Healthiest Wisconsin 2010 Health Priority:

Environmental and Occupational Health Hazards

Final Review: Appendices and References

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Wisconsin Public Health Council
State Health Plan Committee

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Appendix 1: E. coli infection

Health Priority D: Environmental and Occupational Health Hazards

Health Priority E: Existing, Emerging, and Re-emerging Communicable Diseases

Objectives D1b and E3a: By 2010, the incidence of E. coli 0157:H7 infection will be 3 per 100,000 population.

2010 Target: 3 per 100,000 population

Indicator: E. coli infection

Incidence of E. Coli 0157:H7 Infection

Year	Reported Cases (Wisconsin)	Cases per 100,000 Population (Wisconsin)	Cases Per 100,000 Population (10 Participating Food Net States)
2000	364	6.8	
2001	223	4.1	
2002	293	5.4	
2003	137	2.5	1.06
2004	135	2.5	0.9
2005	136	2.5	1.06
2006	188	3.4	1.31
2007	155	2.8	1.20
2008	150	2.7	

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services, FoodNet: Foodborne Disease Active Surveillance Network (Participating States include: California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee)

Notes:
Data for 2000 - 2006: Reports were keyed into the state database.
Data for 2007 and subsequent years: Data is collected via WEDSS (the Wisconsin Electronic Disease Surveillance System). The migration from the legacy database to WEDSS in July 2007 involved significant data cleaning and de-duplication, so the counts in WEDSS will differ somewhat from counts generated in previous years.

Appendix 2: Salmonellosis incidence

Health Priority D: Environmental and Occupational Health Hazards

Health Priority E: Existing, Emerging, and Re-emerging Communicable Diseases

Objectives D1c and E3b: By 2010, the incidence of salmonellosis will be 8 per 100,000 population.

2010 Target: 8 per 100,000 population

Indicator: Salmonellosis incidence

Salmonellosis Incidence

Year	Reported Cases (Wisconsin)	Cases per 100,000 Population (Wisconsin)	Cases Per 100,000 Population (10 Participating Food Net States)
2000	765	14.3	
2001	833	15.3	
2002	902	16.5	
2003	937	17.0	14.43
2004	1,000	18.2	14.7
2005	936	16.9	14.55
2006	906	16.2	14.81
2007	999	17.8	14.92
2008	743	13.2	

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services, FoodNet: Foodborne Disease Active Surveillance Network (Participating States include: California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee)

Notes:
Data for 2000 - 2006: Reports were keyed into the state database.
Data for 2007 and subsequent years: Data is collected via WEDSS (the Wisconsin Electronic Disease Surveillance System). The migration from the legacy database to WEDSS in July 2007 involved significant data cleaning and de-duplication, so the counts in WEDSS will differ somewhat from counts generated in previous years.

Appendix 3: Shigellosis incidence

Health Priority D: Environmental and Occupational Health Hazards

Health Priority E: Existing, Emerging, and Re-emerging Communicable Diseases

Objectives D1d and E3c: By 2010, the incidence of shigellosis will be 4 per 100,000 population.

2010 Target: 4 per 100,000 population

Indicator: Shigellosis incidence

Shigellosis Incidence

Year	Reported Cases (Wisconsin)	Cases per 100,000 Population (Wisconsin)	Cases Per 100,000 Population (10 Participating Food Net States)
2000	333	6.2	
2001	306	5.6	
2002	192	3.5	
2003	133	2.4	7.27
2004	337	6.1	5.1
2005	225	4.1	4.67
2006	239	4.3	6.09
2007	781	13.9	6.26
2008	539	9.6	

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services, FoodNet: Foodborne Disease Active Surveillance Network (Participating States include: California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee)

Notes:
Data for 2000 - 2006: Reports were keyed into the state database.
Data for 2007 and subsequent years: Data is collected via WEDSS (the Wisconsin Electronic Disease Surveillance System). The migration from the legacy database to WEDSS in July 2007 involved significant data cleaning and de-duplication, so the counts in WEDSS will differ somewhat from counts generated in previous years.
Incidence spike in 2007 related to Shigellosis outbreak related to Milwaukee child care centers (Milwaukee Health Department, 2007).

Appendix 4: Campylobacteriosis incidence

Health Priority D: Environmental and Occupational Health Hazards

Health Priority E: Existing, Emerging, and Re-emerging Communicable Diseases

Objectives D1e and E3d: By 2010, the incidence of campylobacteriosis will be 11 per 100,000 population.

2010 Target: 11 per 100,000 population

Indicator: Campylobacteriosis incidence

Campylobacteriosis Incidence

Year	Reported Cases (Wisconsin)	Cases per 100,000 Population (Wisconsin)	Cases Per 100,000 Population (10 Participating Food Net States)
2000	1,207	22.5	
2001	1,154	21.3	
2002	1,182	21.6	
2003	1,121	20.4	12.6
2004	1,319	23.9	12.9
2005	1,173	21.2	12.72
2006	1,206	21.6	12.71
2007	1,131	20.2	12.79
2008	1,266	22.5	

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services, FoodNet: Foodborne Disease Active Surveillance Network (Participating States include: California, Colorado, Connecticut, Georgia, Maryland, Minnesota, New Mexico, New York, Oregon, and Tennessee)

Notes:
Data for 2000 - 2006: Reports were keyed into the state database.
Data for 2007 and subsequent years: Data is collected via WEDSS (the Wisconsin Electronic Disease Surveillance System). The migration from the legacy database to WEDSS in July 2007 involved significant data cleaning and de-duplication, so the counts in WEDSS will differ somewhat from counts generated in previous years.

Appendix 5: Hepatitis A incidence

Health Priority D: Environmental and Occupational Health Hazards

Health Priority E: Existing, Emerging, and Re-emerging Communicable Diseases

Objectives D1f and E3e: By 2010, the incidence of hepatitis A will be 1 per 100,000 population.

2010 Target: 1 per 100,000 population

Indicator: Hepatitis A incidence

Hepatitis A Incidence in Wisconsin

Year	Reported Cases	Cases per 100,000 Population (In Wisconsin	Cases per 100,000 Population (In United States)
2000	105	2.0	4.8
2001	90	1.7	3.7
2002	195	3.6	3.1
2003	45	0.8	2.6
2004	128	2.3	1.9
2005	47	0.8	1.5
2006	42	0.8	1.2
2007	32	0.6	1.0
2008	33	0.6	

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services; CDC MMWR, 2009.

Notes:
Data for 2000 - 2006: Reports were keyed into the state database.
Data for 2007 and subsequent years: Data is collected via WEDSS (the Wisconsin Electronic Disease Surveillance System). The migration from the legacy database to WEDSS in July 2007 involved significant data cleaning and de-duplication, so the counts in WEDSS will differ somewhat from counts generated in previous years.

Appendix 6: Asthma hospitalizations

Health Priority D: Environmental and Occupational Health Hazards

Objective D2a: By 2010, reduce the asthma hospitalization rate to 8.5 per 10,000 population.

2010 Target: 8.5 per 10,000 population

Indicator: Asthma hospitalizations

Wisconsin Asthma Hospitalizations (Principal Diagnosis of Asthma), By Age and Sex

Year	Hospitalizations per 10,000 Population	Total	Number of Hospitalizations							
			Age						Sex	
			Ages 0-4	Ages 5-10	Ages 11-17	Ages 18-44	Ages 45-64	Ages 65+	Males	Females
2000	10.9	5,801	1,110	755	450	1,491	1,064	931	2,382	3,419
2001	10.4	5,554	1,002	510	372	1,506	1,183	981	2,222	3,332
2002	9.8	5,298	984	481	315	1,368	1,177	973	2,120	3,178
2003	11.4	6,176	1,118	559	394	1,530	1,395	1,180	2,450	3,726
2004	10.0	5,486	1,022	457	298	1,287	1,343	1,079	2,176	3,310
2005	10.3	5,665	1,039	525	317	1,232	1,378	1,174	2,323	3,342
2006	9.1	5,100	946	497	258	1,057	1,267	1,075	2,048	3,052
2007	8.9	5,034	823	432	263	1,060	1,390	1,066	1,945	3,089

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.

Wisconsin Asthma Hospitalizations (Principal Diagnosis of Asthma), By Race

Year	Hospitalizations per 10,000 Population	Number of Hospitalizations						
		Total	African American*	American Indian*	Asian*	White*	Other*	Unknown*
2000	10.9	5,801	1,505	52	60	3,704	235	245
2001	10.4	5,554	1,336	70	44	3,702	273	129
2002	9.8	5,298	1,362	69	53	3,531	255	28
2003	11.4	6,176	1,591	71	43	4,131	274	66
2004	10.0	5,486	1,305	75	45	3,701	298	62
2005	10.3	5,665	1,263	61	44	3,647	305	345
2006	9.1	5,100	1,173	67	43	3,306	227	284
2007	8.9	5,034	1,222	73	52	3,451	171	65

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.
*Race groups in this table include Hispanics.

