

COMMUNITY HEALTH NEEDS ASSESSMENT

***Bellin Memorial Hospital, Inc.
Cancer Committee***

***February 12, 2015
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bellinhealth

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Purpose

The purpose of this assessment is to identify the cancer-related needs of the patients within our service area. We will be specifically looking at the cancer-health disparities, gaps in cancer related resources within the service area and services being introduced to meet the identified needs. Identifying the gaps in resources within our service area will ensure that Bellin continues to provide comprehensive healthcare services that are based on actual needs of the patients that come to Bellin for their healthcare.

Goal

The vision of Bellin Health is that the people in our region will be the healthiest in the nation, resulting in improved vitality and economic well-being in the communities we serve.

The goal of this assessment is:

1. To report to Bellin's Cancer Committee on the information gathered during a secondary data analysis regarding cancer-health related statistics within Bellin's service area in comparison to the state of Wisconsin cancer-health statistics,
2. To identify primary cancer-health related disparities within Bellin's service area in comparison to the state of Wisconsin cancer-health statistics,
3. Use this information to support the implementation of community outreach programs and services to improve the quality of lives and decrease cancer related mortality rates within the service areas.

Methods

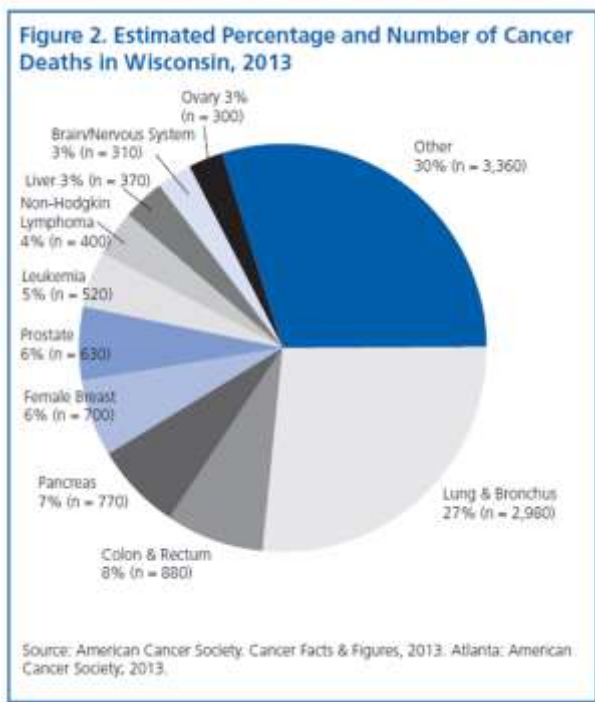
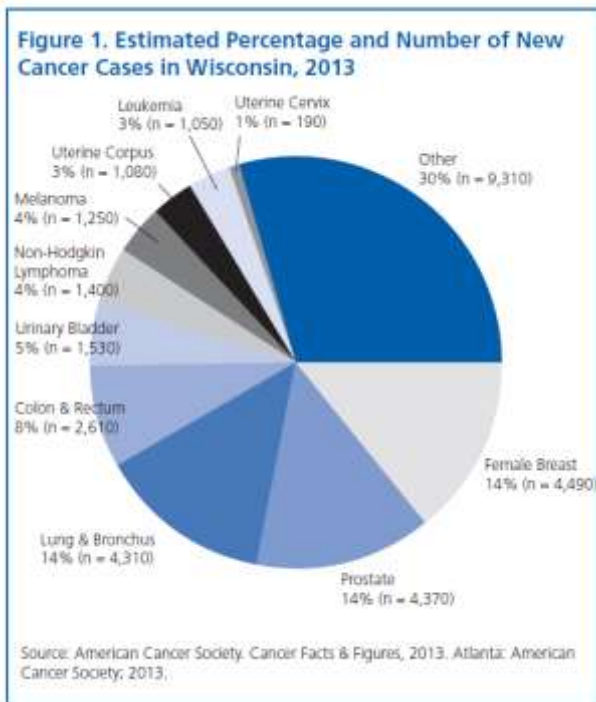
The cancer committee has chosen secondary data analysis as the tool for this assessment. Data gathered for this report includes information from the needs assessments completed for Brown, Oconto and Marinette counties, the Wisconsin Cancer Registry, Bellin Cancer Registry, Bellin staff and patient observations, and the American Cancer Society.

Introduction

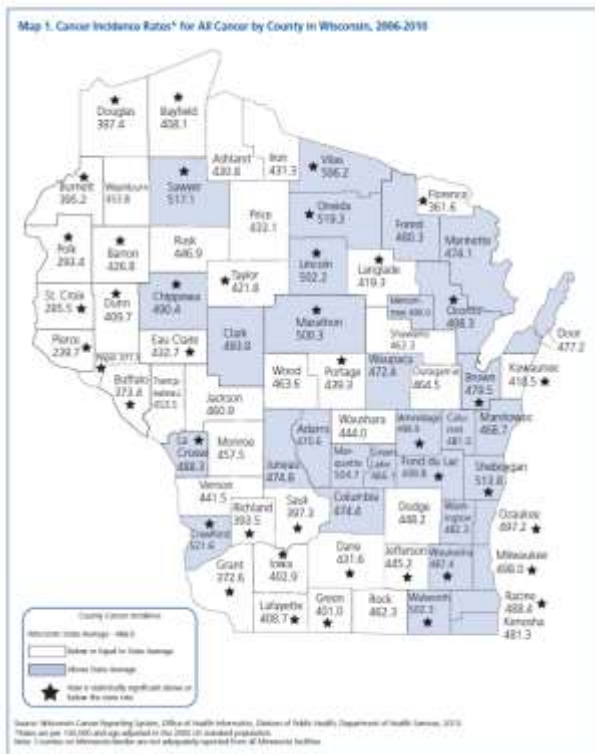
Community Outreach has been one of the most important services provided within the Bellin Healthcare System. The healthcare system supports community health through health education, screening and intervention. Last year, community outreach efforts included approximately 12,000 breast cancer screening mammograms at 2 locations Bellin Health and Bellin Health Oconto Falls.

The Bellin Cancer TEAM was opened in 2009 in response to the growing number of malignant diagnosis being made. The primary focus has been developing a comprehensive program that meets the needs of cancer patients during treatment as well as during survivorship. Identifying those needs lead to the continued growth and expansion of the Cancer TEAM services. There are more than 1,000 patients under treatment at the Cancer TEAM annually.

In Wisconsin, the number of new cancer diagnosis continues to rise annually. Mortality rates related to cancer have risen in turn. Figure 1 demonstrates the estimated percentage and number of new cancer cases in Wisconsin, in 2013. Figure 2 is the estimated percentage and number of cancer deaths in Wisconsin for 2013.



Upon further evaluation, the breakdown of cancer diagnosis per county showed more interesting information pertaining to the three counties that are home to the majority of Bellin's patients. Map 1 shows the cancer incidence rates for all cancer by county in Wisconsin, from 2006-2010. The cancer mortality rates for all cancer by county in Wisconsin, from 2006-2010 is depicted in Map 2.



Brown, Oconto and Marinette counties are the primary focus of this assessment as review of Bellin's patient demographics confirm that the majority served reside within one of these three counties. Table A below specifically focuses on the data from these three counties with regards to cancer incidence, total number of cases and averaged-annual age-adjusted rates by county, from 2006-2013.

Table A: Cancer Incidence, Total Number of Cases and Averaged-Annual Age-Adjusted Rates by County, 2006-2010

County	Statistic	All Sites	Colon & Rectum	Lung & Bronchus	Prostate	Female Breast
Brown	Cases	5,797	503	690	801	838
	Rate (95% CI)	479.5 (467.1 - 492.2)	41.7 (38.1 - 45.6)	58.4 (54.1 - 63.0)	141.0 (131.2 - 151.1)	128.0 (119.3 - 137.1)
Oconto	Cases	1,164	107	172	178	124
	Rate (95% CI)	498.3 (469.6 - 528.4)	45.8 (37.4 - 55.6)	71.9 (61.4 - 83.7)	142.1 (121.7 - 165.3)	104.2 (86.4 - 124.9)
Marinette	Cases	1,396	108	197	234	176
	Rate (95% CI)	474.1 (448.8 - 500.6)	34.6 (28.3 - 42.2)	65.7 (56.7 - 75.9)	157.9 (138.1 - 180.1)	119.8 (102.0 - 140.1)

Service Area

Bellin Health covers a large service area within Northeastern Wisconsin. For purposes of this assessment, we will focus our attention on the counties of Brown, Oconto and Marinette as these are the locations with our highest patient populations.

