

Addressing Diabetes in Trempealeau County, Wisconsin

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Foreword

The Robert M. La Follette School of Public Affairs at the University of Wisconsin-Madison is pleased to be able to apply part of its efforts to improving health in Wisconsin communities. Each year, in one of its graduate courses, the La Follette School randomly selects several communities from around the state and conducts research to identify important health issues and to work with community leaders to design ways of addressing those issues.

The Wisconsin legislature established the Robert M. La Follette School of Public Affairs in 1984 with a multifaceted mission—to engage in instruction, research, and outreach. The La Follette School fulfills this mission by offering a master's degree in public policy; by encouraging scholarly research on numerous issues that have public policy implications; and by offering numerous enrichment and training opportunities to policy makers at all levels of government.

The School's Center for State, Local and Tribal Governance has contributed to that commitment by establishing an annual program geared toward assisting Wisconsin communities in addressing community health issues. The program is the centerpiece of the Skornicka Seminars at the La Follette School, initiated with support from Joel Skornicka to improve local governance in the state. Joel Skornicka is a former mayor of Madison and assistant to UW chancellors.

The format of these seminars is that students at the La Follette School enroll in a course that provides them with an opportunity to conduct field research and to learn facilitation skills in community development. The students in the course form teams, and each team focuses on a specific community. Students complete an analysis and present it in a case study, like the one that follows. Then community leaders meet to discuss the findings of the case study and to formulate a way of resolving issues raised in the analysis. The La Follette School is happy to assist in any way it can with the implementation of plans designed at these meetings.

Initially, the focus of these seminars was on the issue of gangs and youth violence. We treated this concern as a health and safety issue. We have broadened the scope of the seminar this year to include other community health issues. This expansion is not because gangs and youth violence are no longer matters of concern, but rather to recognize that communities face a variety of health issues. We want to be responsive to the needs and priorities of the people of Wisconsin.

On behalf of the students, faculty and staff at La Follette, I would like to acknowledge and thank the many individuals who have made these studies possible. We appreciate the time and the information that you have contributed. Our hope is that you find our work useful in enhancing the health of the people in our state.

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Robert M. La Follette School of Public Affairs
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- Julie Seguin, Eleva-Strum School District Breakfast and Lunch Programs
- Joanne Abrahamson, Trempealeau County Senior Services
- Marjorie Kube, Arcadia Food Pantry
- Cyndy Jacoby, UW-Extension Trempealeau County, Family Living Agent
- Mike Sobotta, Arcadia High School Health Teacher
- Arcadia High School Students
- Juanita Rosenberg, Osseo-Fairchild Middle School Health Teacher
- Osseo-Fairchild Sixth Grade Students

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Executive Summary

In 2002, the Trempealeau County Health Department assessed its health needs, an exercise it undertakes about every five years. One of the priority health problems identified in the assessment was diabetes. The mortality rate for diabetes in Trempealeau County is 46.1 death per 1,000, which is almost twice the rate for Wisconsin as a whole. Diabetes costs in Trempealeau County amounted to \$13.1 million, in both direct and indirect costs. As public policy students, we hope to help the county identify local policies and programs to combat the causes of this disease and improve the diets and physical activity levels of residents. Through discussions with local health professionals and residents of various ages, we identify possible target groups for public programs and discuss the advantages and difficulties of implementing programs for each target group. Interviews we conducted provided information about Trempealeau County's consumption trends, examples of nutrition and activity services, and barriers to healthier lifestyle choices.

In the course of our research, we spoke with high school and middle school students from Osseo-Fairchild and Arcadia schools. These are important target groups to consider when designing programs or plans to address diabetes. High school students are at an age where they may already be making lifestyle decisions and will soon be out of the home, eating and exercising however they choose. It is important to instill in them, now, the motivation for keeping themselves healthy. The middle school students are excited about physical activity while still having influence in meal choices at home. They showed enthusiasm for learning about and being a part of additional programs in their community.