Wisconsin Asthma Hospitalizations (Principal Diagnosis of Asthma), By Hispanic Ethnicity

Year	Hospitalizations per 10,000 Population	Number of Hospitalizations			
		Total	Hispanic	Not Hispanic	Unknown
2000	10.9	5,801	123	5,212	466
2001	10.4	5,554	139	5,030	385
2002	9.8	5,298	164	4,936	198
2003	11.4	6,176	193	5,710	273
2004	10.0	5,486	200	5,092	194
2005	10.3	5,665	205	5,000	460
2006	9.1	5,100	236	4,565	299
2007	8.9	5,034	265	4,663	106

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.

Wisconsin Asthma Hospitalizations (Any Diagnosis of Asthma), By Age and Sex

Year	Hospitalizations per 10,000 Population	Total	Number of Hospitalizations							
			Age						Sex	
			Ages 0-4	Ages 5-10	Ages 11-17	Ages 18-44	Ages 45-64	Ages 65+	Males	Females
2000	52.6	28,329	1,964	1,260	1,537	8,548	7,117	7,903	9,799	18,530
2001	56.7	30,991	1,844	1,004	1,517	9,822	8,157	8,647	10,415	20,576
2002	60.4	33,356	1,996	995	1,571	10,213	9,253	9,328	11,191	22,165
2003	67.4	37,591	2,118	1,134	1,716	11,638	10,464	10,521	12,356	25,235
2004	69.7	39,395	1,979	1,098	1,822	12,224	11,480	10,792	12,767	26,628
2005	72.5	41,362	2,247	1,155	1,826	12,509	12,186	11,439	13,539	27,823
2006	74.7	42,952	2,148	1,222	1,910	13,124	12,908	11,640	14,008	28,944
2007	74.5	43,246	1,894	1,156	1,952	13,336	13,196	11,712	14,010	29,236

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.

Wisconsin Asthma Hospitalizations (Any Diagnosis of Asthma), By Race

Year	Hospitalizations per 10,000 Population	Number of Hospitalizations						
		Total	African American*	American Indian*	Asian*	White*	Other*	Unknown*
2000	52.6	28,329	4,590	229	147	21,726	714	923
2001	56.7	30,991	4,825	281	131	24,255	806	693
2002	60.4	33,356	5,189	345	171	26,409	901	341
2003	67.4	37,591	6,022	314	181	29,531	1,083	460
2004	69.7	39,395	6,186	386	214	30,976	1,142	491
2005	72.5	41,362	6,091	386	232	31,062	1,203	2,388
2006	74.7	42,952	6,538	416	227	32,317	1,309	2,145
2007	74.5	43,246	6,939	417	257	33,792	1,261	580

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.

*Race groups in this table include Hispanics.

Wisconsin Asthma Hospitalizations (Any Diagnosis of Asthma), By Hispanic Ethnicity

Year	Hospitalizations per 10,000 Population	Number of Hospitalizations			
		Total	Hispanic	Not Hispanic	Unknown
2000	52.6	28,329	503	25,074	2,752
2001	56.7	30,991	581	28,417	1,993
2002	60.4	33,356	764	31,449	1,143
2003	67.4	37,591	890	35,405	1,296
2004	69.7	39,395	1,015	37,388	992
2005	72.5	41,362	1,044	36,532	3,786
2006	74.7	42,952	1,328	38,805	2,819
2007	74.5	43,246	1,575	40,550	1,121

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the U.S. 2000 standard population.

Appendix 7: Mesothelioma incidence

Health Priority D: Environmental and Occupational Health Hazards

Objective D2c1: By 2010, reduce occupational mesothelioma illness and death by 30 percent below the 2000 baseline.

2010 Target: Incidence rate of 1.1 per 100,000 population

Indicator: Mesothelioma incidence

Wisconsin Mesothelioma Incidence (New Cases), by Sex and Age

Year	Total	Incidence Rate per 100,000 Population	Males	Females	Under Age 65	Ages 65-74	Ages 75+
2000	87	1.6	71	16	25	29	33
2001	85	1.5	60	25	21	31	33
2002	83	1.5	63	20	25	33	25
2003	68	1.2	50	18	15	20	33
2004	89	1.5	69	20	25	23	41
2005	78	1.3	58	20	15	28	35
2006	84	1.4	63	21	14	25	45

Source: Wisconsin Cancer Reporting System, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

Note: Incidence rates per 100,000 population have been age-adjusted to the 2000 U.S. standard population. (See data documentation.)

Wisconsin Mesothelioma Incidence (New Cases), by Race/Ethnicity

Year	Total	African American*	American Indian*	Asian*	White*	Hispanic
2000	87	3	2	0	80	2
2001	85	1	0	0	83	1
2002	83	1	1	1	80	0
2003	68	2	0	0	65	1
2004	89	1	0	0	88	0
2005	78	1	0	0	77	0
2006	84	0	0	0	83	1

Source: Wisconsin Cancer Reporting System, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services. This data set includes cases identified from Indian Health Service linkage, North American Association of Central Cancer Registries (NAACCR) Hispanic/Latino Identification Algorithm and NAACCR Asian/Pacific Islander Identification Algorithm.

* Non-Hispanic

Appendix 8: Mesothelioma deaths

Health Priority D: Environmental and Occupational Health Hazards

Objective D2c: By 2010, reduce occupational mesothelioma illness and death by 30 percent below the 2000 baseline.

2010 Target: Death rate of 0.7 deaths per 100,000 population

Indicator: Mesothelioma deaths

Wisconsin Deaths Due to Mesothelioma, by Sex and Age

Year	Total	Deaths per 100,000 Population	Males	Females	Under Age 65	Ages 65-74	Age 75+
2000	55	1.0	50	5	7	18	30
2001	65	1.2	51	14	17	22	26
2002	65	1.1	53	12	11	21	33
2003	67	1.2	54	13	22	19	26
2004	64	1.1	45	19	17	17	30
2005	59	1.0	44	15	12	16	31
2006	78	1.3	65	13	16	23	39
2007	62	1.0	37	25	12	21	29

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

Note: Rates (deaths per 100,000 population) have been age-adjusted to the 2000 U.S. standard population. (See data documentation.)

Wisconsin Deaths Due to Mesothelioma, by Race/Ethnicity

Year	Total	African American*	American Indian*	Asian*	Hispanic	White*
2000	55	0	0	0	0	55
2001	65	2	0	0	0	63
2002	65	0	1	0	0	64
2003	67	0	0	0	0	67
2004	64	0	0	0	0	64
2005	59	2	0	0	0	57
2006	78	2	1	0	1	74
2007	62	0	0	0	1	61

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.
* Non-Hispanic

Appendix 9: Pneumoconiosis hospitalizations

Health Priority D: Environmental and Occupational Health Hazards

Objective D2d: By 2010, reduce occupational pneumoconiosis illness and death by 30 percent below the 2000 baseline.

2010 Target: 0.1 hospitalizations per 100,000 population (principal diagnosis)
3.2 hospitalizations per 100,000 population (any diagnosis)

Indicator: Pneumoconiosis hospitalizations

Wisconsin Pneumoconiosis Hospitalizations (Principal Diagnosis of Pneumoconiosis), By Age

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations					
		Total	Ages 18-44	Ages 45-64	Ages 65+	Males	Females
2000	**0.2**	10	0	3	7	9	1
2001	**0.2**	11	1	5	5	7	4
2002	**0.3**	17	1	6	10	17	0
2003	**0.3**	17	0	9	8	16	1
2004	**0.3**	20	0	6	14	19	1
2005	**0.2**	11	0	2	9	10	1
2006	**0.1**	8	0	2	6	6	2
2007	**0.3**	16	0	4	12	15	1

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

Wisconsin Pneumoconiosis Hospitalizations (Principal Diagnosis of Pneumoconiosis), By Race

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations				
		Total	African American*	White*	Other*	Unknown*
2000	0.2	10	1	8	0	1
2001	0.2	11	1	10	0	0
2002	0.3	17	4	13	0	0
2003	0.3	17	0	17	0	0
2004	0.3	20	1	18	0	1
2005	0.2	11	1	9	0	1
2006	0.1	8	2	5	0	1
2007	0.3	16	1	15	0	0

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

* Race groups in this table include Hispanics.

