies HCH providers use to help adults stop smoking and promote heart health in children.

Cardiovascular diseases are highly prevalent among people who are homeless. Among those most commonly seen by primary care providers serving homeless patients are *hypertension* (high blood pressure), *hyperlipidemia* (high blood cholesterol/triglycerides), and *heart failure* (impaired cardiac function, often resulting from uncontrolled hypertension and/or hyperlipidemia).¹ Compared to poor adults who are housed and to the general population, homeless people have higher rates of hypertension and are more likely to remain untreated. They are also significantly more likely to develop and die from cardiovascular conditions at earlier ages, due to disproportionate risks associated with smoking, ethnicity, and living in poverty.

RISK FACTORS “There are many reasons for the early onset of cardiovascular diseases in homeless people,” says **Theresa Brehove, MD**, lead physician for the homeless program at Venice Family Clinic in Los Angeles County. “People who are homeless lack regular health care and a source of nutritious food. Homeless patients are more likely to present with substance use disorders, uncontrolled diabetes, and hypertension,” which is the leading risk factor for other cardiovascular diseases and for cerebrovascular and renal diseases as well.⁴ Hypertension is more prevalent among African Americans,⁵ who are overrepresented among homeless people in some areas. “Factors associated with homelessness that aggravate high blood pressure include excessive salt intake, alcoholism, and other drug use,” notes **Robert Donovan, MD**, Medical Director of Comprehensive Care for the Homeless Program in Cincinnati, Ohio.

Poor Diet Food served in shelters and soup kitchens is typically high in sodium, fat, and carbohydrates, which both cause and exacerbate hypertension, high cholesterol, and obesity. Individuals who are obese (with a body mass index [BMI] > 30) have a 50–100 percent higher risk of premature death from all causes, compared to individuals

Higher Cardiovascular Risks for Homeless People

- 65% of homeless patients seen in New Orleans had hypertension, compared to 52% of a matched cohort of non-homeless patients at an inner city primary care clinic and 23% of a national sample.²
- In the same study, 75% of homeless patients smoked, compared to 57% of non-homeless patients and 25% of individuals in a national sample.
- Homeless men 45–64 years old are 40% to 50% more likely than men of comparable age in the general population to die of heart disease, which is the leading cause of death among older homeless men.³
- A study of single homeless adults in Toronto found that 35% had hypertension but only 17% were taking medication to control this condition.³

with a BMI of 20 to 25.⁶ Though studies indicate that homeless people are less likely to be overweight or obese than the general population,³ obesity is more difficult to treat in homeless patients, says **Barbara Wismer, MD, MPH**, Medical Director for Primary and Urgent Care at Tom Waddell Health Center in San Francisco.

Nicotine, Alcohol, and Other Drug Use Among the factors that confer increased risk of cardiovascular disease for homeless people is heavy and high-risk smoking, which elevates blood pressure and pulse rate, thus contributing to heart attack and stroke. In addition to higher rates of smoking, people who are homeless are more likely than others to smoke cigarette brands with a higher yield of tar, hand-rolled tobacco, or cigarettes without a filter. They also tend to inhale more deeply, leave a shorter stub, and smoke discarded cigarette butts.⁷ High rates of alcohol and other drug use among homeless people also contribute to their increased cardiovascular risks. Excessive alcohol use can result in cardiomyopathy and heart failure. Cocaine and amphetamines cause cardiac arrhythmia, acute hypertension, stroke, and heart attacks. Uncontrolled withdrawal from excessive alcohol or drug use can result in rebound hypertension.¹

BARRIERS TO CARE Homeless people encounter significant barriers to appropriate cardiovascular care, not least of which is the condition of homelessness itself. “Housing is health care,” stresses **Matias Vega, MD**, Medical Director of Albuquerque HCH. Yet even when formerly homeless people are housed, they may need reminders to eat a healthy diet, keep medical appointments, and take medications, observes **Rexine McKinley, RN**, of the Maricopa County Health Department’s HCH project in Phoenix, Arizona.

Unmet Basic Needs Competing priorities present a significant obstacle to treatment. “It’s difficult to tell people who have no home or food that treating their blood pressure should be a priority when it’s not making them feel sick,” explains **Adele O’Sullivan, MD**, Medical Director of the Maricopa County HCH.