We also spoke with adult community members who serve the communities of Trempealeau County. The owner of several grocery stores has witnessed a change in eating habits in the county, with people eating more produce and less fat; on the other hand, those working with the elderly population notice a reticence to change and reluctance to accept newer diet trends. Several nutrition and physical activities are already in place in the county, so raising awareness and promoting these activities is a starting point for any new program or plan. These include senior nutrition programs, a "Walk, Dance, Play" program aimed at kids and seniors, nutrition information in grocery stores, health courses in the schools, and local food pantries.

Even with good intentions, promoters of new programs face major barriers in Trempealeau County. One barrier is a lack of funding to operate public programs, especially in a time of large budget deficits at all levels of government. Another obstacle is finding a time when various populations can participate in programs—most people have busy lives with little free time. Some believe the local culture, with its reliance on traditional, hearty meals, also is a barrier to change. A desire to support local agriculture by consuming whole milk also represents strong feelings that need to be overcome. Nutrition education must also compete with the many other topics covered in a health course in schools, and may be left out or not covered completely in favor of educating children on the risks of alcohol and drug use, for example.

Our report covers all these findings in greater depths and presents a starting point for discussion on the diabetes problem in Trempealeau County, including possible programs and plans which can overcome the above barriers and emphasize the positive actions already occurring in the county.

Addressing Diabetes in Trempealeau County, Wisconsin

by Ben Monty, Leah Wavrunek, and Amy Zeman

In February 2003, we began learning about the health of the residents in Trempealeau County. Through working with local leaders and residents, we were able to identify health concerns and the programs available to address them. One of our primary findings is that the incidence of diabetes in Trempealeau County is higher than in the rest of Wisconsin. After discussions with relevant community members and residents, we gained a better understanding of diabetes and how it has affected this rural county.

Background

Trempealeau County is in western Wisconsin, a primarily rural county nestled between Eau Claire County to the north and La Crosse County to the south. The county encompasses roughly 745 acres, in a long and narrow shape. The 2000 Census reports a county population of 27,010, up 6.9 percent from 1990; this growth rate is slower than Wisconsin as a whole, whose population grew by 9.6 percent over the same period. The average population per square mile is just 37 people. The largest population center in Trempealeau County is Arcadia, with a 2000 population of 2,402. Of the over 27,000 residents of the county, 26,688 are white, 35 are African American, 45 are Native American, 36 Asian, and the rest are listed as Other. The three major national origins of the population in the county are Norwegian (39.9 percent), German (35.8 percent), and Polish (19.9 percent).

According to the Office of Rural Health (a unit in the University of Wisconsin–Madison Medical School), the average age of Trempealeau County residents is increasing. In 2000 the average age of a resident was 38.3, compared with 36.0 for Wisconsin and 33.3 for the United States. The percentage of residents over the age of 65 is 16.4 percent. This is magnified when comparing the number of 10-year-old to 19-year-old residents, which is about 15 percent of the population. About 11 percent of the county is aged 20-29, suggesting a migration out of the county after graduation from high school.

The Local Economy and Health Services

The top three employers in Trempealeau County are Ashley Furniture, Kelsey Hayes, an auto-parts manufacturer, and Gold'n Arc, a poultry processing firm. U.S. Census figures indicate that the number of farms in the county is shrinking, with 1,408 farms in 1997, down from 1,424 farms in 1992. The average annual wage of employees in Trempealeau County for all industries is \$24,791, which is below the Wisconsin average wage of \$30,922. The average wages for all industries, except transportation, communications and utilities, are below the Wisconsin average. The unemployment rate for Trempealeau County is 4.5 percent; 10.3 percent of the population lives in poverty.

Trempealeau County has three hospitals and three ambulance services. Twenty-nine doctors work in the county, with 28 accepting patients using Medicare and 26 accepting patients using Medicaid/BadgerCare. The WIC program in Trempealeau County has 1,160 participants. Nine percent of all county residents are uninsured (compared with 8 percent for the state of Wisconsin).