Wisconsin Pneumoconiosis Hospitalizations (Principal Diagnosis of Pneumoconiosis), By Hispanic Ethnicity

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations			
		Total	Hispanic	Not Hispanic	Unknown
2000	0.2	10	0	9	1
2001	0.2	11	0	11	0
2002	0.3	17	0	17	0
2003	0.3	17	0	17	0
2004	0.3	20	0	19	1
2005	0.2	11	0	11	0
2006	0.1	8	0	8	0
2007	0.3	16	0	16	0

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

Wisconsin Pneumoconiosis Hospitalizations (Any Diagnosis of Pneumoconiosis), By Age

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations					
		Total	Ages 18-44	Ages 45-64	Ages 65+	Males	Females
2000	4.5	248	3	51	194	235	13
2001	4.7	262	6	54	202	239	23
2002	5.2	295	3	68	224	267	28
2003	5.1	293	3	47	243	274	19
2004	5.0	294	3	43	248	275	19
2005	4.8	288	3	42	243	272	16
2006	4.7	275	9	30	237	261	15
2007	4.5	275	3	35	237	259	16

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

Wisconsin Pneumoconiosis Hospitalizations (Any Diagnosis of Pneumoconiosis), By Race

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations					
		Total	African American*	American Indian*	White*	Other*	Unknown*
2000	4.5	248	21	1	200	6	20
2001	4.7	262	20	0	229	1	12
2002	5.2	295	24	1	262	4	4
2003	5.1	293	20	1	260	7	5
2004	5.0	294	19	1	267	3	4
2005	4.8	288	10	1	248	4	25
2006	4.7	275	10	0	244	5	17
2007	4.5	275	16	1	254	3	1

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

* Race groups in this table include Hispanics.

Wisconsin Pneumoconiosis Hospitalizations (Any Diagnosis of Pneumoconiosis), By Hispanic Ethnicity

Year	Hospitalizations per 100,000 Population	Number of Hospitalizations			
		Total	Hispanic	Not Hispanic	Unknown
2000	4.5	248	4	216	28
2001	4.7	262	1	244	17
2002	5.2	295	3	286	6
2003	5.1	293	11	272	10
2004	5.0	294	5	280	9
2005	4.8	288	6	261	21
2006	4.7	275	6	253	17
2007	4.5	275	4	270	1

Source: Inpatient hospitalization discharge file, Bureau of Health Information and Policy, Division of Public Health, Wisconsin Department of Health Services; prepared from data collected by the Bureau of Health Information and Policy through September 30, 2003 and thereafter by the Wisconsin Hospital Association Information Center, Inc.

Note: Rates are age-adjusted to the 2000 U.S. standard population.

Appendix 10: Pneumoconiosis deaths

Health Priority D: Environmental and Occupational Health Hazards

Objective D2d: By 2010, reduce occupational pneumoconiosis illness and death by 30 percent below the 2000 baseline.

2010 Target: 0.3 deaths per 100,000 population
Indicator: Pneumoconiosis deaths

Wisconsin Deaths With Pneumoconiosis as the Underlying or Contributing Cause of Death, by Sex and Age

Year	Total	Deaths per 100,000 Population	Number				
			Males	Females	Under Age 65	Ages 65-74	Age 75+
2000	21	0.4	21	0	3	3	15
2001	27	0.5	26	1	4	9	14
2002	26	0.5	25	1	4	8	14
2003	32	0.5	29	3	4	5	23
2004	33	0.6	32	1	5	7	21
2005	23	0.4	23	0	0	5	18
2006	31	0.5	29	2	3	6	22
2007	26	0.5	26	0	0	13	13

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

Note: Rates (deaths per 100,000 population) have been age-adjusted to the 2000 U.S. standard population. (See data documentation.)

Wisconsin Deaths With Pneumoconiosis as the Underlying or Contributing Cause of Death, by Race/Ethnicity

Year	Total	African American*	American Indian*	Asian*	Hispanic	White*
2000	21	1	1	0	0	19
2001	27	3	0	0	0	24
2002	26	3	0	0	0	23
2003	32	2	0	0	0	30
2004	33	4	1	0	0	28
2005	23	2	0	0	1	20
2006	31	2	0	0	1	28
2007	26	0	0	0	2	24

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

* Non-Hispanic

Appendix 11: Occupational injury deaths

Health Priority D: Environmental and Occupational Health Hazards

Objective D3a: Reduce the death rate due to occupational injuries.

Indicator: Occupational injury deaths

2010 Target: No target established

Source: U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries (2006 and 2007 data); Fatality Assessment and Control Evaluation (FACE) Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services (2000-2005 data).

Wisconsin Deaths Due to Occupational Injuries, by Sex and Ethnicity

Year	Total Number	Deaths per 100,000 Population	Males	Females	Hispanic	Non-Hispanic	Unknown Ethnicity
2000	102	1.9	90	12	1	95	6
2001	112	2.0	108	4	6	97	9
2002	92	1.7	84	8	3	84	5
2003	99	1.8	96	3	3	96	0
2004	99	1.7	91	8	4	91	4
2005	112	2.0	104	8	7	105	0
2006	91	1.7	86	5	3	86	2
2007	103	1.8	93	10	5	96	2

Wisconsin Deaths Due to Occupational Injuries, by Age

Year	Total	Ages <16	Ages 16-17	Ages 18-19	Ages 20-24	Ages 25-44	Ages 45-64	Ages 65+
2000	102	4	1	1	5	34	42	15
2001	112	0	1	3	7	43	45	13
2002	92	2	0	0	11	34	33	12
2003	99	3	0	3	4	40	35	14
2004	99	1	1	4	6	30	38	18
2005	112	0	0	2	6	40	43	21
2006	91	0	0	0	7	28	36	17
2007	103	-	-	-	5	32	39	24

Source: U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries (2006 and 2007 data); Fatality Assessment and Control Evaluation (FACE) Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services (2000-2005 data).

Note: The 2004 total includes one death for which age was unknown.

Wisconsin Deaths Due to Occupational Injuries, by Race

Year	Total	African American*	American Indian*	Asian*	White*	Other*	Unknown*
2000	102	4	0	2	90	0	6
2001	112	2	1	1	98	1	9
2002	92	1	0	1	85	0	5
2003	99	3	2	0	91	3	0
2004	99	0	0	1	93	1	4
2005	112	4	2	0	104	1	1
2006	91	-	-	-	86	5	0
2007	103	4	-	-	92	-	7

Source: U.S. Bureau of Labor Statistics, Census of Fatal Occupational Injuries (2006 and 2007 data); Fatality Assessment and Control Evaluation (FACE) Program, Bureau of Environmental and Occupational Health, Division of Public Health, Wisconsin Department of Health Services (2000-2005 data).

* Race groups in this table include Hispanics.

Appendix 12: Occupational illness and injury

Health Priority D: Environmental and Occupational Health Hazards

Objective D3b: Reduce the incidence rate of occupational injury and illness.

2010 Target: No target established

Indicator: Occupational illness and injury

Incidence Rate of Nonfatal Occupational Illness and Injury per 100 Full-time Workers, Wisconsin

Year	Rate
2000	9.0
2001	7.7
2002	7.0
2003	6.4
2004	6.3
2005	5.8
2006	5.6
2007	5.3

Source: Worker's Compensation Division, Wisconsin Department of Workforce Development.

Appendix 13: Blood lead test, Medicaid/BadgerCare recipients under age 6

Health Priority D: Environmental and Occupational Health Hazards

Objective D4b: By 2010, 100 percent of Wisconsin children enrolled in Medicaid will receive age-appropriate blood lead tests.

2010 Target: 100%

Indicator: Blood lead test, Medicaid/BadgerCare recipients under age 6

Blood Lead Test, Wisconsin Medicaid/BadgerCare Recipients under Age 6

Year	Number Enrolled in Medicaid	Number Tested	Percent Tested During Year	Number with Positive Test	Percent with Positive Test
2000	126,332	33,676	26.7%	3,724	11.1%
2001	137,723	40,809	29.6%	3,719	9.1%
2002	149,664	44,497	29.7%	3,334	7.5%
2003	160,432	45,786	28.5%	2,777	6.1%
2004	168,291	48,610	28.9%	2,600	5.3%
2005	174,612	50,073	28.7%	2,281	4.6%
2006	177,739	50,626	28.5%	1,788	3.5%
2007	181,138	57,090	31.5%	1,712	3.0%
2008	207,313	60,986	29.4%	1,385	2.3%

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Division of Public Health, and Wisconsin Medicaid Eligibility Files, Division of Health Care Access and Accountability, Department of Health Services.

Percent of Wisconsin Medicaid/BadgerCare Recipients under Age 6 Who Received a Blood Lead Test during the Year, By Sex and Age

Year	Total	Males	Females	Under Age 1	Age 1	Age 2	Ages 3-5 With No Prior Test
2000	26.7%	26.9%	26.4%	3.6%	45.3%	36.9%	14.4%
2001	29.6%	29.8%	29.4%	3.7%	51.5%	41.3%	15.5%
2002	29.7%	29.9%	29.6%	3.7%	54.0%	42.3%	14.2%
2003	28.5%	28.7%	28.3%	3.4%	54.1%	42.2%	12.6%
2004	28.9%	29.0%	28.7%	3.5%	55.9%	43.2%	12.3%
2005	28.7%	28.8%	28.6%	3.4%	56.0%	42.9%	11.1%
2006	28.5%	28.6%	28.4%	3.5%	56.3%	43.5%	10.8%
2007	31.5%	31.6%	31.4%	3.6%	60.7%	47.9%	13.2%
2008	29.4%	29.3%	29.5%	3.7%	54.7%	45.9%	11.4%

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Division of Public Health, and Wisconsin Medicaid Eligibility Files, Division of Health Care Access and Accountability, Department of Health Services.