Treatment Barriers Even for people who are motivated to treat their condition, use of medications may be problematic. Pills are often lost, stolen, or crumble in pockets from the movement of walking. Multi-dose regimens are confusing and especially challenging for homeless individuals. Poor water intake and lack of access to bathrooms complicate the use of diuretics.¹

Psychiatric illnesses and their treatment may also complicate adherence to the plan of care. Use of newer antipsychotics has been associated with reports of dramatic weight gain, diabetes, increased HDL cholesterol and triglyceride levels, and decreased LDL cholesterol.⁸ A consensus development panel recommends that physicians who prescribe these drugs conduct baseline screening and follow-up monitoring to mitigate the likelihood of adverse metabolic side effects.

Self-Management Barriers Nonpharmacologic management of cardiovascular disease—such as weight reduction, a low-fat, low-sodium diet, and regular exercise—are especially difficult for homeless people to

maintain.⁴ Food choices are largely out of their control and opportunities for exercise are limited. “When you must carry all your worldly belongings in a bag and you don’t have clean clothes, the health club isn’t an option,” remarks **Mark Rabiner, MD**, Attending Chief Hospitalist at St. Vincents–Manhattan HCH in New York. Though homeless people typically walk everywhere, foot problems, lack of appropriate footwear, inhospitable weather, and unsafe neighborhoods may limit their ability to get regular exercise that enhances cardiovascular health.

Financial Barriers Finally, lack of health insurance leads to irregular health care and untreated disease. “It’s not unusual for our patients to be in hypertensive crisis with a blood pressure of 240/120 on their first visit,” says **Beverly May, MSN, CFNP**, Clinical Director of the Hazard/Perry County Community Ministries HCH in Hazard, Kentucky. “By the time we see them, a great deal of damage has already been done.” Of clients seen by HCH providers in 2004, 71 percent were uninsured.⁹ Removing financial barriers alone won’t solve the problem, however. A study of homeless adults in Toronto revealed a significant amount of untreated cardiovascular disease in a country with universal health coverage.³

CLINICAL PRACTICE ADAPTATIONS Adapted clinical guidelines for the care of homeless people, developed by the HCH Clinicians’ Network, emphasize the importance of adhering to an evidence-based standard of care for all patients, regardless of their level of resources.¹ To download a copy, see www.nhchc.org. These guidelines recommend the following clinical practice adaptations to optimize cardiovascular care for homeless patients:

Diagnosis and Evaluation Even more than with people who are housed, you have to know a homeless patient’s social situation, observes Dr. Donovan. “Treatment must also take behavioral factors into account.” In particular, ask if the patient drinks alcohol, how much and how often, and when his or her last drink was. This may affect the decision to prescribe statin medications, which may be contraindicated by liver damage secondary to alcoholic cirrhosis. Remember that high blood pressure is often seen during periods of withdrawal from alcohol use.¹

Triage can be particularly challenging with homeless patients. For example, the initial signs and symptoms of heart failure include shortness of breath, coughing, fatigue, and swollen legs. “But a homeless person’s legs may be swollen because he is sleeping in a chair,” says Dr. Rabiner. “Most important is taking a careful history to help determine the etiology of your patient’s symptoms.”

Diagnostic Tests Obtaining fasting blood samples from homeless patients can be difficult because missing breakfast may mean foregoing food all day. “You can measure direct LDL and HDL without fasting, but it’s a more expensive test and you can’t check triglycerides without a fasting blood sample,” notes Dr. Brehove. Offering food in the clinic may make it easier for homeless patients to agree to fast before diagnostic tests are done.

Dr. Vega encourages health care providers to consider whether routine cholesterol screening is a good use of limited resources for primary prevention of heart disease. “Screening for high cholesterol prevents disease or death 10 to 20 years down the road, but our patients are dying at ages 45 to 50 from other causes,” Dr. Vega says.¹⁰ He believes that prevention resources are better spent screening for mental illnesses and addictions.

Medications Choose medications based on the patient’s other medical problems, psychosocial factors, and cost, advises Dr. Donovan. Avoid prescribing diuretics if the patient does not have easy access to a restroom or will not be able to return for laboratory tests. Recognize that diuretics can exacerbate dehydration and that dangerous (even fatal) levels of hyperpyrexia can be triggered by anticholinergic medications in combination with diuretics in hot, humid environments. Use alternative medications as appropriate.¹ “We had a patient who was paranoid and refused blood draws, so we chose a calcium channel blocker to treat his hypertension,” Dr. Brehove recalls.