Trempealeau County Needs Assessment

In 2002, the Trempealeau County Health Department assessed its health needs, an exercise it undertakes about every five years. Their purpose was to determine problem areas and set priorities in the county. The assessment also identified ways to develop a plan to reduce the risk for chronic disease using healthy nutritional and lifestyle choices. To conduct the assessment, the Health Department identified 50 key stakeholders from organizations in Trempealeau County. The organizations included health care facilities, schools, childcare centers, food pantries, fitness centers, supermarkets, media, and the Board of Health. The assessment consisted of interviewing 24 of the stakeholders and having 19 complete a nutrition resource questionnaire.

The opinion survey used in the interviews included questions to determine the health problems of Trempealeau County and the nutrition-related factors contributing to health problems. It also asked questions about suggestions for preventative strategies to reduce health problems, barriers to overcome in implementing strategies, and the organizations that need to be involved. The nutrition resource questionnaire collected information about nutrition resources provided by the organization, the population served, and the cost of the nutritional resources provided.

The results of the assessment identified five priority health problems, which were heart disease, obesity, cancer, poor nutrition, and diabetes. The nutrition-related factors for health problems identified from the assessment were the social value of food, lack of nutrition education, and obesity. Some of the strategies to reduce health problems included making nutritional resources more available, increasing nutrition education, using the media, distributing newsletters, having community programs, organizing focus groups, and emphasizing physical activity. The barriers to implementing these strategies included funding and staffing at the county level, people's inability to change, shortage of time for families and health care professionals, inability to reach the entire population, scarcity of resources, and lack of awareness of resources. The assessment also identified a variety of organizations to be involved in implementing the strategies to reduce health problems. The organizations identified included schools, hospitals, state government agencies, local businesses, media, fitness centers, churches, food pantries, and community members. Table 1 summarizes the results according to the top three responses for each question area.

Because more people are eating on the go, the trend is to consume more convenience foods. Decreases in physical activity also contribute to health problems. Encouragement from health professionals and having resources available about nutrition and healthier lifestyles can help people change their behaviors. In addition, better nutrition and health will help people reduce their risks for chronic diseases.

Table 1 – Results of 2002 Trempealeau County Needs Assessment

Priority Health Problems	Heart disease 13, obesity 12, poor nutrition 8, and cancer 8
Nutrition-related Factors for Health Problems	Increased consumption of convenience foods 11, lack of a balanced diet 11, and lack of physical activity 7
Strategies to Reduce Health Problems	Making nutritional resources more available 14, increasing nutrition education 12, distributing newsletters 6, and using the media 6
Barriers to Strategies	Funding and staffing 11, people's ability to change 10, and time 6

Source: Trempealeau County Health Department

Trempealeau County Compared with the State of Wisconsin

Focusing on the five major health problems identified in needs assessment done by the Trempealeau County Health Department, we were able to compare Trempealeau County with the state of Wisconsin.

Heart Disease

The age-adjusted mortality rate for Trempealeau County between 1996 and 2000 was 183.9 deaths per 1,000. For the western region of Wisconsin, it was 168.4 deaths, and for the state of Wisconsin, it was 166.8 deaths.

Obesity

The prevalence of obesity among children and adolescents has been steadily rising over the past 40 years. Using the body mass index as a measure to determine if a person is overweight, we judged that from 1993 to 1998, approximately 40 percent of Trempealeau County residents were overweight. This compares to 34 percent for the western region of Wisconsin and 31 percent for the state of Wisconsin.

Cancer

Between 1996 and 2000, Trempealeau County's lung cancer mortality rate was 42.3 deaths. This is lower than the western region of Wisconsin and the state of Wisconsin, which had mortality rates of 49.2 deaths and 50.8 deaths, respectively. Deaths from breast cancer ranged from 0 to 8 deaths per year over the last 12 years, an average of 3.8 deaths per year.