The Bellin Registrar provided information regarding Bellin’s cancer diagnosis by site from 2008 through June of 2014 across Bellin’s service area. Figure 1 below indicates the cancer diagnosis in order of prevalence within the Bellin system. What was found is that Breast Cancer, Prostate Cancer, Lung Cancer and Colo/rectal Cancer are the top 4 cancer diagnoses seen within the Bellin Healthcare system.

Figure 1

BELLIN ANALYTIC TOP SITE TABULATION

SITE	2008	2009	2010	2011	2012	2013	2014 Thru 06/30/14
BREAST	126	117	102	148	91	112	72
PROSTATE	127	116	125	84	70	77	35
LUNG	69	88	70	90	92	93	52
COLO/RECTAL	60	51	42	43	63	58	20
CORPUS UTERI	9	10	11	19	14	47	17
ALL OTHER FEMALE GYN	7	6	8	8	6	26	15
BLOOD/ BONE MARROW	14	35	39	34	44	45	18
KIDNEY	21	26	31	32	32	30	12
NON-HOD/ HODGKINS	23/ 5	21/ 2	32/ 2	28/ 3	27/ 3	16/ 4	12/ 1
BLADDER	28	16	20	25	34	30	15
MELANOMA	22	20	26	16	24	14	2
THYROID	27	15	18	18	23	34	9
PANCREAS	9	13	10	15	19	15	16
BRAIN MALIG/NON-MALIG	8 4/4	29 14/15	24 7/16	17 8/9	9 1/8	23 6/17	5 3/2
ANALYTIC CASE TOTALS	634	633	634	664	628	706	340
TOTAL YEAR CASE TOTALS	681	686	663	720	689	756	340

01/09/15

ANALYTIC CASE = ALL OR PART OF FIRST COURSE OF TREATMENT WAS DONE AT BELLIN

Brown County

Overview

Brown County has a population of over 245,000 residents, making it the 4th largest county in the state of Wisconsin. The racial makeup of the county is 89.3% White, 2.5% Black or African American, 3.1% Native American 3% Asian, 0.1% Pacific Islander, 2.1% from two or more races.

Bellin Memorial Hospital is located in the heart of Brown County, in the City of Green Bay, Wisconsin. Bellin is one of 4 major hospitals in Brown County and provides comprehensive healthcare services and outreach within Brown County.

Risk Factors for Cancer Diagnosis

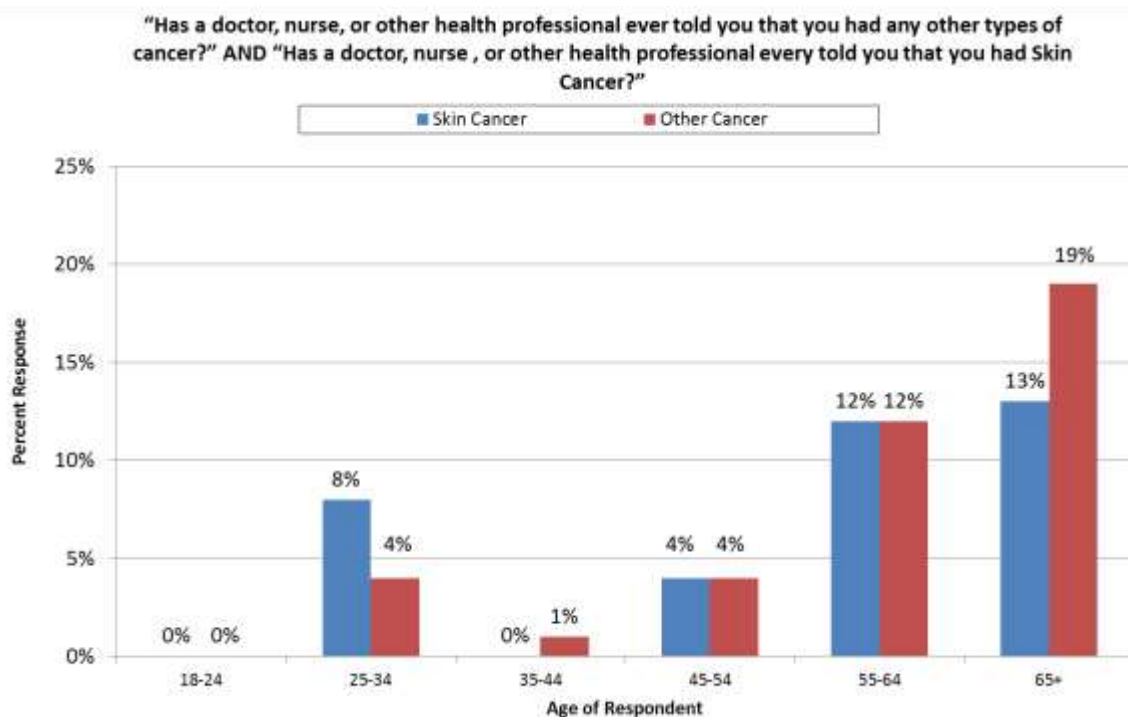
Age

The rate of cancer diagnosis in Brown County is equivalent to the state rate of 6% annually. The majority of Brown County residence report not being diagnosed with Skin or any other type of cancer. Age is the only statistically significant variable for cancer incidence. With the exception of ages 25-34, skin cancer and other types of cancer are more prevalent in older respondents. Twelve percent (12%) of ages 55-64 reported a diagnosis of either skin cancer or another type of cancer. Furthermore, ages 65 and older had the highest prevalence of skin cancer (13%) and other types of cancer (19%). Among ages 25-34, 8% reported being diagnosed with skin cancer, and 4% reported a positive diagnosis of some other form of cancer. Again, these facts are consistent with the states rate for cancer incidents with regards to age.

According to the National Cancer Institute, based on solid evidence, female sex and increasing age are the major risk factors for the development of breast cancer. [11] Further analysis of that statement shows the magnitude of effect indicating women have a lifetime risk of developing breast cancer that is approximately 100 times the risk for men. The short-term risk of breast cancer in a 70-year-old woman is about ten times that of a 30-year-old woman. [11] Additionally, the National Cancer Institute has suggested that advancing age in men increases the risk of developing prostate cancer. [11] Figure 2 below is a chart showing this data.

Figure 2

Cancer Prevalence and Age



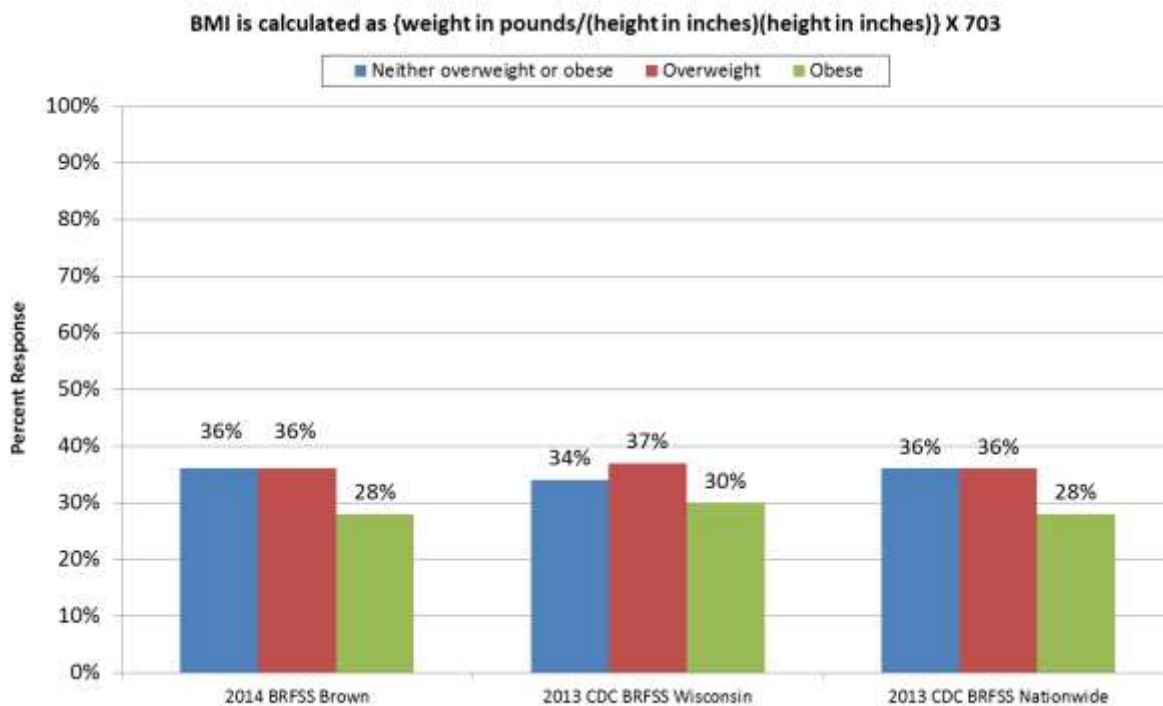
Weight

The National Cancer Institute indicates that obesity is associated with an increased breast cancer risk in postmenopausal women who have not used HT. It is uncertain whether weight reduction decreases the risk of breast cancer in obese women. The Women's Health Initiative observational study of 85,917 postmenopausal women found body weight to be associated with breast cancer. Comparing women weighing more than 82.2 kg with those weighing less than 58.7 kg, the RR was 2.85 (95% confidence interval. [11]. Furthermore, poor diet plays a role in increasing the risk of developing prostate cancer in men. [11]