Appendix 14: Blood lead test, all children under age 6

Health Priority D. Environmental and Occupational Health Hazards

Objective D4c: By 2010, no children age six and younger will be diagnosed with lead poisoning.

2010 Target: 0

Indicator: Blood lead test, all children under age 6

Blood Lead Test, Wisconsin Children under Age 6, by Sex

Year	Number of Children Tested	Children With Positive Blood Lead Tests							
		Total		Male		Female		Unknown Sex	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
2000	70,845	5,307	7.5%	2,809	7.8%	2,480	7.3%	18	2.5%
2001	79,371	5,119	6.4%	2,756	6.8%	2,350	6.2%	13	2.0%
2002	81,785	4,444	5.4%	2,411	5.8%	2,016	5.1%	17	1.5%
2003	81,101	3,666	4.5%	1,961	4.8%	1,682	4.3%	23	1.9%
2004	83,774	3,283	3.9%	1,749	4.1%	1,521	3.8%	13	1.1%
2005	82,352	2,784	3.4%	1,517	3.7%	1,243	3.1%	24	1.9%
2006	81,818	2,111	2.6%	1,186	2.9%	913	2.3%	12	1.1%
2007	92,406	2,050	2.2%	1,102	2.3%	940	2.1%	8	1.0%
2008	96,107	1,642	1.7%	872	1.8%	766	1.7%	4	0.3%

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Division of Public Health, Department of Health services .Note: Percent is the number with a positive test result divided by the number of children tested.

Number and Percent of Wisconsin Children under Age 6 With a Positive Blood Lead Test, by Age

	Total		Age Less Than 1		Age 1		Age 2		Ages 3–5 With No Prior Test	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2000	5,307	7.5%	235	2.2%	1,623	6.2%	1,306	10.6%	366	4.9%
2001	5,119	6.4%	216	1.8%	1,686	5. 7%	1,258	9.0%	371	4.7%
2002	4,444	5.4%	193	1.5%	1,445	4.6%	1,158	7.8%	304	4.2%
2003	3,666	4.5%	179	1.5%	1,265	3.9%	911	6.1%	229	3.6%
2004	3,283	3.9%	125	1.0%	1,123	3.3%	872	5.6%	174	3.0%
2005	2,784	3.4%	101	0.8%	1,051	3.1%	751	5.0%	143	2.5%
2006	2,111	2.6%	77	0.6%	753	2.3%	625	4.0%	109	2.0%
2007	2,050	2.2%	83	0.6%	761	2.0%	561	3.1%	115	1.8%
2008	1,642	1.7%	62	0.5%	599	1.5%	498	2.5%	81	1.3%

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Division of Public Health, Department of Health Services.
Note: Percent is the number with a positive test result divided by the number of children tested.

Percent of United States Children under Age 6 With a Positive Blood Lead Test

Year	Percent
2000	3.96%
2001	3.03%
2002	2.56%
2003	2.0%
2004	1.76%
2005	1.58%
2006	1.21%

Source: CDC's National Surveillance Data (1997-2006). Retrieved January 22, 2010, from http://www.cdc.gov/nceh/lead/data/national.htm

Number and Percent of Wisconsin Children under Age 6 With a Positive Blood Lead Test, by Race/Ethnicity

African American			American Indian		Asian		Hispanic		White		Other/Mixed/ Unknown	
Year	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
2000	3,137	21.5%	26	2.5%	195	8.3%	715	8.4%	956	3.1%	278	2.1%
2001	2,950	18.5%	28	2.3%	214	7.7%	745	7.2%	966	2.7%	216	1.6%
2002	2,583	16.2%	28	1.9%	148	5.9%	714	6.0%	769	2.1%	202	1.5%
2003	2,053	13.3%	17	1.4%	109	4.3%	601	5.0%	664	1.8%	222	1.6%
2004	1,877	11.7%	13	1.0%	85	3.1%	509	4.1%	614	1.7%	185	1.3%
2005	1,461	9.7%	17	1.2%	96	3.3%	474	3.8%	540	1.5%	196	1.4%
2006	1,085	7.7%	11	0.8%	62	2.3%	410	3.2%	315	1.0%	228	1.2%
2007	1,036	6.6%	16	1.0%	58	2.0%	413	2.8%	288	0.9%	239	1.0%
2008	798	5.0%	8	0.5%	56	1.90%	286	1.8%	295	0.8%	199	0.8%

Source: Wisconsin Childhood Lead Poisoning Prevention Program, Division of Public Health, Department of Health Services.

Note: Percent is the number with a positive test result divided by the number of children tested.

Appendix 15: Unintentional carbon monoxide deaths

Health Priority D: Environmental and Occupational Health Hazards

Objective D4f: By 2010, there will be no unintentional carbon monoxide poisoning fatalities in Wisconsin.

2010 Target: 0

Indicator: Unintentional carbon monoxide deaths

Wisconsin Deaths Due to Unintentional Carbon Monoxide Poisoning, by Sex and Age

Year	Total	Males	Females	Under Age 18	Ages 18-44	Ages 45-64	Ages 65-74	Age 75+
2000	18	15	3	0	7	7	1	3
2001	10	7	3	0	4	4	0	2
2002	14	9	5	0	6	3	1	4
2003	12	9	3	0	5	3	2	2
2004	10	8	2	0	4	4	1	1
2005	16	16	0	1	6	6	1	2
2006	11	6	5	1	5	1	1	3
2007	17	11	6	2	4	6	1	4

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

Wisconsin Deaths Due to Unintentional Carbon Monoxide Poisoning, by Race/Ethnicity

Year	Total	African American*	American Indian*	Asian*	Hispanic	White*
2000	18	0	0	0	0	18
2001	10	1	0	0	0	10
2002	14	1	0	0	1	12
2003	12	0	0	0	0	12
2004	10	1	1	0	0	8
2005	16	2	0	0	0	14
2006	11	5	0	0	0	6
2007	17	0	0	0	1	16

Source: Resident death certificates, Bureau of Health Information and Policy, Division of Public Health, Department of Health Services.

* Non-Hispanic

Appendix 16: Exposure to smoking at home, adults 18+

Health Priority D: Environmental and Occupational Health Hazards

Objective D4g1: By 2010 there will be no unwanted environmental tobacco smoke exposure in homes.

2010 Target: 0

Health Priority K: Tobacco Use and Exposure

Objective K3a: By 2010, reduce the percent of adults who reported that they or someone else smoked in their home in the past 30 days from 28% in 2000 to 21%.

2010 Target: 21%

Indicator (for both objectives): Exposure to smoking at home, adults 18+

Percent of Wisconsin Adults Aged 18+ Exposed to Smoke at Home in the Past 30 Days

Year (N)	Total		Males		Females		African Am.*		Am. Indian*		White*	
	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-
2000	28%	2%	30%	3%	26%	2%	44%	7%	--		27%	2%
(N)	2,720		1,221		1,499		219				2,308	
2005	18%	2%	18%	3%	18%	2%	31%	10%	--		17%	2%
(N)	4,278		1,722		2,556		317				3,734	
2008	14%	1%	13%	2%	15%	2%	30%	9%	27%	16%	13%	1%
(N)	6,597		2,730		3,867		473		153		5,699	

Source: Wisconsin Behavioral Risk Factor Survey, Bureau of Health Information and Policy, Division of Public Health, Department of Health and Family Services.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.
* Non-Hispanic
-- Fewer than 100 cases in 2000 and 2005

Appendix 17: Exposure to smoking at home, middle and high school students

Health Priority D: Environmental and Occupational Health Hazards

Objective D4g2: By 2010, there will be no unwanted environmental tobacco smoke exposure in homes.

2010 Target: 0

Health Priority K: Tobacco Use and Exposure

Objective K3c: By 2010, reduce the percent of youth who reported that they live with someone who smokes from 44 percent in 2000 to 33 percent.

2010 Target: 33% (middle and high school students combined)

Indicator (for both objectives): Exposure to smoking at home, middle and high school students

Percent of Wisconsin Middle and High School Students Who Live With a Smoker

Year (N)	Total		Males		Females	
	Percent	+/-	**Percent**	+/-	**Percent**	+/-
2000	44%	2%	43%	3%	46%	3%
(N)	2,747		1,323		1,412	
2002	44%	2%	43%	3%	45%	3%
(N)	2,660		1,312		1,336	
2004	41%	2%	41%	3%	42%	3%
(N)	3,125		1,575		1,541	
2006	41%	2%	42%	2%	40%	2%
(N)	3,558		1,762		1,796	
2008	37%	2%	36%	2%	38%	2%
(N)	3,439		1,764		1,668	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.