Poor Nutrition

Results from the middle school assessment indicated that students who were overweight in middle school were also more likely to have higher blood pressure and cholesterol readings. It also showed that younger students were more inclined to eat breakfast and ate healthier than older students. The Trempealeau County WIC program served an average of 692 clients per month in 2001, which included about 42 percent of the families with children under age 5. In addition, food pantries in the county reported increased use in the last two years, especially in the fall of 2002. Other significant

concerns include the availability of fast foods, lack of knowledge on how to cook healthy, inexpensive meals, and limited food resources, such as information about cooking healthy. Data from the state of Wisconsin and its western region regarding nutrition was unavailable.

Diabetes

Between 1996 and 2000, the mortality rate for diabetes in Trempealeau County was 46.1 deaths. Over the same period, the mortality rate for the western region of Wisconsin was 25.7 deaths and 23.6 deaths for the state of Wisconsin. According to the American Diabetes Association, the estimated number of diagnosed cases of diabetes in Trempealeau County is 1,000, and the estimated number of undiagnosed cases is 520. Table 2 shows the estimated numbers of diagnosed and undiagnosed cases of diabetes in Trempealeau County.

Table 2 – Prevalence of Diabetes in Trempealeau County

Age Category	Population	Estimated Number Diagnosed (%)	Estimated Number Undiagnosed (%)	Total Number (%)
Ages 18-44	9,490	120 (1.3%)	60 (0.6%)	180 (1.9%)
Ages 45-64	6,240	270 (4.3%)	140 (2.2%)	410 (6.6%)
Ages 65+	4,440	610 (13.7%)	320 (7.2%)	930 (20.9%)
All ages adult	20,170	1,000 (5.0%)	520 (2.6%)	1,520 (7.5%)

Source: American Diabetes Association.

Overview of Diabetes and Costs of Diabetes

Diabetes is a disease in which the body does not produce enough insulin, or the body does not properly use its insulin. Insulin is a hormone needed to convert sugar, starches, and other food into energy. Causes of diabetes include genetics and environmental factors, such as poor nutrition and a sedentary lifestyle.

There are three main types of diabetes, Type I, Type II, and gestational diabetes (diabetes in pregnant women). Type I affects 5-10 percent of all those with diabetes, while the remaining 90-95 percent suffer from Type II diabetes. Type II diabetes results from the body improperly using insulin, combined with relative insulin deficiency. If diabetes is not controlled, glucose and fats remain in the blood and over time damage vital organs. Besides living with the disease itself, people with diabetes can also suffer from serious complications. These include eye disease and blindness, kidney disease, amputations, and cardiovascular disease.

Approximately 17 million Americans suffer from this disease, which is about 6.2 percent of the population, but only 11.1 million have actually been diagnosed while 5.9 million are unaware they have diabetes. This means about one-third of all who have the disease do not know they have it. Diabetes is the sixth leading cause of death in America, affecting all populations, but especially the elderly and certain racial and ethnic groups.

The costs of diabetes include the expense of hospital visits, lost workdays, and pain and suffering itself. According to the American Diabetes Association, the average

health care cost for a person with diabetes in 1997 was \$10,071, compared with \$2,699 for a person without diabetes. In the United States, diabetes costs an estimated \$132 billion in medical expenditures and lost productivity. Seventy percent of this total, or \$92 billion, is for health care expenditures while the remaining 30 percent, or \$40 billion, is a result of lost productivity.¹ Those with diabetes aged 65 and older incurred approximately 52 percent of these expenses. This is because the prevalence of Type II diabetes increases with age, so older populations incur more expenses.

Wisconsin is also affected by these concerns as its percentage of citizens with diabetes increases. In 2000, the state Department of Health and Family Services estimated 327,000 adults had diabetes. Approximately 18 percent of Wisconsin residents aged 65 and older had diabetes. In 2000, 78,790 hospitalizations were diabetes-related, with hospital charges totaling about \$1.03 billion.