According to the Brown County Behavioral Risk Factor Surveillance System Survey 2014, Brown county's population has equivalent BMI rates as those nationwide, however the rates are slightly more improved than those of the state of Wisconsin. Figure 3 below shows the information depicting Brown County rates compared to the state of Wisconsin as well as Nationwide.

Figure 3

Body Mass Index



Current Smoking Habits

Tobacco smoking is the biggest risk factor for lung cancer and accounts for 85 out of 100 people diagnosed with lung cancer dying, [4]. Smoking is also a significant risk factor for colo/rectal cancers according to the National Cancer Institute [11]. The majority (88%) of Brown County does not currently smoke cigarettes. Of the 12% who do, 8% smoking every day and 4% only smoke some days. [2]

Over half (58%) of smokers in Brown County reportedly stopped smoking during the past 12 month's, in an attempt to quit smoking. It is uncertain the methodology used, but these attempts suggests a desire to quit blocked by the existence of a barrier or lack of support. Current smoking is generally higher in households with lower annual incomes. Twenty-two percent (22%) of \$10,000 to less than \$15,000 smoke everyday compared to 3% of household income of \$75,000 or more. [2]

Education is statistically significant for smoking behaviors. As education increases, the prevalence of current smoking decreases. Therefore, respondents with some high school education or less has the lowest percentage of non-smokers (78%) compared to 80% high school diploma/GED, 86% some college or tech school, and 97% college graduate or higher. [2] The majority (99%) of Brown County does not currently use chewing tobacco, snuff or any other type of smokeless tobacco. [2] Figures 4 and 5 below demonstrate this data.

Figure 4

Current Smoking

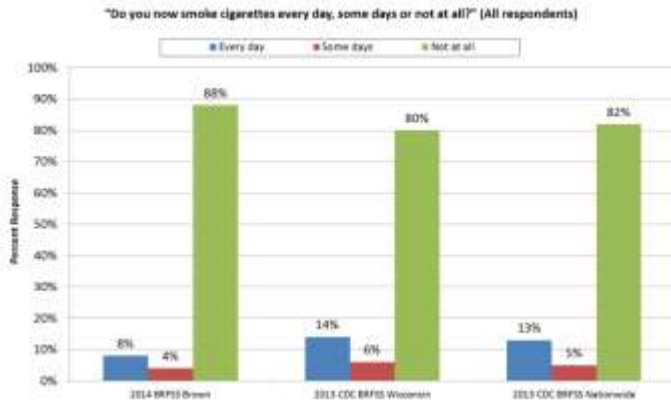
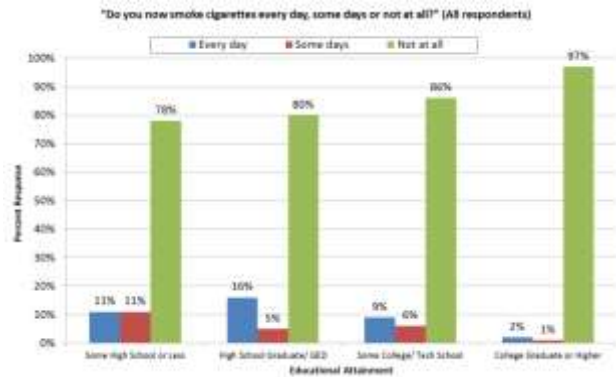


Figure 5

Current Smoking and Education



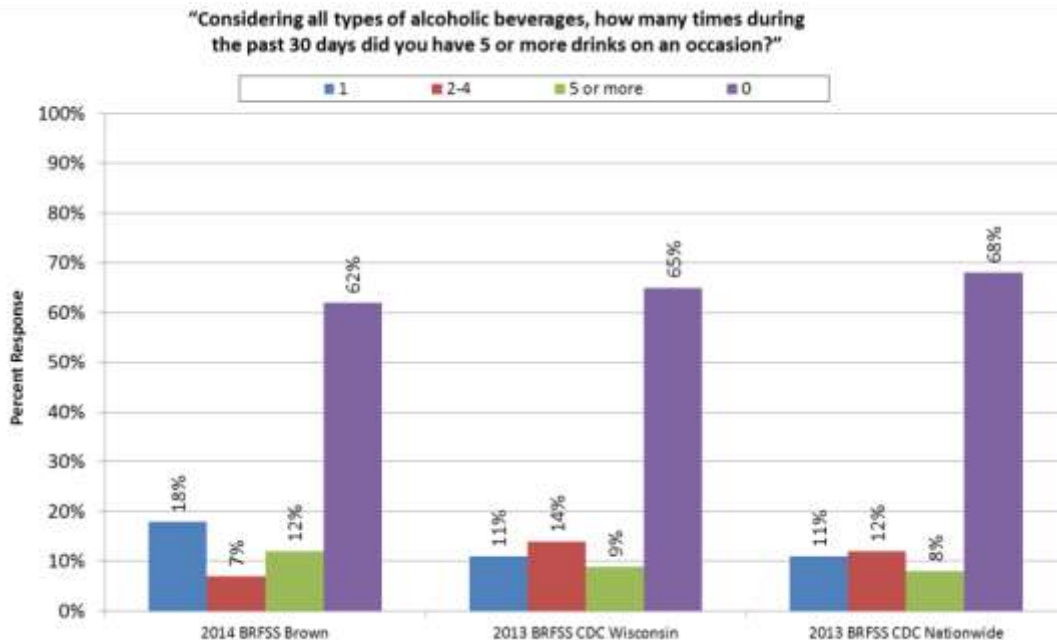
Alcohol Consumption

According to the National Comprehensive Cancer Institute, colorectal cancer is the fourth most common form of cancer in both men and women in the United States, and heavy alcohol use can lead to an increased risk of developing colorectal cancer, (NCCN).

Based on the information gathered from the Behavioral Risk Factor Surveillance System Survey that was conducted in 2014, the majority of Brown County indicated having One (32%) or Two (32%) drinks on average on the days they consumed alcohol. Thirteen percent (13%) drank Three alcoholic beverages, 9% Four, and 14% had 5 or more. The highest consumers of an average 5 or More alcoholic drinks are ages 18-24 (59%). Conversely, none (0%) of age 65 and Older consume an average of 5 or More drinks. Body Mass Index is statistically significant for average alcohol consumption. Half (50%) of Neither Overweight or Obese consume on average One alcoholic beverage, compared to only 22% Overweight and 21% Obese, indicating a higher level of drinking for these cohorts. [2]. See figure 6 below.

Figure 6

Alcohol – 5 or More Drinks



Screenings

Research conducted by the National Cancer Institute suggests that early detection of all four of the most prevalent cancers is critical in decreasing the rate of cancer related deaths. Screening tests that are commonly used are physical exam and health history, genetic testing, imaging and lab tests, [1]. The use of Mammograms, Colonoscopy/sigmoidoscopy, calcium heart scoring, chest X-Rays and digital prostate exams including PSA lab tests are the tests recommended for the early detection of the top four cancers this report - Breast Cancer, Lung Cancer, Colorectal Cancer and Prostate Cancer.

Based on the data reported in the Brown County Behavioral Risk Factor Surveillance System Survey, the majority (69%) of women have had a mammogram to screen for breast cancer. As previously indicated, age is statistically significant for women who have completed a mammogram. As age increases, so too does the percent of respondents who have had a mammogram (0% ages 18-24, 18% ages 25-34, 59% ages 35-44, 96% ages 45-54, 97% ages 55-64, and 98% ages 65 and older). Only 25% of those with an income of less than \$10,000 have had a mammogram, while the majority of women across all other incomes (\$10,000 or higher) indicated they have had a mammogram. This suggests that there may be a financial barrier to mammogram testing.

