Mississippi State Department of Health

Mississippi Morbidity Report

Volume 33, Number 1 May 2017

Colorectal Cancer in Mississippi

Key Messages:

- Colorectal Cancer (CRC) is a significant cause of morbidity and mortality in Mississippi with more than 1,500 new cases and more than 600 deaths projected for 2017.
- The lifetime risk for developing invasive CRC is 5%; risk increases with age and is higher in males, African Americans, and persons with a family history of CRC or personal history of polyps.
- Adults in Mississippi have high rates of modifiable risk factors for CRC including physical inactivity, obesity, diabetes, alcohol use, smoking and diets low in fruit and vegetable consumption.
- Screening for CRC is recommended for all adults starting at age 50 years. Screening rates in Mississippi remain low, ~ 60%, and are the 5th worst in the US.
- The 70X2020 Initiative is a joint effort of many public and private partners with a goal of increasing screening rates and decreasing morbidity and mortality from CRC in Mississippi.

Background

The American Cancer Society (ACS) estimates that there will be more than 17,000 new cancer cases and more than 6,500 cancer deaths in Mississippi in 2017. Colorectal cancer (CRC) is a major contributor, projected to account for 1,500 of these cancer cases and more than 600 of these deaths. According to data from the National Cancer Institute (NCI) Surveillance, Epidemiology and End Results Program (SEER) the life time risk of developing invasive colorectal cancer is 5%. Race, gender, age, family history and a number of lifestyle factors play a role in an individual's risk for developing CRC. To address the morbidity and mortality of CRC in Mississippi, the 70 x 2020 Colorectal Cancer Screening Initiative, was formed in 2015, bringing together organizations and individuals to develop a strategic plan to address the risk factors for CRC and to overcome barriers to screening and treatment.

Risk Factors for CRC

There are many modifiable and non-modifiable risk factors for CRC. Non-modifiable risk factors cannot be changed and include age, race or ethnicity, gender, a personal history of colorectal polyps or inflammatory bowel disease such as ulcerative colitis or Crohn's disease, and a family history of CRC, polyps or a number of related genetic conditions.

Modifiable risk factors are those that can be addressed through behavioral changes and include overweight/obesity, diet, physical inactivity, smoking, alcohol use, and diabetes. Data from the 2015 Behavioral Risk Factor Surveillance System (BRFSS) reveal high rates of modifiable risk factors in

Mississippi adults (Table 1). When compared to all US states and the District of Columbia, Mississippi currently has the highest rates of physical inactivity and diabetes, the second highest rate of obesity, and the third highest rate of smoking. Consumption of fruits and vegetables is associated with a decreased risk of CRC, but Mississippi has the lowest consumption rates in the US. BRFSS data shows that only 48.8% of Mississippians consume one or more servings of fruits per day (US average is 60.3%) and only 68.8% consume vegetables on a daily basis (US average 77.9%).

Table 1: Percent of Risk Factors Associated with Increased Risk of CRC in Mississippi Adults, ages 18 and older. 2015 BRFSS Report[†]

	White			African American			Total		
Risk Factor	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Overweight or obese (BMI ≥ 25)	74.5	58.6	66.6	74.3	78.2	76.4	74.3	66.0	70.1
Obese (BMI ≥ 30)	33.1	28.6	30.9	35.3	50.9	43.6	33.8	37.3	35.6
Physically Inactive in past 30 days	33.2	39.4	36.4	34.5	39.9	37.3	34.0	39.4	36.8
Current smoker	23.3	21.8	22.5	32.9	13.6	22.3	27.1	18.4	22.6
Alcohol use – Binge Drinking	18.4	6.4	12.2	17.6	5.7	11.1	18.2	6.2	11.9
Alcohol use - Chronic Drinking	5.9	3.6	4.7	5.6	2.6	3.9	5.9	3.4	4.5
Ever Diagnosed with Diabetes	15.4	12.9	14.1	15.1	17.2	16.2	15.0	14.5	14.8

[†]The full 2015 BRFSS report with complete definitions of risk factors and methods is available at: http://www.msdh.state.ms.us/brfss/brfss2015ar.pdf