Looking at Trempealeau County, we see that approximately 8 percent of its population had diabetes in the year 2000, or 1,520 of its 20,170 residents. The age group with the largest percentage of diabetes was the senior population (65+), who represented 21 percent of those with diabetes, both diagnosed and undiagnosed. The American Diabetes Association found the burden of diabetes for Trempealeau County to be very high, with direct costs of diabetes at \$5.9 million and indirect costs at \$7.2 million, with a total cost of approximately \$13.1 million. In 2000 about 400 hospitalizations in the county were diabetes-related, costing approximately \$4.4 million. These are very large numbers for a predominantly rural county with a low population.

As the costs of diabetes continue to rise, prevention must become a priority. An alarming increase in diagnosis of diabetes is among teens and children, who can get Type II diabetes as young as age four. This form of diabetes occurs in children who are overweight, have a family history of Type II diabetes, or are a member of particular racial or ethnic groups (African American, Hispanic/Latino, and Native American). Activity, or lack thereof, also contributes to a person's risk for developing the disease. A recent report in the *Journal of the American Medical Association*, cited by the American Diabetes Association, found that every day in which a child spent watching two hours of television was associated with a 14 percent increase in the risk of diabetes and a 23 percent increase in obesity.² The report recommends a minimum 30-minute brisk walk, five days a week, to reduce this risk.

The American Diabetes Association suggests the following actions for communities to take to reduce the risk of diabetes:

- Ask restaurants, school lunch programs, vending companies, and work cafeterias to offer healthy food choices. Work with grocery stores and markets to increase fruit and vegetable consumption.
- Promote programs to expand community physical activity opportunities (for example, new biking or walking paths or opening school gyms and pools for community use).

¹ "Economic Costs of Diabetes in the U.S. in 2002," *Diabetes Care*, Volume 26, Number 3, March 2003, provided on the American Diabetes Association website, www.diabetes.org.

² "Too Much TV Ups Diabetes Risk," American Diabetes Association, published 04-08-2003 and downloaded from their website www.diabetes.org on 04-12-2003.

- Encourage all persons to know the risk factors for developing diabetes.
- Participate and encourage others to take part in diabetes awareness and community events.

Student Surveys

We spoke with four high school students at Arcadia High School and 30 sixth grade students at Osseo-Fairchild Middle School. In this group of students, 22 (65 percent) knew at least one person with diabetes. Twelve of the 22 students knew someone under 30 years of age with the disease. We asked the students if they know any risk factors for type II diabetes and who they think gets the disease. Only nine students knew a risk factor for diabetes. The most common answers were related to eating poorly, and a few students thought that diabetes resulted from some problem with a person's blood. When asked who gets diabetes, twenty students responded. The most common answers were people who have a problem with sugar, either that they eat too much of it or their body has a problem with it. The second most common answer was that the elderly get diabetes, although three students said that anyone can get it, and three said that people who eat poorly get diabetes.

We also tried to get the students to explain what activities relating to physical activity and nutrition they would like to get involved in. The high school students mentioned summer activities as well as park and recreation activities. One student felt that he was very busy with his present level of after-school involvement in sports and a part-time weekend job. He didn't think that he would want to be involved in much more. Another student mentioned that she would be interested in teen dances. The students also mentioned that many athletic coaches now hand out nutrition information to their athletes to help them maintain their energy and health.

The sixth grade students showed very high levels of motivation and interest in any opportunity to be more physically active after school, on the weekends, and in the summer. It would seem that this age group is a great target for physical activity programs, but we must keep in mind that with Trempealeau County being sparsely populated, any organized activities for these kids require transportation. One teacher also pointed out that the Osseo-Fairchild School District draws students from other counties, so if Trempealeau County were to organize and fund activities for these kids, they may have interested participants from the other counties. We also inquired if they would participate in family-style physical activity. Many students felt that everyone in their families was very busy, although some already did do things like walk or bike with parents or siblings.