In all cases, prescribe the simplest medical regimen possible and dispense small amounts of medication to encourage return for follow-up. If once-a-day dosing is not possible, use pre-filled medication boxes with daily dosage slots which the patient can remove and carry with him or her.¹

Education and Self-Management “You have to educate your patients about the connections between cardiovascular risk factors and diseases,” says Dr. Wismer. The information you provide has to be understandable and meaningful to the patient. “Don’t just give them a number” (e.g., blood pressure=240/120), says Dr. Donovan. “Let them know why you’re worried.” Rather than telling a patient he may have a stroke, “ask him if he knows someone who was paralyzed on one side,” Dr. Rabiner suggests.

Since the clinician can’t make the patient do anything he or she is not ready to do, it may be helpful to explore the patient’s motivation to change. By using motivational interviewing techniques,^{11,12} clinicians can help their patients move toward readiness for behavioral change, which typically occurs in stages — from precontemplation to contemplation to action. A simple tool to clarify the patient’s current stage is the Readiness to Change Ruler, a straight line drawn on a piece of paper that represents a continuum from left (“not prepared to change”) to right (“ready to change”).¹³ Patients mark a spot on the line that represents their current position in the change process. Clinicians then ask them why they did not place the mark further to the left, which elicits motivational statements, and what it would take to move the line further to the right, which elicits perceived barriers.

Ultimately, controlling most chronic illnesses requires self-management. Engagement of patients in their own care is at the heart of the Health Disparities Collaborative, initiated by the Health Resources and Services Administration in 1998 to close the gap between scientific knowledge and clinical practice and to eliminate health disparities among poor, minority, and medically underserved populations.^{14,21}

At Maricopa County HCH, which is participating in a Cardiovascular Collaborative, patients set a self-management goal with the doctor, McKinley says. “We help our patients monitor their progress and offer them support. We may think they need to stop drinking, but the goal is their choice.” When patients set the agenda, “it changes everything about the visit,” May says. “They get help with what they want, and that builds trust and mutual respect.” Goals should be concrete and easily achievable and may be something as simple as returning for a blood pressure check.¹⁵ (See box below for more ideas.)

How to Help Homeless Patients Eat Better & Exercise More

DIETARY PRACTICES

- **Explain what a heart-healthy diet is.** Encourage clients to switch from sugared drinks to water or diet drinks. Suggest they add fruits and vegetables. Recommend not adding salt at the table. (Barbara Wismer)
- **Discuss portion control.** Suggest that obese clients eat half and give half to their skinny friend. (Mark Rabiner)
- **Recognize that people have limited choices.** Don’t chide them for not adhering to their diets while living on the streets. (Theresa Brehove)
- **Educate food workers.** Explain how to provide low-sodium, low-cholesterol meals—e.g., sugar-free Jell-O, chicken baked without the skin, seasoning with spices instead of salt.¹

EXERCISE

- **Counsel patients to increase aerobic exercise.** Give examples of how to do this—e.g., “Walk from 1st street to 6th street and back, which equals a mile; or walk up and down 4 flights of stairs.”¹
- **Encourage alternative forms of aerobic exercise** for patients who are obese or have disabilities. Try chair exercises with hand weights (books, soup cans, plastic bottles filled with water) and leg lifts.¹

Follow-up Successful treatment of cardiovascular disease requires ongoing care, and HCH providers use positive incentives to encourage patients to return for follow-up. As part of the Cardiovascular Collaborative, the Maricopa County HCH project developed a Subway incentive program, notes Donna Brown, RN. “When patients come back for their high blood pressure medications before their current prescription runs out, we give them a \$5 coupon for a sandwich and a drink.” Since the program’s inception, patients have returned for follow-up more frequently, and the percentage of patients with appropriate blood pressure control has increased from 31 percent to almost 47 percent.¹⁶

NEVER GIVE UP More important than any medication or specific intervention, continuity of care and trust between the patient and clinician are paramount in treating homeless patients with cardiovascular diseases, Dr. Donovan says. To this end, “always address what they came in for,” advises Dr. Brehove. “They won’t trust you if they come in with blisters on their feet and you only want to talk about their blood pressure.”