The majority of women from Brown County who have had a mammogram reported their last mammogram to have been within the past year (71%) whereas 15% occurred with the past two years. No demographic variables reported statistically significant for when last mammogram was conducted. Figures 7 and 8 below represent this data.

Figure 7

Mammogram Test

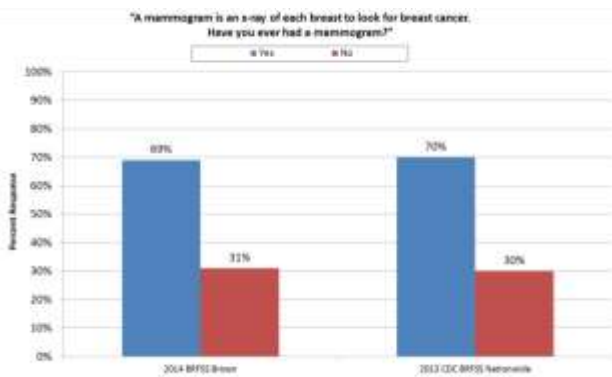
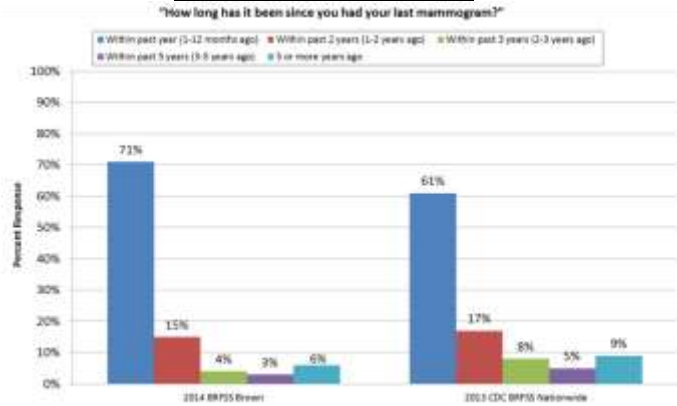


Figure 8

Last Mammogram

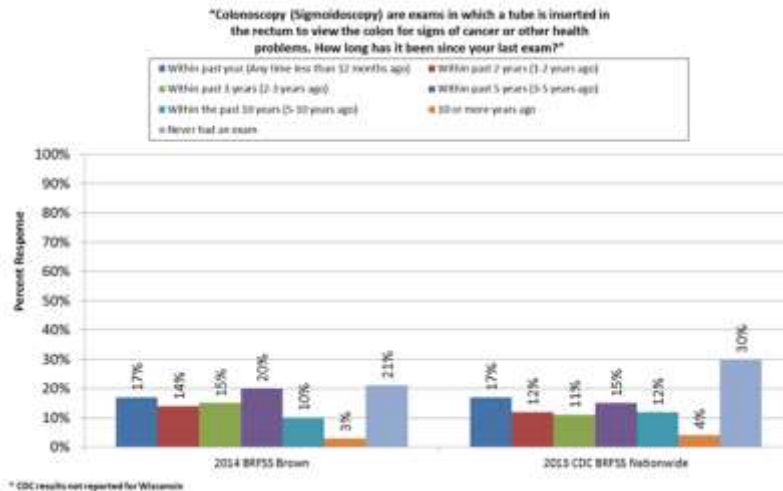


Respondents age 50 or older were the only respondents asked how long it has been since their last colonoscopy (sigmoidoscopy) exam. Twenty percent (21%) indicated never having had a colonoscopy exam to screen for cancer or other health problems. Of the 79% who have undergone a colonoscopy exam, 17% have had one within the past year, 14% within the past two years, 15% within the past 3 years, 10% within the past 5 years, 3% within the past 10 years, and 3% had a colonoscopy more than 10 years ago.

Demographic variables were statistically significant for respondents having a colonoscopy exam. See Fig. 9 below.

Figure 9

Colonoscopy/Sigmoidoscopy



Oconto County

Overview

Oconto County has a population of over 37,318 residents and has 1,149 square miles of primarily rural and agricultural land. Oconto County is among the poorest counties in Wisconsin. The racial makeup of the county is 97.76% White, 0.13% Black or African American, 0.78% Native American, 0.20% Asian, 0.01% Pacific Islander, 0.24% from other races, and 0.88% from two or more races, according to the 2013 census.

Bellin Health recently extended their oncology services to the Bellin Health Oconto Hospital in an effort to enable patients in the northern rural communities' better access to specialty care and services. Travel to receive cancer treatments was seen as a barrier to care. Oncology services include physician visits, labs, screening and diagnostic imaging and infusion services. Patients also have access to Cancer Fitness services at the Bond Center, including water therapy for neuropathy as well as Dietician services through Telemed.

Based on the information gathered from the Community Cancer Profile for Oconto County, completed in 2013, Cancer is the leading cause of death in Oconto County. The rate of Cancer Diagnosis is higher than that of the state of Wisconsin; subsequently the rate of Cancer Deaths surpasses the State Rate. Figures 10 and 11 below depict these disparities.

Figure 10 **Rate of Cancer Diagnosis**

	Oconto County	State of WI
All Cancers	491	471
Colorectal	45	44
Lung	74	63
Breast	105	124
Prostate	160	149

Figure 11 **Rate of Cancer Deaths**

	Oconto County	State of WI
All Cancers	176	177
Colorectal	15	15
Lung	52	47
Breast	24	22
Prostate	33	25

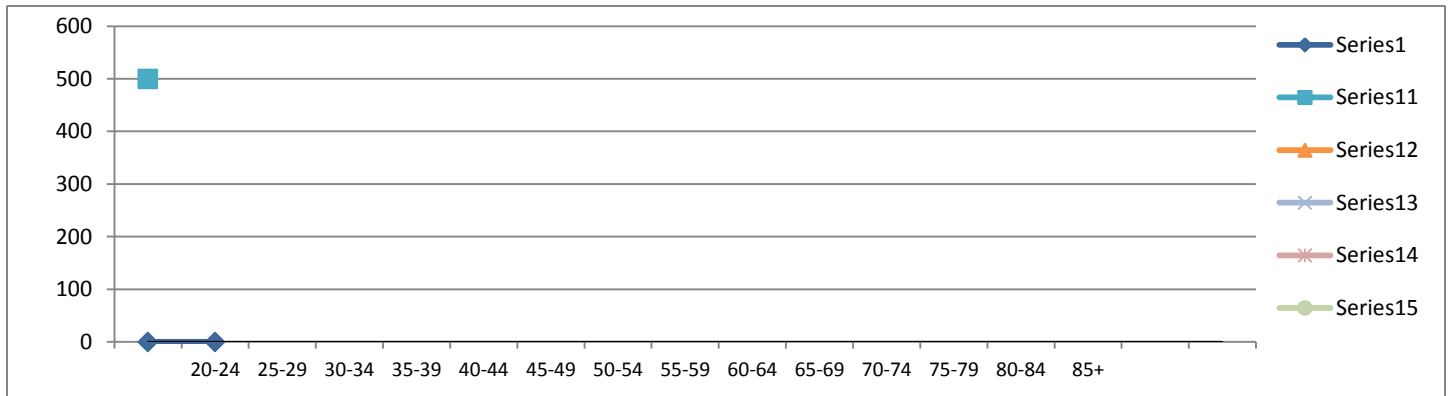
Risk Factors for Cancer Diagnosis

Age

The rate of cancer diagnosis in Oconto County (491 diagnosed annually) is higher than the state rate (471 diagnosed annually) [3]. Between the years of 2002-2006, approximately 3,800 women were diagnosed with breast cancer in the state of Wisconsin. As previously indicated, as a woman ages, the risk of have a breast cancer diagnosis increases. Women ages 65-69 are 7 times more likely to develop breast cancer than women in their thirties. Breast cancer was the second leading cause of death in the state of Wisconsin, after Lung cancer in 2002-2006, and the age group of women with the highest rate of diagnosis was 75-79 years of age. The figure below shows Female Breast Cancer, Age Specific Incidents for the State of Wisconsin [8]