N Number in sample. See data documentation.

+/- Confidence interval. See data documentation.

Percent of Wisconsin Middle and High School Students Who Live With a Smoker, by Race/Ethnicity

Years (N)	Total		Afr. Am.*		Am. Ind.*		Asian*		Hispanic		White*	
	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-
2000, 2002	44%	1%	56%	5%	74%	8%	31%	7%	48%	8%	43%	2%
(N)	5,407		426		123		219		186		4,389	
2002, 2004	43%	1%	54%	5%	60%	9%	28%	6%	51%	8%	41%	2%
(N)	5,785		561		147		251		201		4,559	
2004, 2006	41%	1%	49%	4%	54%	7%	33%	5%	48%	5%	40%	1%
(N)	6,534		603		170		285		327		5,149	
2006, 2008	39%	1%	48%	4%	55%	8%	37%	6%	40%	5%	38%	1%
(N)	6,940		621		136		262		405		5,516	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.
* Non-Hispanic

Percent of Wisconsin High School Students Who Live With a Smoker

Year (N)	Total		Males		Females	
	Percent	+/-	Percent	+/-	Percent	+/-
2000	43%	3%	42%	4%	44%	4%
(N)	1,307		619		682	
2002	41%	3%	41%	4%	41%	4%
(N)	1,362		643		716	
2004	39%	3%	38%	4%	39%	4%
(N)	1,443		680		730	
2006	40%	2%	40%	3%	39%	3%
(N)	1,701		853		848	
2008	38%	2%	39%	3%	37%	3%
(N)	1,886		950		932	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.

Percent of Wisconsin High School Students Who Live With a Smoker, By Race/Ethnicity

Years (N)	Total		Afr. Am.*		Asian*		Hispanic		White*	
	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-
2000, 2002	42%	2%	57%	8%	31%	10%	**		41%	2%
(N)	2,669		198		100		**		2,214	
2002, 2004	40%	2%	51%	8%	23%	8%	49%	10%	39%	2%
(N)	2,805		222		116		111		2,297	
2004, 2006	39%	2%	43%	6%	29%	7%	46%	8%	39%	2%
(N)	3,087		265		140		162		2,469	
2006, 2008	39%	2%	44%	5%	40%	8%	37%	7%	38%	2%
(N)	3,554		398		136		202		2,765	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.
Note: Race/ethnicity categories with fewer than 100 cases are not shown.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.
* Non-Hispanic
** Fewer than 100 cases for time period.

Percent of Wisconsin Middle School Students Who Live With a Smoker

Year (N)	Total		Males		Females	
	Percent	+/-	Percent	+/-	Percent	+/-
2000	46%	3%	43%	4%	49%	4%
(N)	1,440		704		730	
2001	43%	3%	43%	4%	44%	4%
(N)	1,591		816		771	
2002	47%	3%	45%	4%	49%	4%
(N)	1,298		669		620	
2003	42%	2%	43%	3%	42%	3%
(N)	1,864		946		907	
2004	45%	3%	44%	3%	46%	4%
(N)	1,682		838		783	
2006	43%	2%	44%	3%	42%	3%
(N)	1,857		909		948	
2008	36%	2%	33%	3%	39%	3%
(N)	1,553		814		736	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.

Percent of Wisconsin Middle School Students Who Live With a Smoker, by Race/Ethnicity

Years (N)	Total		Afr. Am.*		Am. Ind.*		Asian*		Hispanic		White*	
	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-	Percent	+/-
2000-2003	45%	1%	52%	5%	65%	7%	36%	6%	49%	7%	43%	2%
(N)	6,193		580		183		272		233		4,840	
2001-2004	44%	1%	53%	4%	61%	7%	37%	6%	51%	7%	43%	2%
(N)	6,453		691		218		288		222		4,927	
2002, 2004, 2006	44%	1%	54%	4%	58%	6%	37%	6%	49%	6%	42%	1%
(N)	6,419		668		220		275		269		4,987	
2004, 2006, 2008	41%	1%	54%	5%	52%	8%	37%	7%	46%	6%	39%	1%
(N)	5,037		420		149		184		254		3,987	

Source: Wisconsin Youth Tobacco Survey, Division of Public Health, Department of Health Services.
N Number in sample. See data documentation.
+/- Confidence interval. See data documentation.
* Non-Hispanic

Appendix 18

Background and Support for Objective 1: By 2010, Decrease the Incidence of Illness Resulting from Microbial or Chemical Contamination of Food and Drinking Water.

Food

The Center for Disease Control and Prevention (2009) estimates 76 million cases of food-borne illness occur in the United States each year. More than 300,000 persons are hospitalized and 5,000 die from these preventable illnesses (Centers for Disease Control and Prevention, 2009). The five, most common, food-borne pathogens are responsible for an estimated $44 billion dollars annually towards medical costs and losses in productivity (American Public Health Association, n.d.). The CDC estimates that six pathogens are responsible for 95% of food-related deaths; *Salmonella*, 31%, *Listeria*, 28%, *Toxoplasma*, 21%, *Norwalk*-like viruses, 7%, *Campylobacter*, 5%, and hemorrhagic *E. coli*, 3% (Jones, Hovingh, Hackney, & Sumner, 2008). Importantly, 81% of food-borne illness, and 64% of deaths are caused by unknown agents. Acute symptoms of food borne illness include cramps, diarrhea, vomiting, and nausea. Food-borne illnesses can also lead to long-term illnesses. For instance *E. coli* can lead to kidney failure and *Campylobacter* infections are thought to be the leading cause of Guillain-Barré syndrome (CDC, 2008).

Healthiest Wisconsin 2010 focused on three of the four bacterial pathogens which the CDC currently recognizes as the greatest concern; these include E.Coli 0157:H7, Salmonella enteritidis, and Campylobacter jejuni. Listeria monocytogenes is the fourth pathogen of concern; it is currently monitored by the Wisconsin Enteric Pathogens Surveillance Program and could easily be included as a Healthiest Wisconsin 2020 sub-objective. Toxoplasmosis is a reportable

disease in Wisconsin as well as nationally; between 1993-2003, an average of 2.1 cases of toxoplasmosis were reported in Wisconsin (Department of Health Services, 2009a). Due to the low frequency of this disease, its omission from the state health plan is acceptable. The *Norwalk*-like virus increased to 116 outbreaks in 2006 from 63 outbreaks in 2002; Wisconsin should consider making *Norwalk*-like virus communicable disease a reportable condition to coincide with the anticipated CDC decision make non-food borne incidence of *Norwalk*-like viruses nationally notifiable (Wisconsin Department of Health & Family Services: Bureau of Communicable Diseases and Preparedness, 2007).

To successfully achieve our goal of reducing microbial contamination within food and drinking water, the state laboratory, epidemiologists, and environmental health specialists must work collaboratively to identify and mitigate factors which result in microbial outbreaks. The first step of collaboration is organization and transparency of all collected data. Currently, the data collected from local Public Health Departments regarding licensing violations is not standardized and therefore not easily accessed by the Wisconsin State Laboratory of Hygiene. Standardized and web-based licensing programs, such as *Healthspace*, currently used by Food Safety & Recreational Licensing Regional Offices' staff and some local Agent Programs, may promote a prevention model which guides effective interventions to reduce microbial incidence. Encouraging and funding the use of programs such as *Healthspace* would organize the data concerning 'what went wrong' so that we could use it to figure out 'why it went wrong' (James Mack, 9/18/2009).

Prevention of upcoming and potential food and water related issues will be critical to the maintenance of environmental health. The following points listed are potential food supply

threats identified by The Institute of Food Technology, a non-profit, scientific society that works with the Food and Drug Administration.

- The increased globalization and demand for a variety of foods in all seasons creates an increased demand for inspection of incoming food supplies.
- Alternative processing techniques, including the use of hormones to promote milk production and genetic engineering of foods, challenge the ability to ensure food safety.
- The increase in organic food production, involving the use of manure as fertilizer, creates more potential for microbial contamination of food.
- We can also expect an increase of at-risk subpopulations due to life sustaining medical technology.
- Pathogen evolution (American Dietetic Association, 2009).

The increased use of anti-microbial drugs within agricultural practices has led to concerns related to the development of anti-microbial resistant microorganisms in the environment. Resistant bacteria are more virulent and survive conventional treatment. It is estimated that 70% of manufactured antibiotics are used within the agricultural setting (Heilig, Lee, & Brestlow, 2002). This regimen of antibiotics may be required because animals are kept in confinement and fed grains rather than allowed to graze on grass (American Public Health Association, 2007). Excess antibiotics not absorbed by the animal is excreted in the manure; the soil becomes contaminated once the manure is spread as fertilizer. Recently, the American Medical

Association (Heilig, Lee, & Breslow, 2002) and the American Nurses Association (Clouse, 2006) adopted a policy to curtail the use of non-therapeutic antibiotics in animals.