If you just take a snapshot of homeless patients, “their problems seem insurmountable,” acknowledges Dr. O’Sullivan. “Nevertheless, our patients *do* get better.” The key, Brown says, is that “we never give up. We keep reminding ourselves that this could be the day, and this could be the patient who is ready to make a change.”

Case Study

Anna, a 50-year-old nonsmoker, escaped an abusive relationship, leaving behind her medications and everything she owned. When she presented to the clinic in April, she had a blood pressure of 202/98, +1 proteinuria, random glucose of 243, and labored respirations. She was profoundly depressed. Initial treatment reduced her blood pressure to 160/78. She was given a month’s supply of all her new medications and was assigned to a Family Health Navigator (FHN), who helped her set goals of walking daily, reducing her salt and carbohydrate intake, and increasing her water intake. The FHN also worked with shelter staff to help provide low-salt foods, baked meats, fresh fruits, and veggies. Now in transitional housing, Anna has learned to cook reduced salt, low-fat meals and walks about 3 miles a day. On her most recent visit, her blood pressure was 140/86, random glucose was 148, weight was down 4 pounds, breath sounds were clear, and her affect might best be described as radiant.

— Submitted by Beverly May, MSN, CFNP
Hazard/Perry County Community Ministries, Hazard, Kentucky

Don’t Ignore Smoking in Homeless Patients

Considering the host of pressing medical and social problems experienced by homeless people, health care providers may be tempted to turn a blind eye to their smoking, which can seem a comparatively minor problem. Indeed, many reasons are given for doing so: “You can’t afford to worry about smoking when they haven’t got a roof over their head.” “Smoking is one of the few ‘positive’ aspects to life for many homeless people.” “Smoking helps relieve stress.” “We don’t have the resources to tackle smoking.”⁷

Though each of these rationalizations contains a kernel of truth, there are even more compelling reasons to address smoking with homeless patients. For example, according to the World Health Organization, 1 year after quitting, the risk of heart disease decreases by 50 percent.⁵ At Albuquerque HCH, patients who participated in a state-funded smoking cessation program also became interested in drug and alcohol treatment, Dr. Matias Vega reports.

“You can’t just ignore smoking because people are homeless,” says Jill Jarvie, RN, PHN, Homeless Family Team Coordinator

at the Tom Waddell Health Center in San Francisco. “You have to give them a fair opportunity to be healthy, no matter what their housing situation.”

It’s an uphill battle to quit smoking, even for people who are housed. In a study of smoking cessation among people with schizophrenia, more than half of participants quit smoking who received enhanced treatment with bupropion, nicotine replacement, and a 12-week group program, but only 20 percent were not smoking at follow-up 3 months later, notes investigator Alan Birnbaum, PhD, Clinical Psychologist at Community Health Link in Worcester, Massachusetts.¹⁷ Quitting may be especially difficult for homeless people, who often relapse due to stress, Birnbaum surmises.

HOMELESS PEOPLE WANT TO QUIT

Despite the difficulties of quitting, research reveals that more than a third of homeless people who smoke express the desire to quit within the next 6 months. Often they can’t afford to purchase nicotine replacement supplies and are unaware of or unable to access a smoking cessation program

in the community.¹⁸ Indeed, help quitting smoking was one of the top two needs expressed by residents of a large family emergency shelter in San Francisco (the closely related goal of reducing stress was the other). The shelter serves up to 70 parents and children; 80 percent of adult residents smoke.

With funds from the San Francisco Tobacco Free Project, the Tom Waddell Family Team hired an Americorps volunteer and developed a tobacco awareness program. The program is comprised of two 2-hour group sessions on the direct and indirect effects of smoking and media literacy and two individual sessions that provided stage of change interventions. Participants who completed the program received a gift certificate to a local clothing store. Of those who completed the program during the past year, 85 percent reduced the amount they smoked. However, the group had only limited success in reducing their children’s exposure to second-hand smoke. “The only place parents have to smoke outside is also the only place where children can play,” Jarvie says, and shelter rules require that parents have their children with them at all times.

COLLABORATIVE APPROACH

Perry County, Kentucky, has the dubious distinction of having the highest rate of smoking in the country (35%). The Hazard/Perry County Community Ministries' HCH project is developing a registry of smokers who want to quit. HCH providers are helping patients set self-management goals, modeled on the Health Disparities Collaborative. "We address smoking on some level at every visit.

You never know when there will be a 'teachable moment,'" says Clinical Director Beverly May.