Figure 12

Female Breast Cancer, Age Specific Incidents Wisconsin 2002

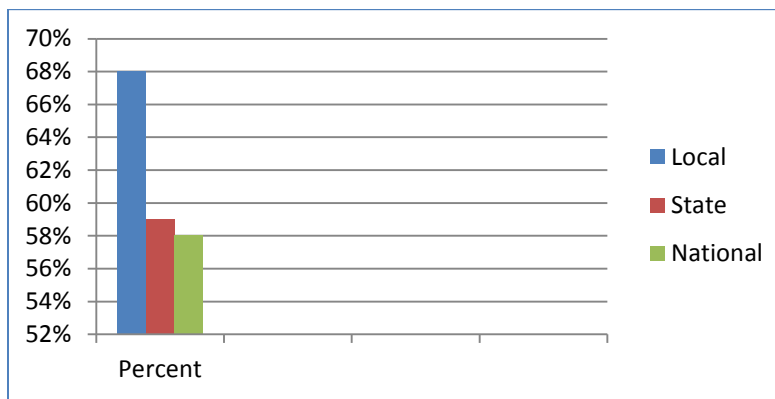


Weight

In Oconto County, 68% of the residents are reported overweight compared to the state’s 59% of residents falling into the overweight category. As previously discussed, the NCI has listed obesity under risk factors for developing breast (post-menopausal women), colon, rectum, uterine, kidney, esophageal, pancreatic, endometrial, thyroid and gallbladder. Diet and nutrition play a significant role in maintaining healthy weight and in Oconto County close to half of residents surveyed (49%) indicated they eat fast food/fried food a few times per week, compared to those who reportedly consume 3 or more servings per day of vegetables (26%) or those who report to eat 2 or more servings of fresh fruit daily (63%). See graph 1 below to see comparison of local, state and national percentages of overweight residents.

Graph 1

Percent of Overweight Residents



Further, Oconto County is ranked 59 out of 72 counties in the state of Wisconsin in terms of obese residents. In 2007, 28.4% or almost 6 percentage points higher than the entire state of Wisconsin residents, are obese [7]. See Graph 2 below for comparison.

Graph 2

Oconto County Rankings: Obesity Oconto County 2007

Health Behavior: Obesity (%BMI >30)	Current Rank
Oconto County 28.4%	59
Wisconsin 22.8%	

Current Smoking Habits

Oconto County has a slightly higher rate of smoking than that of the state average; however it is not statistically significant in difference. In 2003, 25% of Oconto residents report smoking at least one cigarette per day compared to the state of Wisconsin which report 24% in the same year, [3]. Of those residents who report smoking, 39% of them admit that their health care provider has recommended they quit smoking, [3]. Respondents who were 18 to 34 years of age were more likely to use tobacco products, [3].

The trend that was similar from Brown County suggests that once again, education and income play a role in the smoking habits of respondents in Oconto County. Residents with higher levels of education and greater household income were less likely to smoke, [3]. 29% of respondents that had a high school diploma or less were smokers compared to respondents that had a college degree. Further, 31% of respondents that earned \$30,000 or less smoke cigarettes compared to 19% of respondents earning \$60,001 or more in household income. The National Cancer Institute has listed smoking as the number 1 risk factor for developing Lung cancer, [11]. Oconto County has a higher incident of lung cancer diagnosis, as well as deaths related to lung cancer than the state of Wisconsin, [3] Table 1 below outlines the disparities.

Table 1

Current Smokers by Demographic Variables

TOTAL	Percent
Gender	
• Male	• 26
• Female	• 24
Age	
• 18 to 34	• 41
• 35 to 44	• 27
• 45 to 54	• 30
• 55 to 64	• 11
• 65 and Older	• 12
Education	
• High School or Less	• 29
• Some Post High School	• 24
• College Graduate	• 17
Household Income	
• \$30,000 or Less	• 31
• \$30,001 to \$60,000	• 24
• \$60,001 or More	• 19
Marital Status	
• Married	• 21
• Not Married	• 32

Alcohol Consumption

Oconto County far surpasses the state of Wisconsin rates for Alcohol consumption. In 2001, surveys indicated that about 26% of Wisconsin residents had 5 or more drinks at one time, compared to Oconto County Community Health Survey from 2003 that indicated 60% of Oconto residents had 5 or more drinks at one time [3]. The state of Wisconsin is higher than the National Average of 15% of Citizens reporting having 5 or more drinks at one time.

Alcohol is a significant risk factor for cancer of the head and neck, esophageal, liver, breast and colorectal. This report also suggests once again a relationship between alcohol consumption, education and income. Twenty-two percent of all respondents binge drank in the past month, male respondents were more likely to have binged in the past month (26%) than female respondents (17%) [3]. Respondents 18 to 34 years old were more likely to have binged (37%) compared to those 55 to 64 years old (14%) or respondents 65 and older (8%), [3]. Table 2 shows the Number of Drinks on an Occasion in the Past Month by Demographics.

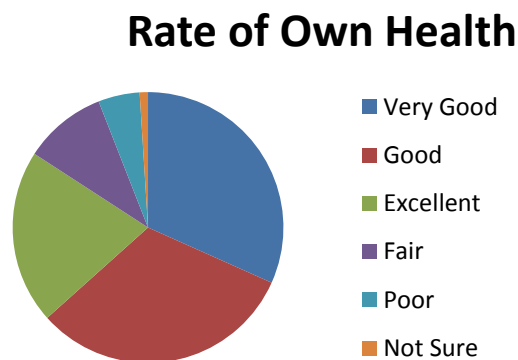
Table 2 **Number of Drinks on an Occasion in Past Month by Demographic Variables of All Respondents**

	3 or More Drinks		Binge	
	1 to 2 Times	3 or More Times	(5 + Males)	(4+ Females)
TOTAL	14%	17%	22%	
Gender				
• Male	16	23	26	
• Female	12	11	17	
Age				
• 18 to 34	19	27	37	
• 35 to 44	24	20	28	
• 45 to 54	12	13	17	
• 55 to 64	5	14	14	
• 65 and Older	6	10	8	
Education				
• High School or Less	15	17	24	
• Some Post High School	12	13	17	
• College Graduate	16	21	20	
Household Income				
• \$30,000 or Less	15	17	24	
• \$30,001 to \$60,000	13	15	19	
• \$60,001 or More	14	27	26	
Marital Status				
• Married	14	15	20	
• Not Married	15	19	23	

Screenings

Screening tests are critical to early detection of Lung, breast, prostate and colorectal cancers. Figure 13 represents the rating the respondents to the Oconto County Community Health Survey gave their own health in 2003 at the time this survey was conducted, [3].

Figure 13



Routine health screenings play a significant factor in early detection of cancer. According to the Oconto County Community Health Survey completed in 2003, “Seventy-three percent of female respondents 50 years old or older had a mammogram within the past two years. This is higher even than the state average of 69% of women age 50 or older having a mammogram in the past year, (2001 Behavioral Risk Factor Survey).

Thirty-two percent of female respondents in Oconto County indicated they never had a mammogram in their lifetime, while 56% had one in the past two years, [3]. More specifically, those 40 and older were more likely to have received a mammogram in the past two years (73% of those 50 years and older, 70% of those 40-49 years), [3].

Eighty-two percent of all female respondents reported a pap smear within the past three years. Respondents that were 18 to 64 years old or with higher household income were more likely to have had a pap smear with the past three years” [3]. In Wisconsin, 66% of women reported they had a pap smear in the past year (2001 Wisconsin Behavioral Risk Factor Surveillance). Fifty-five percent of respondents reported they had a pap smear within the past year and an additional 27% reported between one year and less than three years, [3].

Ninety-two percent of respondents 18 to 34 years of age and 90% of those 45 to 64 reported a pap smear within the past 3 years, [3]. Women, 65 and older reported having a pap smear completed within the last 3 years.

The American Cancer Society recommends an annual digital rectal examination beginning at age 40 and a serum PSA examination should become annual at age 50, [3]. Twenty-two percent of men ages 40 to 49 years and 43% of men 50 years and older reported having a digital rectal exam in the past year, [3].

“Screening for colorectal cancer is recommended for all person aged 50 and older”, [3]. In Oconto, 64% of all respondents of the Oconto County Community Health Survey indicated that they had never had a colonoscopy or sigmoidoscopy, [3]. Twenty-nine percent of participants, that were age 50 and older, in the survey indicated they had a colonoscopy or sigmoidoscopy within the last two years, [3].

Marinette County

Overview

Marinette County has a population of 41,610 according to the 2013 census. It is ideally located in Northeast Wisconsin on the shores of Green Bay bordering the Upper Peninsula of Michigan and boasts 1,550 square miles of land. The racial makeup of the county is 92.7% White, 0.4% Black or African American, 0.4% Native American, 0.7% Asian, 0.6% Pacific Islander, 0% from other races, and 1.1% from two or more races, according to the 2013 census.