It seems to us that the high school age students are an important target group because they are already making many diet and activity choices for themselves and are on the verge of taking on this responsibility as they are nearing adulthood. They also may be a very busy group of people who may not yet realize that their present decisions could be putting them at risk for future health problems. The younger, middle school students are also a great population to target because of their energy and enthusiasm. They are also important because most parents of these students are still very involved in making diet and activity choices for them. Programs targeting the families of these younger children

may be successful if the youth are very excited to be involved and the parents can learn more about the risks of poor diets and sedentary lives to the health of their children.

Community Interviews

In order to get a better sense of the food delivery systems and nutrition perceptions in the county, we had phone conversations and personal interviews with a number of Trempealeau County residents and those working in the county. The following is a list of those with whom we spoke:

- Dave Clipper, owner, Clipper's IGA, Whitehall and Blair
- Julie Seguin, Eleva-Strum School District Breakfast and Lunch Programs
- Joanne Abrahamson, Trempealeau County Senior Services
- Marjorie Kube, Arcadia Food Pantry
- Cyndy Jacoby, UW-Extension Trempealeau County, Family Living Agent
- Mike Sobotta, Arcadia High School Health Teacher

Trempealeau County Consumption Trends

Over the last 11 years, Dave Clipper has witnessed that people's preferences have changed in some of his stores' departments. For instance, people currently prefer to have much more fat trimmed off their red meat than they used to. There has also been a rise in demand for boneless, skinless chicken breasts. Produce sales have increased. Clipper attributes this to the rise in elderly residents in the area and the fact that they are more interested than young people in healthy eating.

On the other hand, Joanne Abrahamson and Cyndy Jacoby have witnessed some hesitation in the older population of the county in accepting newer diet trends. Abrahamson has found that many seniors are comfortable with a more traditional diet of meat and potatoes and have a hard time accepting instruction on a healthier diet. However, she says, those with health problems tend to be more open to nutrition assistance. Jacoby feels that many people prefer heartier meals that include meat, potatoes, and whole milk. The desire of older residents to remain loyal to farmers could also be contributing to these food choices. Cyndy points out that many adults did not grow up with "lite" and "low-fat" choices, so they are less likely to incorporate these products into their diets now. She hopes that in 10 years or so this will change as today's teenagers start to become the heads of households.

Although Clipper's IGA stores provide full service and home deliveries to the elderly as well as funding for elderly bus service to the store, Clipper is still aware of the changing business climate. He identified local Kwik Trips and discount stores such as Wal-Mart and Target as competition, as well as larger grocery stores such as Festival Foods and Woodman's in Onalaska.

Examples of Nutrition and Activity Services.

Trempealeau County Senior Services provides home delivered meals, benefit resources, and transportation services to elderly residents. Joanne Abrahamson conducts

nutrition risk assessments for seniors to determine their nutritional needs. She also educates seniors on their nutrition status. The county does not provide a dietician to do home visits with these seniors, but the county does provide an exercise program for seniors, which is broadcast on public television.

Between 300 and 400 seniors participate in the nutrition programs. The county has 18 meal sites and delivers meals according to state nutrition policy eligibility. Diabetes is prevalent among the participants, and understanding and dealing with the implications of the diagnosis is a challenge.

The nutrition program attempts to communicate nutrition information to participants. UW-Extension in Trempealeau County has a nutritionist who prepares samples and recipes at WIC and elderly meal sites. It is a bigger challenge to provide nutrition education to those who receive home-delivered meals.