In fact, studies show that brief advice from doctors is likely to increase the odds of smokers' quitting by 30 percent.⁷ To some homeless patients (particularly adolescents), the health benefits of smoking cessation may seem remote, but the economic benefits can be more persua-

sive. "For those who are unimpressed by the warning on the cigarette box that smoking can kill them, I may emphasize how much cigarettes cost," Dr. Mark Rabiner says. "Sometimes that gets their attention."

Ultimately, providers should take nicotine addiction seriously because it is life threatening. "Don't think you can just worry about it later," warns Birnbaum.

Promote Heart Health in Homeless Children

A recent report by the Institute of Medicine presents some startling statistics about childhood obesity and risk for cardiovascular disease:¹⁹

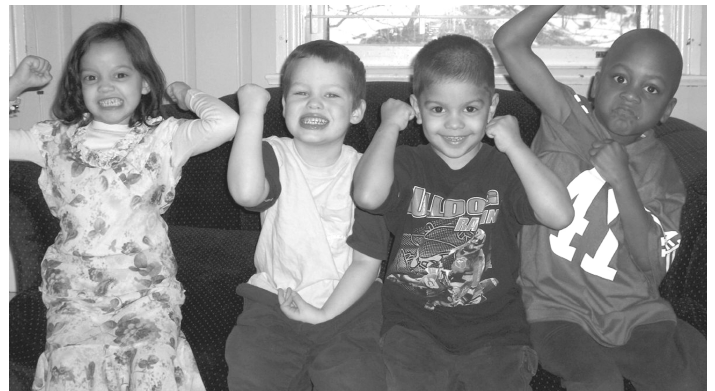
- Over the past three decades, the prevalence of childhood obesity has more than doubled for preschool children and adolescents, and has more than tripled for children ages 6–11. At present, approximately 9 million children over age 6 are considered obese (\geq the 95th percentile).
- In a population-based sample, approximately 60 percent of obese children ages 5–10 had at least one cardiovascular disease risk factor (such as elevated total cholesterol, triglycerides, insulin, or blood pressure), and 25 percent had two or more risk factors.

Similar to their parents, homeless children are at increased risk. Homeless children have higher rates of acute and chronic illnesses and poorer nutrition than their housed counterparts.²⁰ They also have more limited opportunities for active, outdoor play.

ORGAN WISE GUYS TO THE RESCUE! To reduce these risks for homeless children, the National Center on Family Homelessness adapted a curriculum called the OrganWise Guys Younger Years program, which promotes heart health by teaching young children the importance of healthy nutrition and physical activity.

Additional Resources to Promote Healthy Children

- We Can! (Ways to Enhance Children's Activity & Nutrition!), developed by the National Heart, Lung, and Blood Institute, provides resources to encourage healthy eating, increase physical activity, and reduce sedentary time. For more information, call (866) 359-3226 or visit www.nhlbi.nih.gov/health/public/heart/obesity/wecan.
- The Children's Health Fund report, *Improving the Nutrition Status of Homeless Families*, includes guidelines for homeless family shelters. See www.childrenshealthfund.org.



Flexing their muscles puts a smile on the face of these homeless children participating in an OrganWise Guys program. Photo by Katie Volk. © National Center on Family Homelessness.

Developed by Dr. Michelle Lombardo, the OrganWise Guys are fanciful cartoon characters representing organs in the body, with such evocative names as Hardy Heart, Calci M. Bone, and Windy the Lung (see www.organwiseguys.com). Each character stars in a series of books that promote such healthful activities as eating five fruits and vegetables a day, exercising, and not skipping breakfast.

In addition to adapting nutrition and exercise components of the curriculum for use in shelters, the Center created three new sessions for parents, says Project Coordinator **Katie Volk**. Center staff also added a special section on emotional health to help children living in shelters deal with the trauma of being homeless. Each of the 14 sessions, conducted over 7 weeks, includes a healthy snack, which helps reinforce principles of good nutrition for shelter staff, parents, and children.

The Center recently completed a study of the adapted curriculum in three homeless shelters in Boston. Volk was excited about the findings. "The kids remember what they learn, and they identify with the characters and the concepts," she says.

In the near future, the Center hopes to have a train-the-trainer curriculum and educational materials available for use in family shelters. For more information, contact Volk at katie.volk@familyhomelessness.org.

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