Bellin Health offers patients in rural Marinette and Upper Michigan the opportunity to consult with and be followed by Oncology providers at the Marinette location. These patients also have access to specialty lab on site with infusion services as well as screening and diagnostic imaging offered at the nearby Bellin Health Oconto Hospital.

Statistics: Marinette County (2013) 41,610 Wisconsin (2013) 5,742,713 Persons per square mile 29.8 105.0 Percent Caucasian 97.2% 88.2% Persons below poverty level 13.1% 12.5% Median Household Income \$41,533 \$52,627 Median age of residents 51.0 38.5 Residents below age of 18 19.7% 23.0% Residents 65 and older 20.7% 14.4% Residents with high school diploma 89.3% 90.2% Residents with a bachelor's degree 13.9% 26.4% ~Statistics from U.S. Census Bureau Quick Facts report, 2013

Risk Factors for Cancer Diagnosis

Age

Twenty percent of the population in Marinette County is age 65 years and older compared to the Wisconsin rate of 13.9%. Based on Marinette County Statistics, Cancer is the number two cause of death (2010 Marinette County Profile). [10] The statistically significant variance between Marinette County and the state may be due to this gap in average age range.

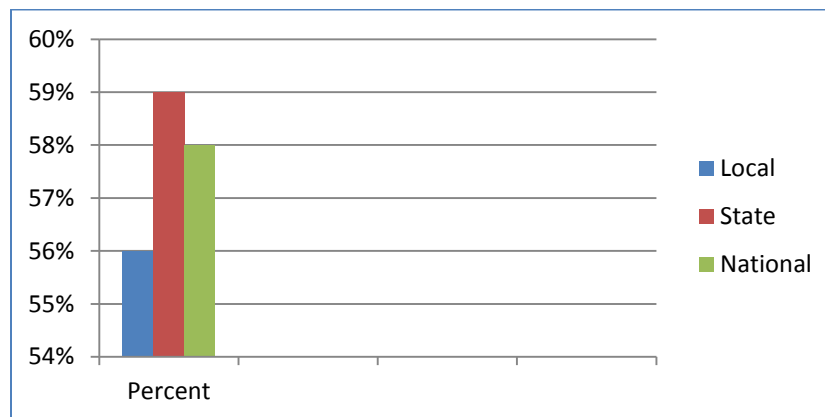
Marinette County Community Health Survey completed in 2013 suggested that women were 6% more likely to report a cancer diagnosis than men (2%), [9]. Respondents 65 and older were also more likely to report a cancer diagnosis than those of younger age groups.

Weight

In Marinette County, 56% of the residents are reported overweight (34% overweight and 22% obese) compared to the state's average of 59%, [9]. In Marinette County over half of residents surveyed (53%) indicated they eat fast food/fried food a few times per week, compared to those who reportedly consume 3 or more servings per day of vegetables (28%) or those who report to eat 2 or more servings of fresh fruit daily (64%). See graph 3 below to see comparison of local, state and national percentages of overweight residents.

Graph 3

Percent of Overweight Residents



Current Smoking Habits

Based on the information gathered from the 2013 Marinette County Community Health Survey, 20% of respondents are current smokers, which is lower than the Wisconsin average of 24% and the National average of 23%.

There continues to be a trend between the three counties indicated in Bellin's service area that education and household income are indicators for respondents who indicate risk taking behavior such as smoking. The higher education and income levels, the lower the rate of smoking and the reverse is true that lower education and income levels, the higher the rate of smoking. See table 3 below for comparison.

Table 3

Current Smokers by Demographic Variables

	Percent
Total	20%
Gender	
• Male	21
• Female	20
Age	
• 18 to 34	33
• 35 to 44	28
• 45 to 54	19
• 55 to 64	18
• 65 and older	6
Education	
• High School or Less	24
• Some Post High School	18
• College Graduate	14
Household Income	
• \$30,000 of Less	23
• \$30,001 to \$60,000	23
• \$60,001 or More	12
Marital Status	
• Married	15
• Not Married	28

Alcohol Consumption

In 2010-2011 the number of residents per liquor license in Marinette County was 198 compared to the state of Wisconsin average of 348, [10]. In 2011, excessive alcohol consumption in Marinette County was considered a contributing factor in 15 deaths, 415 hospitalizations and 370 arrests, [10].

Twenty-six percent of Wisconsin resident reported having 5+ drinks during one occasion in the past month, compared to the national rate of 15%, [1]. Marinette County report show that 16% of all respondents had 5+ drinks during one occasion within the past 30 days, which is defined as binge drinking, [10]. Male respondents were more likely to have binged in the past month (28%) compared to females (7%) [10]. Those 18-34 years of age were more likely to have binged (26%) compared to those 55 to 64 years old (13%) or those 65 years and older (3%), [10].

This data again suggests a relationship between drinking habits and education as 25% of respondents with some post high school education binged in the past month, compared to 17% of those with a high school education or less or 7% of respondents with a college education, [10]. See table 3 below.

Table 3 **Number of Drinks on an Occasion in Past Month by Demographic Variables of All Respondents**

	3 or More Drinks		Binge	
	1 to 2 Times	3 or More Times	(5 + Males)	(4+ Females)
TOTAL	11%	16%	16%	
Gender				
• Male	13	28	28	
• Female	9	7	7	
Age				
• 18 to 34	17	21	26	
• 35 to 44	11	21	23	
• 45 to 54	12	20	16	
• 55 to 64	7	18	13	
• 65 and Older	4	4	3	
Education				
• High School or Less	9	16	17	
• Some Post High School	16	25	25	
• College Graduate	8	7	7	
Household Income				
• \$30,000 or Less	8	14	14	
• \$30,001 to \$60,000	9	19	20	
• \$60,001 or More	22	13	14	
Marital Status				
• Married	13	11	14	
• Not Married	7	23	19	

Screenings

The Community Health Survey conducted by Marinette County showed that 79% of female respondents age 50 years and older had a mammogram completed within the past 24 months, [9]. This is greater than the state average of 69% of females age 50 years and older report having a mammogram completed within the past two years (47% within the past year and 15% more than one year but less than two years), [9].

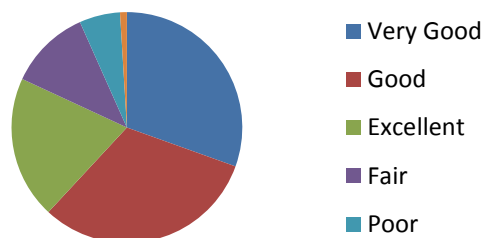
In Wisconsin, 66% of women indicated having a pap smear in the past 12 months, (2011 Wisconsin Behavioral Risk Factor Surveillance). The respondents the participated in the Community Health Survey in Marinette County indicated higher rates with 59% having had a pap smear in the past 12 months and 21% within the past 12 to 36 months.

“Twenty-six percent of male respondents 40 to 49 years old and 38% of males 50 years older and older had a digital rectal exam in the past year”, [9]. Thirty-five percent of respondents 50+ years of age reported having a colonoscopy or sigmoidoscopy done in the last two years compared to 15% of those ages 40-49 years or 8% of respondents 18 to 39 years old. A concerning statistic indicates that 39% of respondents 50+ years of age from Marinette County indicated never having had a colonoscopy or sigmoidoscopy completed to 87% of those age 18 to 39 years.

More than 70% of respondents from Marinette County indicated they felt their health was Excellent, Very Good or Good. Routine screenings do meet or exceed the state averages. See Figure 14 below.

Figure 14

Rate of Own Health



Resources within the Service Area

Breast Cancer Resources

Resources for women as well as men facing a breast cancer diagnosis are abundant within Bellin's service area. These resources include, but are not limited to; The American Cancer Society, A Woman's Place, Reach To Recovery, the Breast Cancer Family Foundation, the Aurora BayCare Medical Center breast cancer support group, and Ribbon of Hope Foundation for those treating or living in Brown or Kewaunee Counties.