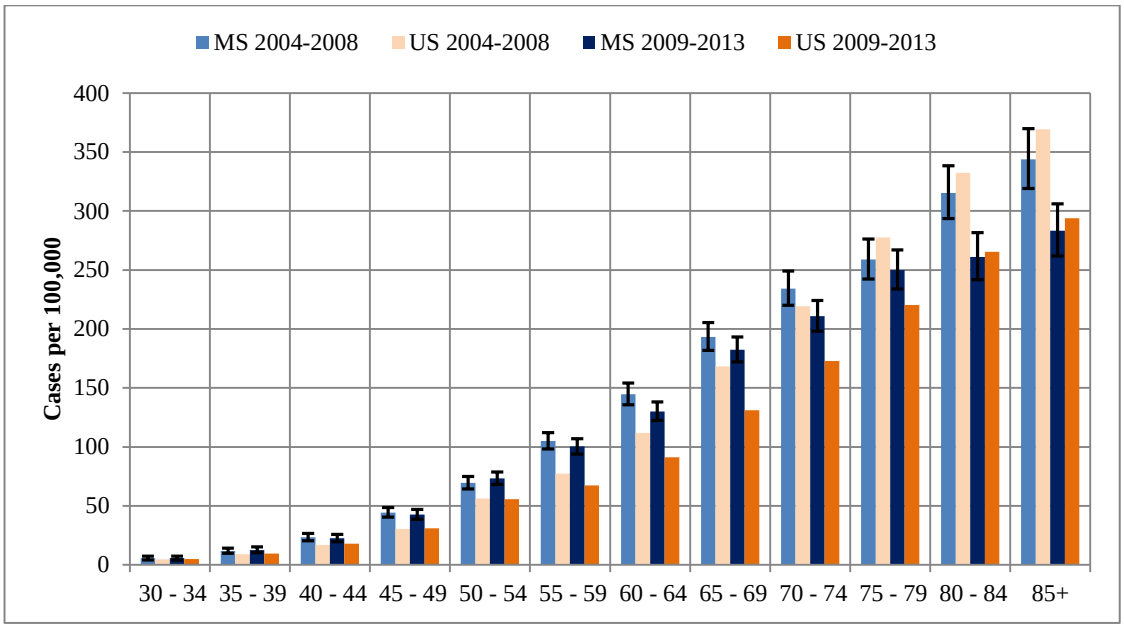
It is important to note that many individuals possess more than one of these risk factors. The exact interaction of multiple risk factors on CRC risk is unclear but data suggest that they work in combination to increase risk in a synergistic, not simply additive, manner. Of note, many of these risk factors are related to other important causes of morbidity and mortality in Mississippians including cardiovascular disease, respiratory problems, lung cancer and the development of Type 2 diabetes. This makes addressing these issues even more important in overall efforts to improve the health of Mississippians.

Mississippi Trends

In 2013 Mississippi ranked second in the US with a CRC incidence rate of 48.7 (per 100,000) compared to 38.4 for the US. Mississippi's CRC mortality was the second highest in the nation with a rate of 18.6 vs. the US rate of 15.1.

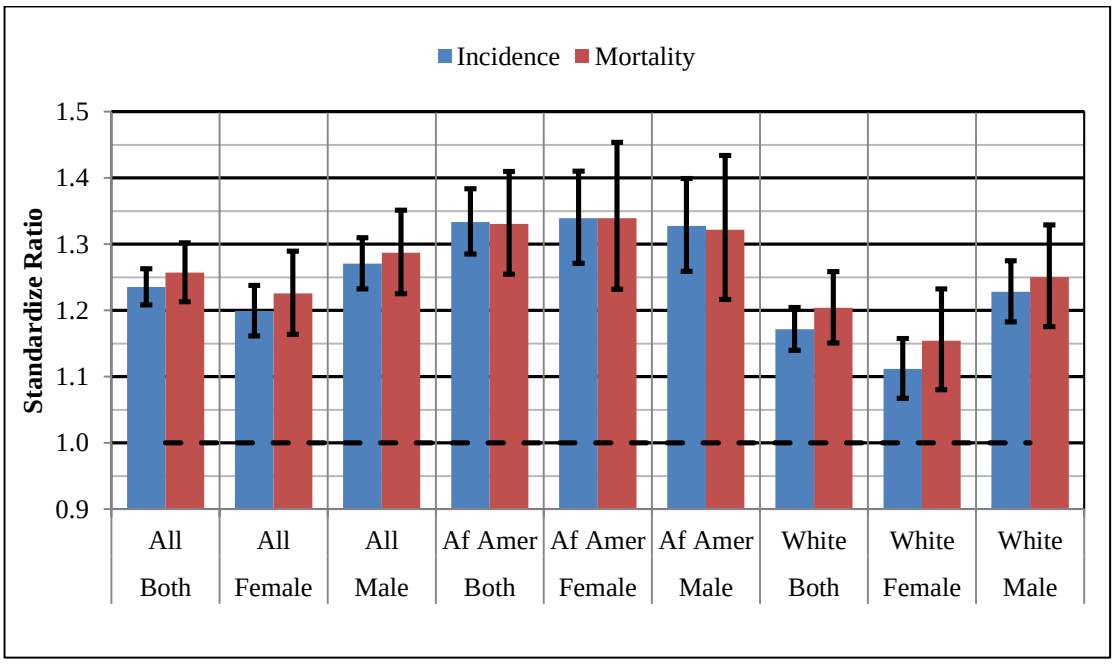
Comparison of CRC incidence in MS and the US shows that while age-specific rates have remained fairly stable or decreased over the two 5-year times periods studied, increasing age is the single largest risk factor for CRC (Figure 1). Data from the Mississippi Central Cancer Registry show that rates are nearly double for those in the 45 -54 age group as compared to those in the 35-44 age group and incidence doubles again for the 65-74 age group.

