

Progress Report

Healthiest Wisconsin 2010 Health Priority:

**Existing, Emerging, and Re-emerging Communicable
Diseases**

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Wisconsin Public Health Council
State Health Plan Committee

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Progress Report: Healthiest Wisconsin 2010 Health Priority: Existing, Emerging, and Re-emerging Communicable Diseases

Introduction

Healthiest Wisconsin 2010 is the state health plan for the decade 2000-2010, designed to protect and promote the health of Wisconsin residents. The plan is a collaborative and proactive effort that aims to transform thinking and action among the public health system, with a coinciding focus on eliminating health disparities ¹.

Healthiest Wisconsin 2010 addresses 11 health priorities, all of which affect the health of the residents of Wisconsin. Existing, emerging, and re-emerging communicable diseases is listed as one of the 11 priorities. A communicable disease is any disease that can be transmitted from one individual to another. Emerging communicable diseases result from either changes in or evolution of existing organisms, or from diseases that spread to new geographic areas. Communicable diseases re-emerge by developing antimicrobial resistance or when previously established public health control measures are reduced or eliminated ¹.

Healthiest Wisconsin 2010 Health Priority: Existing, Emerging, and Re-emerging Communicable Diseases has four objectives:

- Statewide Communicable Disease Surveillance and Response
- Vaccine Preventable Diseases and Immunization
- Food Borne and Water Borne Disease Control
- Antimicrobial Resistance

Results

Objective 1: Statewide Communicable Disease Surveillance and Response – Assure the timely detection of, and effective response to, communicable diseases.

According to HFS 145.04(3)(a), category one diseases are to be reported immediately via phone/fax, and a report must be mailed or entered electronically within 24 hours of the identification of a case. HFS 145.04(3)(b) states that category two diseases are to be reported via mail or entered electronically within 72 hours of the identification of a case. The Wisconsin Electronic Disease Surveillance System (WEDSS) is a secure, web-based system designed to facilitate reporting, investigation, and surveillance of communicable diseases in Wisconsin. The system was designed for use by public health staff, infection control practitioners, clinical laboratories, and other disease reporters. Several laboratories throughout the state have a daily electronic feed into the system, while hospital infection control departments have to enter communicable disease reports into the system manually. Statewide implementation continues, and by April 2010, all counties will move to the utilization of WEDSS ².

1a: By 2010, at least 85 percent of communicable disease reports will be received by the local or state public health agency within the timeframe specified by HFS 145.04(3)(a) and HFS 145.04(3)(b).

Performance as of 2008: Of cases reported on WEDSS during 2008 with analyzable date data, 15 percent of Category one diseases were reported within 24 hours, and 16 percent of Category two diseases were reported within 72 hours ².

Performance Status: Improved **Note: At the beginning of 2009, only approximately 30 percent of local health departments (LHDs) were using WEDSS and the ELR function. As of 7/1/2009, 40 percent of LHDs were using WEDSS, covering 80 percent of the Wisconsin population. Thus, the utilization of WEDSS throughout the state is improving quickly. Several limitations have held up reaching the goal of at least 85 percent reporting correctly. Some cases reported on WEDSS have no date of diagnosis, thus there is no way of calculating the delay in report time. Many cases, especially category one diseases, are often initially reported by telephone to LHDs. The actual date of the report may reflect the arrival of the electronic or hard copy, and not the phone contact. Further, electronic reporting is often delayed by approximately 24 hours because of technical issues that arise at the originating laboratory. Issues include verifying positives, blend databases, and the preparation of the outgoing message. The biggest hindrance is that only a handful of providers are submitting reports via WEDSS ².

1b: By 2010, 100 percent of local health departments will have documented capacity to respond to outbreaks of communicable disease as defined in HFS 140.

Performance as of 2004(5): Based on formal reviews of all 94 LHDs, all were found compliant ².