Financial Resources

Financial support for those with a cancer diagnosis include but are not limited to; the US Bank ANONYMOUS FUND, Superheroes Fighting Cancer, Ovarian Cancer Community Outreach Inc, Fox Valley Brain Tumor Coalition, Forward Service Corporation / Brown County (WI) Job Center, Families of Children With Cancer Inc, Catholic Charities of the Diocese of Green Bay Inc / Green Bay Office NEW LIFE FUND, Brown County (WI) Human Services Department COMMUNITY OPTIONS PROGRAM (COP), Angel Fund For Children With Cancer Inc

Legal Resources

Legal services that can be accessed by patient's with a cancer diagnosis for no or low cost include but again or not limited to; Lawyer Referral and Information Service, Legal Action of Wisconsin Inc. / Green Bay, and Legal Action of Wisconsin Inc. / Milwaukee

Lodging Resources

Organizations within Bellin's service area that assist with providing short term lodging for patients undergoing treatment for a cancer diagnosis include; American Cancer Society, the Altrusa House, Best Western Green Bay Inn Conference Center, Quality Inn and Suites, Travelodge of Green Bay, and the Extended Stay-Airport in Green Bay.

Prostate Cancer Resources

There is a support group specific to men diagnosed with prostate cancer that meets two times per month at Bay Family Restaurant.

Rehabilitation Resources: Appearance-related side effects

Services that are designed to help provide supplies and/or apparel to help diminish the physical appearance of cancer include; Look Good...Feel Better offered by the American Cancer Society, A Woman's Place, Good Wishes Scarves, "*tlc*" *Tender Loving Care* through the American Cancer Society, Nell's Wigs and Keith's Hair Care Center.

Transportation Resources

Getting to and from cancer treatments can be a significant barrier for some patients. The resources available within Bellin's service area include; Road To Recovery through the American Cancer Society, American Red Cross / Green Bay, Ground Capitol Express Transportation, Comfort Travel, Lamers Medical Transport, Medical Transportation Management (MTM) Inc., Pulaski Senior Center, Saint Vincent de Paul / Green Bay, and Saint Vincent Hospital.

Community Outreach Services

Screening

Currently Bellin provides screening for Lung cancer, colorectal cancer, breast cancer, and cervical cancer as well as genetic screenings. These screenings include CT scans for patients meeting the high risk criteria for lung cancer, Occult Blood Tests and Colonoscopies to screen for colorectal cancer, mammograms with same day results to screen for breast cancer and Pap Smears for early detection of cervical cancer. Bellin has a Genetic Counselor on staff that works with patients to screen for genetic abnormalities including risk factors for cancers that can help guide physicians in treatment planning.

Prevention

Bellin offers smoking cessation programs for health education and intervention programs and last year provided services to over 500 patients within the Bellin Service Area. Cancer Prevention through education is also a component of our efforts within the community to enhance the overall health and wellbeing of patients within Bellin's service area. Research has shown that educating patients on cancer risk factors and behaviors that lead to a cancer diagnosis helps to decrease the number of patients diagnosed with cancer. The topics Bellin has primarily focused on include regular exercise, smoking cessation, the value of a healthy diet and BMI and mental health services. This information is presented to patients through one on one session, group programs, and educational forums.

Awareness Programs

Bellin participates in activities throughout the year in an effort to continue to bring cancer awareness to the attention of residents in the service area. There is an "Extend Hair Extend Lives" event for people to come and get a pink hair extension as a visual aid to bring awareness to breast cancer and the importance of screenings for early detection. There is also a breast cancer awareness walk that goes throughout the community to raise awareness. Lung cancer screenings and prevention information are publicized at Packer Games, reaching over 70,000 people at one time regarding the risk of lung cancer and value of early detection.

Health Care Disparities and Barriers to Care

Weight Management:

Regardless of the state and local comparisons, obesity is a problem with evidence indicating that those with extreme obesity have shortened life expectancy. Types of cancer linked to being overweight or obese include breast (post-menopausal women), colon, rectum, uterine, kidney, esophageal, pancreatic, endometrial, thyroid and gallbladder. There may be a barrier to patient understanding of the significance that excess weight has on overall health [12]. Existing public weight loss programs have a cost to the participant. There is typically a weekly charge and enrollment fee. This may be a barrier for many, as well as a requirement for meeting attendance.

Bellin Health does not currently have a well-publicized comprehensive weight loss center, program, or referral plan. For most patient visits to a provider, the patient's weight is recorded, and the BMI is calculated. For the obese patient, a conversation about the cancer and other risks of obesity with a patient, may or may not occur. There are barriers from the provider point of view regarding the time that this takes. In addition, a patient's readiness for the message may need to be assessed. A final barrier may be the comfort level of the presenter on the topic of obesity.

Alcohol Consumption:

"In its Report on Carcinogens, the National Toxicology Program of the US Department of Health and Human Services lists consumption of alcoholic beverages as a known human carcinogen." [13] Types of cancer associated with increased patterns of emergence include head and neck, esophageal, liver, breast and colorectal. Breast and colorectal of each in the top for sites of cancer occurrence treated at Bellin Health. Barriers to overuse may include lack of an awareness of long term risks. Most of the population accepts and often expect alcohol to be included as a side-note to many activities. All three counties have high consumption of alcoholic beverages.

Preventative Screenings: Breast, Colon, Lung, and Prostate

Due to the fact that not all eligible patients are having screenings, Bellin Health has invested in activities to see improvements. Regardless of whether area percentages are better than the state or national averages, Bellin Health, in its mission to have the healthiest population in the nation, strives to increase the screening rates for their patient panels. Activities to increase this have been to utilize technology, educate providers and staff, in an effort to increase awareness. Investigation into the particular barriers for patients is continuous. Comments heard range from cost of the procedure, lack of understanding of the purpose for the screening, fear of the procedure itself, lost time away from work leading to loss of income, travel to and from, lack of a provider relationship to manage care, and even fear of the results.

Smoking Cessation:

Over half (58%) of smokers in Brown County reportedly stopped smoking during the past 12 months, in an attempt to quit smoking. It is uncertain the methodology used, but these attempts suggests a desire to quit blocked by the existence of a barrier, possible a lack of support and follow-through. The incidence of smoking is high in the Marinette and Oconto counties as well. Oconto County has a higher incidence of cancer than the state, and higher smoking rates, and many patients report having been advised to quit.

Advanced Care Planning:

Large percentages of oncology patients come to Bellin without having an Advanced Care Plan (ACP). There is known misunderstandings for patients as to what an ACP is, and its benefits. Barriers to seeing patients have an ACP include a lack of time to have discussion, and lack of knowledge among patients and healthcare providers about advanced directives; health care providers may be uncomfortable.

Access to Psychology Services at the Cancer TEAM Location:

Patients have access to the services of oncology trained psychologist and counseling, either at the Cancer TEAM or through Bellin Psychiatric Center (BPC), as well as in the community. Current routine is for the psychologist to have office hours one day each week. Patients are scheduled in the next available appointment, and currently this is two months in the future. Staff maintain a “wait list” and do have a method to have the urgent patient seen at the BPC location.

Patient knowledge about their cancer diagnosis:

In a query of a small number of Bellin Health oncology patients, it was found that most did not know the particulars of their cancer diagnosis. Each was aware that they’d had cancer of a particular body site, but did not understand why another patient may have a different treatment than their own. In other words, one patient with a cancer of the prostate, for example, does not understand why they’re receiving a different treatment than another patient with prostate cancer. In fact, they’ll sometimes be overheard sharing with another patient that the treatment they’re receiving is “better” and “you should be asking for” This leads patients to increased worry and confusion. This lack of knowledge is can lead to a barrier in fully accepting and understanding the plan of care, and patients may then choose not to take advantage of offerings.

Transportation:

The oncology program located at the Green Bay site is most comprehensive. Oconto and Marinette sites do not yet have the full breath of services that are offered in Green Bay. Bellin Health is committed to seeing the expansion of the services. Travel can be a barrier to some patients due to their health, availability of vehicle, lack of an individual to accompany them, cost of travel, and time to travel. This barrier is universal to each cancer diagnosis. Programs yet to be shared with the northern region include more extensive lab and infusion services, oncology patient navigation services, local support groups, aesthetician and oncology massage, access to BEAM (Bellin Expressive Arts in Medicine program), access to Integrative Medicine, Psychology, genetic counseling, and some therapy services. Infusion services are presently available in Green Bay and Oconto, not at Bellin in Marinette.

For patients that do travel for appointments, they would benefit from the ability to see multiple providers in one trip. This would save their travel expense and time. An effort such as this would take increased communication with the providers, and may have the benefit of quicker appointments as fewer topics would have redundancy.

Primary Care Providers for All Oncology Patients:

It was noted that all oncology patients would benefit from a Primary Care Provider, yet all patients did not have a provider. Patients may arrive to oncology upon entry in the health system through the ER. They may follow a

referral path to a surgeon or other for diagnostics, bypassing a PCP. The barrier to every patient having a PCP may be lack of need recognition on behalf of the patient, or uncertainty of how to get connected.