Data related to this issue continues to be collected by the National Antimicrobial Resistance Monitoring System, which is a collaboration between the CDC, FDA, and USDA. This surveillance led to the disuse of fluoroquinolones in poultry production. In an effort to minimize human exposure to antibiotics used in agricultural practices, the USDA mandates that antibiotic use be discontinued at least 60 days before slaughter (American Dietetic Association, 2009). Measures of infection prevention, include preventing overcrowding of animals, isolating animals with diarrhea, and maintaining sanitary conditions may reduce antibiotic use (Jones et al, 2008).

Hormones are commonly used in agricultural settings to increase milk production or enhance development. Bovine growth hormone acts to increase milk production; however, it also increases the incidence of mastitis and antibiotic use (APHA, 2009). The natural steroid hormones estradiol, testosterone and progesterone, as well as their synthetic counterparts, zeranol, melengestrol, trenbolone, are used in U.S. and Canadian beef. These hormones can stay in the meat for months or be passed as manure which contaminates the soil and water. The use of these products in farming practices has gone without thorough longitudinal testing (APHA, 2009). However, many of these compounds are similar in structure and function to Diethylstilbestrol (DES) which was banned in 1971 after it was associated with vaginal and cervical cancers.

According to the 2009 Food and Health Survey, 49% of Americans have confidence in the safety of the US food supply (Food Information Council, 2009). Further, 72% of participants

feel it is the responsibility of the government to ensure the quality of the food supply. Seven federal agencies and nine nongovernmental organizations hold food regulation responsibilities (American Dietetic Association, 2009). The USDA funded Food Safety Initiative has implemented the following programs to track and prevent food-borne illness: FoodNet, PulseNet, the Environmental Health Specialists Network (EHSN), the Hazard Analysis and Critical Control Point (HACCP), and FightBAC!. Wisconsin is currently participating in or using evidence from all these programs (James Mack, 2009).

Water

In 2008, Wisconsin exceeded the regulation standards set by the 1974 Safe Drinking Water Act (Wisconsin Department of Natural Resources, 2008). About 96% of all public water systems did not contain a regulated contaminant which exceeded a health-based standard. Bacterial contamination was the most common violation, followed by arsenic and radium. Arsenic has been associated with skin, bladder, and prostate cancer as well as circulatory disorders such as atherosclerosis. A 2008 meta-analysis by Celik et al, showed an association between arsenic exposure and lung cancer. Long-term radium exposure has been linked to increased risk of bone cancer (Wisconsin Department of Natural Resources, 2008).

Although the 2008 Wisconsin DNR annual drinking water report found no evidence of mercury within drinking water, mercury remains a concern among those who consume fish from Wisconsin lakes and rivers. In 2004, fish consumption history and hair samples were collected from 2,029 Wisconsin adults (WDHFS, 2005). These hair samples revealed that mercury levels exceeded the EPA limit of 1ppm in 29% of men and 13% of the women. Increased fish consumption was significantly correlated with increased hair mercury levels. In 2004, based on

recommendations from the report, Wisconsin revised the fish consumption advisory to limit walleye and northern pike to no more than one meal per week.

Mercury is usually introduced into the environment in the elemental or inorganic form. When mercury interacts with the environment, it bonds with carbon to form organic mercury--most commonly, methylmercury. Methylmercury and mercury vapors are the most dangerous because they can cross the blood-brain barrier. Effects of mercury include damage to the brain, kidney, and developing fetus (ATSDR, 1999). A report from the National Academy of Sciences (2000) called attention to possible cardiovascular effects from chronic, low-level, methyl mercury exposure (WDHFS, 2005). Methyl mercury exposure primarily comes from the muscle of dietary fish intake, other exposures include fluorescent light bulbs, mercury thermometers, and dental fillings (ATSDR, 1999). Education and adequate disposal facilities are necessary to reduce the risk of mercury exposure.

Polychlorinated biphenyls (PCBs) had been used in Wisconsin's paper manufacturing (Wisconsin Division of Public Health, 2001). Between 1957-1971 about 250,000 pounds of PCBs were discharged into the Fox River; it is estimated that 160,000 pounds have entered Lake Michigan (Environmental Protection Agency, 2009). These chemicals do not break down easily, and they are able to bio-accumulate in the food chain and concentrate in the fat of predator fish (Wisconsin Division of Public Health, 2001). Ingestion of PCBs through drinking water, surface soils, and consumption of fish fat may cause harmful effects which include neurological and immunological disorders. PCB exposure has been associated with biliary and liver cancers in animal studies (ATSDR, 2001). Recent studies by Everett et al (2008) and Uemura et al (2008) showed a correlation between PCB exposure and increased hypertension and diabetes, respectively.

There has been recent concern about Bisphenol A (BPA) in both our water and food supply (American Dietetic Association, 2009). In 2010, the USDA identified BPA as an item of concern for the prostate and the behavior and brains of fetuses, infants and children. On March 3, 2010, Wisconsin approved a ban of BPA in baby bottles and sippy cups for children three and younger (Kissinger, 2010). BPA may act as a carcinogen or cause hormonal and developmental changes in humans. This chemical is used in polycarbonate plastic, epoxy resins, and on the inside of cans to prevent corrosion.

According to the Central Wisconsin Groundwater Center (2009), 12% of the 900,000 private wells in Wisconsin have nitrate levels greater than the drinking water standard of >10 micrograms per liter. Nitrate comes from fertilizer, sewage effluent, and animal waste. Infants less than six months of age who are exposed to contaminated water are at risk for methemoglobinemia, a disorder which interrupts transport of oxygen. Nitrates have also been associated with birth defects and miscarriages when pregnant mothers are exposed. Testing private wells is only required when the pump is changed or a new well is placed (Central Wisconsin Groundwater Center, 2009). To minimize exposure to fertilizer runoff, research is conducted by the Wisconsin Fertilizer Research Program, which is supported though an additional tax placed upon fertilizer purchases (Wisconsin Fertilizer Research Program, 2009).

According to the Wisconsin Department of Natural Resources (2009), inappropriately disposed of pharmaceutical wastes pollute our soil and water. When these pharmaceuticals enter the human body, they can act as endocrine disrupters, promote antibiotic resistance, or interact with other medications. When pharmaceuticals enter the ecosystem, fish and animals are affected similarly. Wisconsin's Department of Agriculture, Trade and Consumer Protection

(2009) Clean Sweep Program, a grant program offered to municipalities for the collection of pharmaceuticals and other hazardous business or personal wastes, should be expanded.

Appendix 19

Background and Support for Objective 2: By 2010, reduce the incidence of illness and death from respiratory diseases related to or aggravated by environmental and occupational exposures.

Asthma

Asthma is a disease which affects the ability to breathe and carry oxygen in and out of the lungs (CDC, 2009a). Certain irritants in the air can exacerbate the symptoms of asthma. These irritants are known as triggers, and some of the most common outdoor examples are exercise, diesel fuel, allergens such as pollen, smoke or air pollution. According to the CDC, a type of air pollution called particulate matter is associated with increased hospital admissions related to asthma. Although there is no cure for asthma, reducing exposure to triggers can reduce the severity of disease (CDC, 2009a).

In 2007, the Wisconsin Department of Health and Family Services published *The Burden of Asthma*. This document described asthma prevalence, costs, and disease management. Asthma prevalence for adults and children reached an all time high of 13% in 2005. Due to asthma exacerbations, 20% of adults reported being unable to carry out usual activities at least one time in the last month, and students reported missing more school within the last 30 days than their peers. The average cost per hospitalization was $8,251. Hospitalization and ER visits cost the state over $60 million annually (Wisconsin Department of Health and Family Services, 2007).

There are significant asthma diagnosis and treatment disparities with regard to race, geographic location and socioeconomic status (Wisconsin Department of Health and Family

Services, 2007). The lifetime prevalence of asthma is nearly twice as high in non-Hispanic African Americans as in non-Hispanic whites. African American residents are hospitalized with a rate 5 times that for whites. African American residents had an asthma mortality rate 3.5 times that for whites. Milwaukee County ranks second among counties for asthma hospitalizations and has the highest emergency department visit rate. Menomonee County, comprised largely of Native Americans, has the third highest hospitalization rate and the second highest emergency department rate. Adults with an income less than $15,000 were more likely to have asthma than those whose income is greater than $25,000 (Wisconsin Department of Health and Family Services, 2007).