Figure 1: CRC Incidence by Age, US and Mississippi, 2004 -2008 and 2009-2013



Race and gender are also important risk factors; males and African Americans have higher rates of CRC than females and whites. Additionally, males and African Americans also have higher rates of mortality from CRC. Mississippi data obtained from the CDC's National Program of Cancer Registries (NPCR) and SEER was analyzed utilizing indirect standardization methodology (in this method, ratios greater than one indicate a worse outcome than the standardized group). This data clearly show that MS has a higher incidence and mortality from CRC, in nearly all groups, when compared to the US as a whole with the highest rates occurring in African Americans and the lowest in white females (Figure 2). At least some of this excess can be attributed to disparities in screening, follow-up and treatment. Improving access to these measures leads to improved outcomes.

Figure 2: CRC Standardized Morbidity and Mortality Ratios, 2009-2013*



*Standardized to 2009-13 US age-sex-race specific rates, with 95% Confidence Intervals

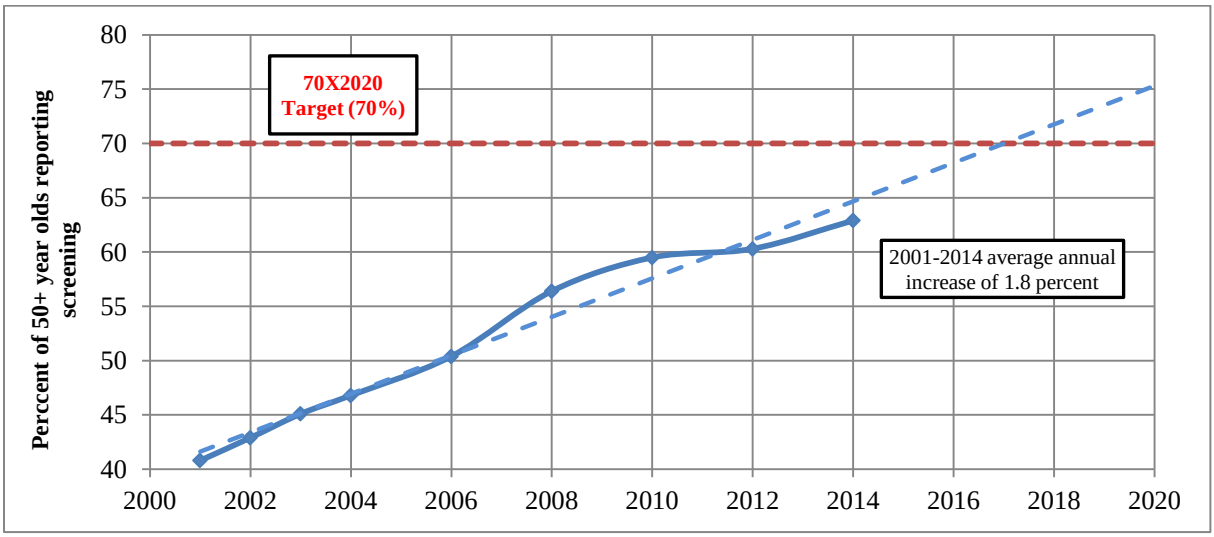
70x2020 Colorectal Cancer Screening Initiative

Proven interventions exist that can decrease one's risk of developing CRC. These include decreasing or eliminating modifiable risk factors and being screened for CRC according to recommended guidelines.

Educational campaigns have been designed to increase patient knowledge about CRC and its associated risk factors with an emphasis on increasing access to medical care, including appropriate screenings for CRC. The **70x2020 Colorectal Cancer Screening Initiative** was formed in Mississippi in 2015 with the goal of bringing together healthcare, governmental, community and non-profit organizations and individuals to develop a strategic plan to overcome these barriers and decrease morbidity and mortality from CRC in our state. The initiative adopted the Healthy People 2020 CRC screening target of that 70% of all Mississippians are up to date on colorectal screening recommendations by 2020. More information on this initiative and its plan is available at www.umc.edu/70x2020strategicplan.

While screening rates are increasing in Mississippi, they remain low (Figure 3). 2015 BRFSS data showed that only 60.2% of Mississippians had received screening consistent with current guidelines, a rank of 47th overall in the US. Rates were even lower for African Americans (57.9%) and men (59.3%).