In addition to a nutritionist at senior meal sites, the county's UW-Extension office provides programming that includes the Wisconsin Nutrition Education Program, which is targeted toward low-income residents and is supported by federal money. Cyndy Jacoby also works with the Head Start program and with "Walk, Dance, Play" a program for both kids and seniors. This last program tries to increase physical activity slowly in coordination with physician consultations. It attempts to present ideas as to why activity is so important. Jacoby also provides general nutrition information through local media outlets such as newspapers, television, and radio. She is currently working on a workshop with a local bank that presents ideas for cooking meals for two seniors. She has found that these "co-sponsored" programs generally are more successful and draw better audiences than those that she organizes with no other support.

Clipper's IGA stores provide nutrition information in their produce departments in the form of fliers from the produce suppliers. They have also had cooking demonstrations in the stores, but not very often. Clipper is open to having more of these demonstrations.

Trempealeau County has nine school districts that each provides its own food service. We spoke with Julie Seguin at the Eleva-Strum School District to get an impression of the food services provided to local youth. Her school district serves breakfast to approximately 200 of its 600 students. She also stated that the school does have vending machines on the premises. These include an FFA-sponsored machine that vends granola bars, an orange juice machine, a milk machine, one pop machine, and a fruit juice and water machine. These are turned off during the lunch hours. The lunchrooms provide bulletin board strips for posters that have nutrition information. In addition, the meal programs do not add extra sugar or salt to the food, leaving that option to the students. The school meal program also hosts special nutrition promotions where attendees can enter drawings to win prizes. Nutrition education takes place within the fourth-grade curriculum.

Mike Sobotta stated that freshmen at Arcadia High School are required to take one-half of a semester of health and that they have the option of taking an advance health course as a senior. The junior high school also requires the students to take a course on human growth and development. High school students are also required to take a semester of physical education as freshmen and sophomores. He added that it is hard to

balance nutrition education with all of the other information that can be taught in a health class.

The Arcadia Food Pantry is located beneath the local health clinic and has operated for over 20 years. The pantry accepts and offers a wide variety of food choices, although Marjorie would like to receive more donations of canned vegetables. She does, however, accept monetary donations, and she is able to use these to purchase groceries to fill any food group deficits in the pantry. The pantry is open by appointment and on certain other days. On the set distribution days, she estimates that about 150 households visit the pantry. The staff of the pantry consists of volunteers with assistance from someone at the courthouse.

Barriers to Healthier Lifestyle Choices.

Funding is a challenge to operating public nutrition programs. Jacoby does not feel that charging for the programs is a likely means of solving this problem, since requiring payment would likely eliminate those who need the programs most. In the past, she has worked with local grocery stores to provide information and cooking demonstrations, but the federal funding no longer allows for in-kind contribution from private enterprises.

Another challenge is finding an appropriate time to hold programs in order to fit the schedules of participants, presenters, and co-sponsors. She has found that the best way to attract an audience is to organize the nutrition presentation around an activity that is already going on.

With regards to the younger population, Sobotta explains that his students find nutrition information to be boring. He adds that as a school is faced with the obvious problems of drugs, alcohol, tobacco, and teenage pregnancy, how do you prioritize nutrition information and diseases like diabetes within the time limitations of a freshmen health class?

As we have stated, both Joanne Abrahamson and Cyndy Jacoby have found that the local culture could be hindering people from leading healthier lives. A reliance on traditional, hearty meals as well as a desire to support local agriculture, is dominating the food choices of local residents. This cultural factor is a hurdle that local nutrition programs must overcome in order to improve the diets of residents.

With respect to increased physical activity, Jacoby points out that local farmers and factory line workers need to be more aware of their level of physical activity. While they may feel like they exert themselves throughout the day, they often do not get the necessary amount of exercise because they don't realize that their activities do not provide the type of movement that they need to improve their health. Additionally, while many of the public health programs are targeted to the elderly or less affluent population, the wealthy, comfortable residents of the county tend to lead the more sedentary lifestyles.

Public Health Fair

On April 9, 2003, we attended a health fair in Whitehall. Attending the fair gave us an opportunity to speak one on one with visitors to the fair about health concerns and

diabetes. We also spoke with some of the people who were operating booths at the fair. The booth sponsors included local ambulance services, local medical centers, AARP, UW-Extension, Trempealeau County Health Department, and volunteer associations, among others.