A recent review by Lyon-Callo, Boss, & Lara (2007), highlighted state-based policy changes which decreased the burden of asthma. Assuring access to quality asthma care is essential. Screening and education programs can be implemented at the community level in low-income neighborhoods. Reducing environmental triggers in homes, schools, and workplaces can be achieved by creating standards, housing codes, smoking bans, 'healthy homes' educational interventions and asthma programs that are language and culturally appropriate. Reducing environmental triggers in outdoor areas can be achieved by using integrated pest management, tightening fuel economy standards, improving public transportation, and banning school bus idling (Lyon-Callo, Boss, & Lara 2007). Because the Wisconsin Asthma Coalition (2009), reported 5-14% of adults have work-related asthma, proper surveillance of these individuals is necessary to explore more targeted, occupational hazard intervention.

Radon

Radon is a radioactive gas which is released from the natural decay of uranium in rocks and soil (National Cancer Institute, 2009). Cell damage can result when these radioactive particles enter the human body through the respiratory system. Chronic exposure to radon gas is the second leading cause of lung cancer in the United States. The U.S. Environmental Protection Agency estimates about 1 in 15 U.S. homes have radon levels exceeding the standard of 4 picocuries per liter (pCi/L). If radon levels were reduced in these homes, lung cancer deaths would decrease an estimated 2-4 %. Radon testing costs between $20- $350 (Environmental Law Institute, 1993). The cost of radon mitigation is currently estimated at $800-$2500 per home (National Cancer Institute, 2009). The cost to build radon resistant homes is minimal, about $300 with no additional energy costs. The method involves a PVC ventilation pipe which has shown to reduce indoor radon levels by 50 % (Wisconsin Department of Health Service, 2008). Although Wisconsin does not have building codes which require radon prevention, the city of Madison implemented building standard code number 4.22 which requires radon resistance new construction (EPA, 2010).

Radium, the radioactive and metallic form of radon, can be found in water. However, 90% of the risk related to radium in the water is related to inhalation of radon released from water during household use. Although the EPA does not currently regulate radium under the Safe Drinking Water Act, the standard is set at 4000pCi/L for community wells. Methods to remove radium from the water include aeration and filtration. Removing radium from wells is complex and costs $3-5,000 over 10 years; the small reduction in risk may not justify the cost to the homeowner. (Wisconsin Department of Health Services, 2008). When radium is found in municipality water, actions should be taken to mitigate. According to the DNR, 42 municipal

water systems were found to have increased radium levels; this number was reduced to 11 by 2008 (Wisconsin of Department of Natural Resources, 2010).

In Wisconsin, radon testing is not required or standardized (Wisconsin Department of Health Services, 2008). Home kits may be purchased over the phone and by mail to be measured by the Wisconsin Radiological Labs or the State Lab of Hygiene. A listing of about 70 individuals certified for radon mitigation by the National Environmental Health Association and National Radon Safety Board is maintained on the Wisconsin Department of Health Services Website (2009). Though certification exists for the State of Wisconsin, testing and mitigation is not required to be done by a certified professional. The 1993 report from the Environmental Law Institute is a document which outlines incremental policy changes to promote the awareness and protection from the risk of radon.

Many states have been proactive to promote the awareness and reduce the risks related to environmental exposure to radon (Environmental Law Institute, 1993). According to a representative from the EPA, the State of Illinois has the most strict legislation regarding the testing and mitigation of radon in residential housing (personal interview, 3-12-2010). Illinois requires that radon testing and mitigation be completed by certified professionals (Illinois Emergency Management Agency, 2006). Further, the seller of a real estate property is required to provide a radon pamphlet to the buyer and disclose any radon status they are aware of. The state is also actively working to create building code standards which prevent radon risk. These efforts have increased awareness of radon and put the state in a position to mitigate risk to its residents.

Mesothelioma

Mesothelioma is a lung disease which has historically been exclusively associated with asbestos exposure. According to Price & Ware (2009), 58% of the 2,400 U.S. cases of mesothelioma in 2008 were likely caused by asbestos exposure. Mesothelioma can also be caused by mineral fiber exposure, such as eronite, or therapeutic radiation. In some cases the cause is unknown; these cases are known as 'background cases.' As a consequence of discontinuing the use of asbestos, nearly all mesothelioma will be 'background cases' after 2042. Environmental and occupational exposure to asbestos is no longer a primary concern due to successful regulatory efforts (Price & Ware, 2009). More evidence is needed to determine non-asbestosis causes of mesothelima.

In 2000, the rate of mesothelioma was higher (18 per 100,000) than the national rate (10.5 per 100,000) (Islam & Anderson, 2006). This increased rate is inconsistent with Wisconsin's lower incidence of asbestosis hospitalization and death rates. This may be indicative of low and undetectable asbestos exposure which is high enough to lead to malignancy. Asbestos containing buildings such as schools and factories are common throughout Wisconsin (Islam & Anderson, 2006). Although the death rate for mesothelioma increased between 2000 (55) and 2007 (62) (Appendix 7), the number of mesothelioma deaths is expected to peak in 2010 (CDC: MMWR, 2009). Rates are predictable due to the measurable decrease in asbestos use and the known duration between exposure and disease (20-40 years) (CDC: MMWR, 2009).

Due to the restriction of asbestos and the current indeterminate cause of background mesothelioma cases, tracking incidence of mesothelioma should not be a priority in Healthiest Wisconsin 2020.

Pneumoconiosis, and other lung illness

Pneumoconiosis is a non-malignant respiratory diseases caused by inhalation of mineral dust (Khalil, Churg & Muller, 2007). This illness presents as coal worker's pneumoconiosis, silicosis, asbestosis, hard metal lung disease, mixed dust pneumoconiosis, graphitosis, berylliosis, and talcosis. Increased industrial hygiene measures have successfully prevented these diseases. Coal worker's pneumoconiosis is not common in Wisconsin because there are no coal mines located in the state (Islam & Anderson, 2007). Silicosis may occur within sandblasting, scouring powder manufacture, dental technician, and farming industry. In 2000, the rate of silicosis is higher in Wisconsin (1.4 per 100,000) compared to the national rate (0.7 per 100,000). This increased rate may be due to the many foundries and ceramics companies located in Wisconsin (Islam & Anderson, 2007). Berylliosis may occur after exposure to beryllium, a low density metal found in rocks, soil, coal and volcanic dust. Hard metal lung disease is caused by host susceptibility and exposure to metals such as tungsten, carbide, and cobalt (Khalil, Churg & Muller, 2007).

Pneumoconiosis is a progressive lung disease which takes years to develop; decreasing the rate by 30 % in ten years is probably unrealistic. Healthiest Wisconsin 2020 should focus on the type of pneumoconiosis which is a risk for Wisconsin residents—namely, silicosis.

Appendix 20

Background and Support for Objective 3: By December 31, 2010, the incidence of occupational injury, illness, and death will be reduced by 30 %.

According to Islam & Anderson (2006), the direct and indirect costs of work-related illness and injury exceed $1 billion annually in Wisconsin. These illnesses and injuries are preventable, and the first step toward prevention is surveillance. Currently, there is no national surveillance system which tracks occupational hazards; however, the State of Wisconsin received a 3 year grant through the National Institute for Occupational Safety and Health (NIOSH) to track 19 occupational health indicators. The findings were summarized in the Occupational Health in Wisconsin 2006 annual report published by the Wisconsin Division of Public Health. Fatal injuries remain high despite prevention efforts. Most work-related fatalities occurred during motor vehicle operation within the farming and labor/construction occupations (Wisconsin Division of Public Health, 2006).

In Wisconsin, most non-fatal, work-related hospitalizations were for musculoskeletal disorders and acute injury (Wisconsin Division of Public Health, 2006). The rate of work-related musculoskeletal injury is higher in Wisconsin (691) compared to the national average (496). All injuries which required a day off included carpel tunnel, neck, shoulder and back injuries. In 2003, 93% of workers who needed to take days off from work for a musculoskeletal injury did so for a back, neck or shoulder type of injury. Although only 7% of missed work was related to carpal tunnel syndrome, this disorder cost Wisconsin's workers compensation insurance $7 million annually from 2000-2004 (Wisconsin Division of Public Health, 2006).

According to a comprehensive review of 47 CDC and other published studies, occupational wellness programs provide positive outcomes (Geotzel, 2009). The study concluded wellness programs show a consistent return on investment by decreasing medical costs, absenteeism, and short-term disability. Additionally, the study found participants made positive behavior changes, reduced risky behaviors made health improvements, and their quality of life was increased. Policy to support workplace wellness programs include the Tom Harkin's Healthy Workforce Act (S. 1753) which would provide tax credits to the company (Geotzel, 2009). State or local municipalities could invest in fitness programs for government employees to pilot and further study the effectiveness of these strategies.

Lead poisoning among the adult population is considered an occupational public health hazard (Wisconsin Division of Public Health, 2006). More than 900 occupations, such as construction and primary metal industries, are associated with lead use. High blood lead levels in the adult population may cause permanent adverse effects such as abdominal pain, headaches, and anemia. An additional concern is the adult may unknowingly expose their children to lead by bringing it home on clothing. In 2003, the prevalence of adult blood lead levels >25mg/dL in Wisconsin was higher (14) than the national average rate (8.2); however, the Wisconsin rate has decreased from 28.8 in 2000 to 15.6 in 2004. This decrease is due to awareness efforts and the Wisconsin Adult Blood Lead Epidemiology and Surveillance program which tracks blood lead results over time (Wisconsin Division of Public Health, 2006).