Figure 3: Colorectal Cancer Screening††, age 50+, Mississippi BRFSS



††Reported ever having colonoscopy or sigmoidoscopy

Current CRC Screening Recommendations

The United States Prevention Service Task Force (USPSTF) is the primary organization charged with developing and publishing evidence-based preventive care recommendations for healthcare conditions including CRC. Letter grades are assigned to recommendations which indicate the strength of the recommendation. A synopsis of the 2016 CRC screening guidelines is found in Table 2. Clinicians may find the complete 2016 recommendations at: https://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/colorectal-cancer-screening2. A PDF of consumer information published by the USPSTF about CRC screening may be found at: https://www.uspreventiveservicestaskforce.org/Home/GetFileByID/2330.

Table 2: Summary of 2016 USPSTF Colorectal Screening Recommendations

Population	**Adults aged 50 to 75 years**	**Adults aged 76 to 85 years**
Recommendation	**Screen for colorectal cancer starting at age 50 y. Grade: A†††**	**The decision to screen for colorectal cancer is an individual one. Grade: C‡**
Risk Assessment	For the vast majority of adults, the most important risk factor for colorectal cancer is older age. Other associated risk factors include family history of colorectal cancer, male sex, and black race.	
Starting and Stopping Ages	The USPSTF concluded that the evidence best supports a starting age of 50 years for the general population. The age at which the balance of benefits and harms of colorectal cancer screening becomes less favorable varies based on a patient's life expectancy, health status, comorbid conditions, and prior screening status. The USPSTF does not recommend routine screening for colorectal cancer in adults 86 years of age and older.	
Balance of Benefits and Harms	The USPSTF concludes with high certainty that the net benefit of screening for colorectal cancer is substantial.	The USPSTF concludes with moderate certainty that the net benefit of screening for colorectal cancer in adults aged 76 to 85 years who have been previously screened is small. Adults who have never been screened are more likely to benefit. Screening is most appropriate for those healthy enough to undergo treatment and those without comorbid conditions that significantly limit their life expectancy.
Other Relevant USPSTF Recommendations	The USPSTF has made a recommendation on aspirin use for the primary prevention of cardiovascular disease and colorectal cancer in average-risk adults. This recommendation is available on the USPSTF website at http://www.uspreventiveservicestaskforce.org.	

†††Grade A: The USPSTF recommends the service. There is high certainty that the net benefit is substantial.
‡Grade C: The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small.

Other recommendations have been made by other organizations. In addition, an individual's specific risk factors may warrant consideration of different screening recommendations. For example, a joint guideline published by the ACS, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology recommends that patients with a personal history of polyps or a family history of colorectal cancer would benefit from being screened with colonoscopy more frequently and/or starting at a younger age than persons who are at average risk.

References available on request

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Mississippi
Provisional Reportable Disease Statistics
April 2017

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	Apr 2017	Apr 2016	YTD 2017	YTD 2016
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	1	0	3	0	3	1	1	1	6	16	27	88	87
	Early Latent Syphilis	1	3	2	1	16	5	0	1	3	32	55	146	169
	Gonorrhea	61	59	73	31	128	37	23	61	69	542	509	2,219	2,037
	Chlamydia	145	177	150	106	405	118	67	140	188	1,496	1,499	4,956	6,365
	HIV Disease	2	0	5	1	14	5	2	5	3	37	47	163	154
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	2	0	0	0	1	0	0	0	0	3	3	12	10
	Extrapulmonary TB	0	0	0	0	0	0	0	0	0	0	1	0	4
	Mycobacteria Other Than TB	0	3	0	1	14	2	0	2	10	32	26	146	131
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0	0	0	0	0	0	7	1
	Tetanus	0	0	0	0	0	0	0	0	0	0	1	0	1
	Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	1	1	0	0	0	0	1	1	7	11	0	14	0
	Hepatitis B (acute)	0	1	0	0	0	0	0	0	0	1	0	15	8
	Invasive *H. influenzae* disease	0	2	0	0	0	0	0	1	1	4	11	23	26
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	0	0	1	0
Enteric Diseases	**Hepatitis A (acute)**	0	0	0	0	0	0	0	0	0	0	0	1	3
	Salmonellosis**	2	7	1	1	13	3	1	5	4	38	51	149	164
	Shigellosis	1	0	2	0	0	0	0	1	2	6	6	41	20
	Campylobacteriosis	2	11	2	2	7	1	1	4	6	36	19	130	63
	***E. coli* O157:H7/STEC/HUS**	0	0	0	0	0	0	0	0	0	0	3	3	6
Zoonotic Diseases	**Animal Rabies**	0	0	0	0	0	0	0	0	0	0	1	0	1
	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rocky Mountain spotted fever	0	0	0	0	0	0	0	0	0	0	3	7	14
	West Nile virus	0	0	0	0	0	0	0	0	0	0	1	0	1

*Totals include reports from Department of Corrections and those not reported from a specific District.

**Unknown address for one case.