Most of the residents we spoke with knew someone who had diabetes or someone who had passed away because of the disease. Overall, the people we spoke with were aware of the risk factors for developing Type II diabetes. Each of those interviewed indicated that exercise and proper nutrition were important to avoid developing the disease. The residents we spoke with were from Whitehall, Pigeon Falls, and Independence, and their ages ranged from 39 to 74.

When asked about willingness to participate in a countywide program to improve physical activity and diets to decrease the risk of developing Type II diabetes, the residents we spoke with expressed interest in participating, depending on how often the program would meet and where it would be located. Some of the residents thought a program that was centrally located in the county would work well, while some residents felt that community programs throughout the county would be better. One resident stressed the need for education regarding prevention so residents could implement their own strategies and lifestyle changes to avoid developing Type II diabetes.

In conversations with people operating booths at the fair, we were able to learn about how diabetes has affected the health care industry. We also received a variety of responses to our request for what they believed were the top three health issues in Trempealeau County. Answers included multiple sclerosis, obesity, poor mental health, cancer, arthritis, heart disease, diabetes, and improper nutrition. Diabetes was the most common response. Health care providers who worked with the elderly indicated a prevalence of diabetes anywhere from just over half of their clients to as high as eighty percent.

We also asked the people operating booths about which types of programs and policies they thought would be successful for encouraging people to improve their diets and increase their physical activity in order to decrease the risk of developing Type II diabetes. The following is a list of their responses and ideas:

- Include articles in newspapers about diabetes
- Provide screenings for diabetes at events people are most likely to attend, such as pancake breakfasts and community fairs
- Promote programs that involve both children and adults
- Use the schools as a way to get information about diabetes into homes
- Coordinate diabetes education and prevention program through work sites
- Start education about diabetes at a young age
- Address diets through school system
- Use hospitals as reference centers for information about diabetes and support groups for diabetic residents

Conclusion

The mortality rate for diabetes in Trempealeau County is almost twice the rate for the state of Wisconsin as a whole. It is important for the county to address this problem, not just to protect the health of residents but also to curb the burden of the rising costs of the disease. For this case study, we collected information about the disease in Trempealeau County and interviewed a variety of residents to gain a better understanding of the problem. In addition, we tried to collect information that could help the county create programs to address diabetes in the county, programs that will be both utilized and sustainable.

Many conclusions can be drawn from this information regarding both the possible target groups for healthy lifestyle programs and the types of programs that would be effective for each group.

Younger children (junior high and elementary age) are an important target group because they are highly motivated to get involved in activities. Additionally, parents need to transport these kids to activities, so programs that involve both youth and parents may be more effective when they are targeted to catch the interest of younger children. Because families tend to be very busy, however, the timing and placement of these programs could cause problems. It could be that organizing programs around school functions and facilities as well as disseminating information through schools will catch the attention of more students than just advertising through local media. Also, working with the schools can help with scheduling as the county can identify activities that may be attracting families to school locations, but can also ensure that they are not trying to schedule during popular school activities.

There is also some consensus that the high school population is an important target as they are making more choices for themselves and are on the verge of being the heads of households. This population is also very busy and active. They are less likely than older residents, however, to be concerned about the health implications of their lifestyles than older residents. Local teachers and school administrators could be a good source of information regarding the interests of the students and also may have ideas on ways to attract them to local health and fitness programming.

The elderly population is an effective target as the health implications of poor lifestyle choices are more apparent to them than some of the younger populations. They already have a lot of the county's programming targeted toward them. All target groups mentioned above could present a common obstacle: resistance to change. However, as the prevalence of diabetes increases, so too does the attention paid to this disease. Trempealeau County can work to combat the spread of Type II diabetes, as its residents realize this is a problem that affects everyone, regardless of age, sex, or economic status.