Access to Medical Oncologist Visits at NorthReach and at BHOH:

There are growing demands for oncology services in the Marinette-Menominee area, and at Bellin Health Oconto. Presently, there is physician presence at each site just ½ day each week, for the first four Monday's of each month. These blocks of visit time are routinely over-booked to meet the patient needs. The barrier is a lack of providers to accommodate the hours of service needed.

Labs at NorthReach:

The NorthReach Clinic has lab facilities, however, they're not able to accommodate all of the oncology labs. Patients are then sent outside the Bellin Health System, to another area hospital for processing. There may be delays in results and some of the connectivity with the results being in the Bellin Health EMR and routing to the patient portal may be lost. This is a barrier it is not an optimal flow for a patient.

Chemotherapy and Infusion Services Bellin Health NorthReach:

Bellin Health does not presently offer chemotherapy services at the NorthReach Clinic in Marinette. Staying within the Health System, patients would drive to BHOH, approximately 16 miles away. Many see this drive as a barrier and opt to get their treatments at the local hospital, which does offer the service. As these services are expanded, the need for increased patient navigation among the services will follow.

Genetic Counseling Services:

Genetic Counseling services have been available at the Cancer TEAM site since 2011. The Genetic Counselor was available to see any patient in the health system. With a recent change in staffing, we have enlisted the services of another hospital. A barrier to care exists as there is a need to hire a new genetic counselor or enlist with a vendor to support the Bellin Health System.

Acupuncture Services:

There is growing interest and demand for acupuncture services among patients. Growing evidence supports this trend. The Bellin Health System does employ one physician who is licensed to perform acupuncture. Cost can be a barrier for patients who do not have this as a covered procedure in their insurance plan.

Special Needs of the Patient with Head and Neck Cancers:

This is a group of patients that are known to be complex in their care. Barriers to care often are related to socioeconomic needs, transportation, and special needs with activities of daily living. They may need dental services prior to care, and there are limited numbers of dentist's that will care for this diagnosis. Payment for, and transportation to and from the frequent visits is a barrier to some. Their care may call for a broad team including social worker, home health, aesthetician, nutritionist, and speech, along with medical and radiation oncology personnel.

Special Needs of the Patient with a feeding tube, or other tubes:

Patients may have a feeding tube placed in order to maintain nutrition during their cancer treatments. The tubes may be placed by providers in different specialties. Patient navigation becomes difficult when there is a question regarding the management of tube. A clear process for the patient is sometimes lacking. Access to follow-up care for the tube, education, and supplies can be a barrier to patients and staff.

Financial needs:

The cost of oncology care that touches every individual who enters the doors. Even patients with insurance find that the deductible and/or co-payments, face serious financial challenges {14}. Individual patient navigation on the topic of finance is riddled with complexities. Most applications for assistance are electronic, and cumbersome for an individual to maneuver, as a time when one is least likely to be able to focus on the costs. Some supplies and accessories, such as wigs, considered highly important to the patient, have costs that are too great to bear.

Aside from the coverage for care, comes the need to keep bills and records organized. In a short amount of time, the bills and insurance statements can become overwhelming. The receipt of the mail can become a trigger for stress. Financial needs can be seen as overwhelming for a patient, and can lead to a barrier in their care when resources are not fully utilized, and patients don't have a full understanding what is possible.

Possible ways to break down the financial barrier are to further guide patients. Co-Pay assistance programs for pharmaceuticals are sometimes available, as well as general assistance for patients and families. Bellin Health has a Community Care fund used to offset some expenses for patients. Patients are required to reapply every three months. The Bellin Foundation sponsors a Cancer TEAM Patient Assistance Fund. This is earmarked for non-medical expenses. It is used for gas cards, utility payments, groceries, over-night stays, and other urgent needs. Further coordination of the resources available may break down this barrier.

Survivorship Care Planning:

At Bellin Health, we have been creating Survivorship Care Plans (SCP) for some patients since 2012. Originally, we had decided to create the plans for breast cancer patients only. In 2013, we identified that a barrier to care was identification of patients who were eligible. For patients who did have a SCP created, it was found to take one hour of staff resources to prepare for the visit, and the visits took an added hour. Several of the publically available templates have been trialed.

In addition to the barriers of patient identification, and staff resources, the staff of the Cancer TEAM of Bellin Health have identified that there are patients who are not interested in a SCP visit, possibly because they don't see the benefit of the SCP, or because the cost of the visit. Therefore, patient willingness to participate in the creation and execution of a SCP can be seen as another barrier.

Conclusion

Data continues to suggest the need for screening for prostate, lung and colorectal cancers among lower income residents within Bellin's services area. The screening resources are available within the service area, and Bellin Health is a key community leader in screening efforts for the area. Bellin recognizes that early detection is critical for cancer survival and supports continued efforts the Cancer Committee to increase efforts for screening of lower income residents both at the hospital and at locations within the community by use of our mobile mammography unit.

As a nationally recognized leader, Bellin Health will continue to screen men within the area for prostate cancer and to provide prevention through education and outreach. Opportunities to expand to the more rural parts of the service area are continuously be sought as the data demonstrates the need for screening services to be utilized at a higher rate than what is currently taking place. Bellin recommends that NCCN guidelines for screening for cancer be followed and that should residents experience symptoms they should seek advice from a physician.

Due to lack of community resources for low/no income populations in the area, and because lifestyle habits significantly contributes to the development of many types of cancer, and smoking cessation is known to significantly decrease the likelihood of developing lung cancer as well as other types of cancer, Bellin Health understands that there is an opportunity for more "healthy living" education and programs to be offered within the service area.

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Bellin Health

MISSION

Bellin Health is a community-owned not-for-profit organization responsible for the physical and mental health of people living in Northeast Wisconsin and the Upper Peninsula of Michigan. We exist to serve others through patient care excellence and innovative programs designed to influence health in our region. We are steadfast in our commitment to providing compassionate, safe, reliable, and cost-effective services and programs. Our innovations and never-ending pursuit of improvement will drive the evolution of healthcare delivery in our region, and influence other organizations.

VISION

The people in our region will be the healthiest in the nation.

STRATEGIC OBJECTIVES

Objective 1: Patient, Family and Customer-Centered Organization

Bellin will provide a positive experience in all interactions through active listening, engagement and participation of individuals and families, and coordination of care to ease the burden associated with healthcare delivery. We will know the people in our region and the factors that influence their health, build trusting relationships, and design care models and products to meet their needs.

Objective 2: Engaged Staff & Partners

Bellin is driven toward our Vision through the contributions of our employees, medical staff members (both employed and independent), board members, and volunteers, along with their collaborative efforts with our many valued partners. We maintain a positive culture rooted in our values of:

- **People** are the foundation of Bellin Health. As individuals, team members, and members of various communities, our actions and attitudes must demonstrate respect, commitment, accountability, competence, and integrity.
- **Superior Service** is provided to surpass customer expectations.
- **Continuous Improvement** ensures safety and achieves superior outcomes.
- **Learning & Development** enables personal and organizational excellence through the advancement of our knowledge and skill in support of our Mission and Vision.
- **Innovative Thinking** fosters an environment to attain breakthrough results.

Objective 3: Improved Health of the Population

We will provide superior, high-quality healthcare products and services at an affordable cost, within an exceedingly positive experience. Our focus will be on:

- Activating individuals in their personal health
- Developing strong primary care relationships
- Providing exceptional specialty and acute care services
- Understanding our population segments
- Integrating with community and grass roots efforts
- Influencing state and national healthcare policy

We will relentlessly improve and innovate. We will exceed patient safety standards and root out all causes of harm. We will influence other healthcare organizations in our region to adopt processes designed to improve the health of our population and look for opportunities to cooperate with these organizations to more effectively accomplish our vision. We will challenge our competitors to work toward improving the health of the population and improving the affordability and quality of healthcare in the region.

Objective 4: Growth & Prosperity

We will continue to be a strong organization through innovation and expansion of our influence on the lives of the population by:

- Listening to customers and the market
- Updating our products and services
- Transforming operations
- Developing the payor markets by designing new products and relationships
- Managing relationships and capturing appropriate referrals
- Developing and sustaining strong specialty care services throughout the entire region
- Providing donors an opportunity to fulfill their passion for giving
- Supporting medical education and Bellin College

We will strive to push the cost of healthcare services in our region to the lowest in the nation. At the same time, we will maintain a bond rating at, or above, investment grade, which is a comprehensive and objective indicator of our financial strength.