According to the American Medical Association (AMA) in 2004, between 2,900-3,000 occupational health professionals are required to protect the health of Wisconsin's workers; however, only 2,000 were employed. This AMA estimate is based on the need to have 100 professionals per 100,000 employees. The number of occupational health professionals in

Wisconsin has remained stable (about 62 per 100,000 residents) for the last five years (Wisconsin Division of Public Health, 2006). An increase in occupational health professionals is critical especially in Wisconsin where the percentage of workers in industries with a high risk of morbidity and mortality is greater compared to the national average (Wisconsin Division of Public Health, 2006).

Appendix 21

Background and Support for Objective 4: By December 31, 2010, reduce by 50% the incidence of illness and death related to chemical and biological contaminants in the home.

Lead

Lead poisoning can occur at any age; however, it is especially critical in children because lead interferes with the normal neurological development of a child (Wisconsin Department of Health and Human Services, 2008). Lead poisoning can result in attention disorders, developmental delays, anemia, hearing loss, kidney damage, reduced physical growth, and in high concentrations cause coma and death. Lifelong consequences of lead poisoning include: high school dropout, juvenile delinquency, aggression, teen pregnancy, and adult criminality. Even minimal exposure may predispose a child to long-term health effects (Wisconsin Department of Health and Human Services, 2008).

Although living in the Milwaukee and Racine communities is considered a risk factor for lead poisoning, lead poisoned children were found in each of Wisconsin's 72 counties. Children are most frequently exposed to lead through lead-based paint found in housing (Wisconsin Department of Health and Human Services, 2008). The sale of lead based paint was banned across the US in 1978, but remains in many older homes. Re-painting with a non-leaded paint is effective to remove the hazard; however, windows usually need to be replaced completely. It is estimated that a health savings of $40-50,000 could result for *each* Wisconsin child under the age of six who is protected from lead poisoning through replacement of home windows (Wisconsin Department of Health and Human Services, 2008).

According to the Report on Childhood Lead Poisoning in Wisconsin, 1 out of 20 Wisconsin children entering the school system in the fall of 2006 had elevated blood lead levels. (Wisconsin Department of Health and Human Services, 2008). That same year, 2.6% of all Wisconsin children tested for blood lead were found to be lead poisoned; this is more than twice the 2006 national average of 1.2%. Over the past decade, Wisconsin has been ranked within the top nine states with the greatest burden of lead poisoned children (Wisconsin Department of Health and Human Services, 2008).

Lead poisoning has been associated with low family income, race/ethnicity, the age of the child, and the age of the house (Wisconsin Department of Health and Human Services, 2008). In 2006, 86% of Wisconsin children diagnosed with lead poising were enrolled in either Women, Infants, and Children (WIC) or Medicaid. The prevalence rate for these children was 3 times higher than among children who were not enrolled in these programs. Lead poisoning rates are highest among African American children, followed by Hispanic and Asian children (Appendix 16). Between 2000 and 2008, the number of all children identified with lead poisoning has decreased markedly. Further, the disparity between the African American and white children has decreased by 10% during that same time period. Developmentally, children have frequent hand to mouth behavior during 18 and 36 months of age; blood lead levels are highest among children of this age range. About 90% of children poisoned by lead live in housing which was built before 1950 (Wisconsin Department of Health and Human Services, 2008).

According to measurements taken from the 2000 census, 31.5% of homes built in Wisconsin were built before 1950 (CDC, 2009b). Furthermore, 41.34% of homes were built between 1950 and 1979. Older houses tend to be in close proximity; the children who occupy these homes tend to have elevated blood levels. If the census tracks were ordered by density of

children with elevated blood levels and the top 10% of these locations abated all pre-1950s built there, 76% of all potential future lead poisonings would be prevented (Wisconsin Department of Health and Human Services, 2008). The objective to rehabilitate 120,000 homes was developed based upon this housing assessment.

Progress toward the objective was delayed due to inadequate funding. According to a Wisconsin Lead Prevention Program specialist, 5,000 homes built before 1950 will be destroyed annually. Additionally, approximately 1,500 homes will be made lead-safe annually through the Federal Housing Urban Development Community Development Block Grant. Recommendations from the Lead Prevention Program re-iterate those previously announced from the Public Health Council in 2007: creation of an annual fund of $10 million allocated to lead hazard control measures, creation of a window replacement loan fund, and legislation allowing for the development of a local or statewide housing trust fund dedicated to lead hazard control. These plans to date have not been funded and/or implemented.

Carbon Monoxide

Carbon monoxide is an odorless, colorless, and tasteless hazardous gas which is formed by the incomplete burning of wood, kerosene, gasoline, and other fuels (Wisconsin Department of Health, 2000). It can also be found in cigarette smoke and vehicle exhaust. It is the most common cause of fatal poisonings. About 50% of all carbon monoxide poisonings occur in the home, 40% are automobile related and 10% occur in work settings. Exposures can be avoided by using a carbon monoxide detector, not running vehicles or burning combustibles indoors, not using a gas oven to heat the home, and not riding in campers or other vehicles being towed by another vehicle. Toxic exposure may lead to dizziness, a headache, loss of consciousness and

death (Wisconsin Department of Health, 2008). White middle-aged males are disproportionately affected (Appendix 15).

Exposure to Second hand Smoke

According to the 2006 surgeon general report, second hand smoke is associated with an increased risk of disease and premature death in children and adults who do not smoke (Ahrens, Anderson, Jovaag, Kuo, & Palmersheim, 2008). A report by the University of Wisconsin Paul P. Carbone Comprehensive Cancer Center estimated that 800 deaths were associated with exposure to second hand smoke between the years 2000 and 2004 in the State of Wisconsin. Exposed children are at risk for lower respiratory illness, middle ear diseases, sudden infant death syndrome, and compromised lung function. A causal relationship had been found between parental smoking and asthma diagnosis in school-aged children (Ahrens, Anderson, Jovaag, Kuo, & Palmersheim, 2008). In a recent meta-analysis by Meyers, Neuberger, & He, (2009), the risk of acute myocardial infarction decreased by 17% in locations which recently implemented a smoking ban. Wisconsin will implement a smoking ban July 5, 2010 which will affect all public places including hotels, restaurants and bars as well as specified outdoor locations (Wisconsin Legislative Council, 2009).

About 211,000 Wisconsin children are exposed to second hand smoke in their homes (Ahrens, Anderson, Jovaag, Kuo, & Palmersheim, 2008). Public campaigns have been successful strategies to encourage smoke free homes and public buildings. Based on four, tobacco-use surveys, cessation and education programs have encouraged an increase of homes with *no smoking* policies, from 37% in 1992 to 75% in 2006. Furthermore, in 2005, 84% of homes with children were smoke free; this surpasses the state goal of 80% (Ahrens, Anderson,

Jovaag, Kuo, & Palmersheim, 2008). Tobacco cessation and education programs are clearly effective.

As indicated in Appendix 15, approximately half of African American or American Indian high school and middle school students currently live with a smoker, nearly ten percentage points higher than any other race category. Public health efforts must continue tobacco cessation and education efforts while targeting these high risk populations.

Appendix 22

Short, Medium, and Long Term Goals for Objective #5: By 2010, Enhance the Quality of Life in Wisconsin through Improvements in Environmental Health Indicators for Air, Land, and Water

Source: Healthiest Wisconsin 2010 – Health Priority Logic Model

Short-Term Outcome Objective (2002-2004)

- Improve attitudes toward individual behaviors that contribute positively to environmental quality.
- Increase awareness of health concerns related to decreased environmental quality.
- Promote creation of local groundwater protection advisory committees.
- Increase use of Geographical Information Systems to link environmental and epidemiological data.
- Increase collection and analysis of environmental data.

Medium-Term Outcome Objective (2005-2007)

- Increase use of integrated pest management techniques.
- Increase use of environmentally-friendly consumer packaging.
- Increase use of pollution prevention practice in industry (e.g., waste minimization, alternative chemicals, etc.).
- Increase use and capacity of public transportation.
- Increase use of alternative fuels.
- Increase use of 'no-till' and other erosion control strategies.
- Develop and implement sound regional land use planning strategies.
- Reduce per capita water consumption.
- Reduce non-point sources of water pollution.
- Increase capacity of local governments to assess land, water, and air quality issues.

Long-term Outcome Objectives (2008-2010)

- Preserve and protect wetlands and forested, agricultural and recreational land.
- Reduce industrial and transportation-related air pollution.
- Preserve and protect groundwater, surface water and recreational water resources.
- Preserve and protect species diversity.

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