Performance Status: Achieved **Note: The creation and implementation of WEDSS throughout the state gives LHDs the capacity to respond to communicable disease outbreaks. Preparedness contracts with LHDs have included epidemiological analyses as specific deliverables as well. Annual state-wide epidemiology meetings have been held since 2004, and multiple regional and local trainings and independent study programs in epidemiology have been offered via the communicable disease epidemiology staff and Public Health consortia. Further, new epidemiologists have been hired at all levels, including the Public Health consortia, DPH regional offices, and at LHDs ².

Recommendations for Healthiest Wisconsin 2020 (HW2020): Mandated reporters, both public and private, that fail to report in the required time frame need to be educated on a case-by-case basis. Individual interventions, such as this, are routinely occurring for time sensitive disease cases. Concern for educational interventions needs to continue in the future.

Objective 2: Vaccine Preventable Diseases and Immunization – Increase to at least 90 percent the percentage of children and adults who are fully immunized with vaccines recommended for routine use by the Advisory Committee on Immunization Practices (ACIP).

2a: By 2010, at least 90 percent of Wisconsin residents under two years of age will be fully immunized in accordance with current Advisory Committee on Immunization Practices (ACIP) recommendations.

The National Immunization Survey (NIS) is a quarterly, random-digit dialing telephone survey that provides vaccination coverage estimates among children aged 19 to 35 months for all 50 states. For the purpose of this report, “Wisconsin residents under two years of age” means Wisconsin residents between 19 and 35 months of age. Further, there are vaccines that the ACIP recommends for children under two years of age (hepatitis A vaccine for example) that the NIS does not measure, and are not included in this report. Thus, for the purpose of Objective 2a, “fully immunized in accordance with current ACIP recommendations” means having received the 4:3:1:3:3:1 vaccination series ³.

The 4:3:1:3:3:1 series is defined as four doses of diphtheria, tetanus toxoid, and any acellular pertussis vaccine (DTaP/DTP/DT), three doses of any poliovirus vaccine, one dose of measles, mumps, and rubella vaccine, three doses of *Haemophilus influenzae* type b (Hib) vaccine, three doses of hepatitis B vaccine, and one dose of varicella vaccine.

Performance as of 2008: 83.7 percent 4:3:1:3:3:1 series complete coverage ³

Performance Status: Improved **Note: From 2002 through 2008, the estimated 4:3:1:3:3:1 series complete coverage of Wisconsin children two years of age increased from 67.5 percent to 83.7 percent. Wisconsin was one of three states to receive an award for “extraordinary accomplishment in achieving 83.7 percent coverage for the basic immunization series among two year old children” at the 2009 National Immunization Conference. The 90 percent coverage target will not be achieved, but as of 2008, no state has achieved such coverage for the 4:3:1:3:3:1 series³. Despite Wisconsin’s success, various pockets of low immunization remain throughout the state.

2b: By 2010, at least 97 percent of Wisconsin school-age residents will be fully immunized in accordance with current ACIP recommendations.

Different methods are used to estimate vaccine coverage among kindergarteners and among school-aged children. Immunization Program personnel record doses of vaccines documented on kindergarten children’s school immunization records from a sample of randomly selected elementary schools in Wisconsin.

Overall school-age immunization coverage estimates are derived from Student Immunization Law compliance results which are summarized from annual reports that public and private schools submit to the Immunization Program through LHDs to comply with requirements in DHS 144.

“Fully immunized in accordance with current ACIP recommendations” means having received the 4:4:2:3:1 vaccination series, or having met minimum requirements in the Wisconsin student immunization law, which is less rigorous than the ACIP recommendations. The 4:4:2:3:1 vaccination series is defined as having four doses of DTaP/DTP/DT, four doses of poliovirus vaccine, two doses of measles, mumps, and rubella vaccine, three doses of hepatitis B vaccine, and one dose of varicella vaccine³.

Performance as of 2007 (Pre-K through 12): There has been some variation from year to year from 2000 through 2007; however, the average percentage of students meeting minimum requirements did not change substantially³.

Performance as of 2008 (Kindergarteners): Percentage of kindergarteners having received 4:4:2:3:1 series has remained in the low 80s³.

Performance Status: No Progress **Note: Vaccine compliance is influenced by many factors. The percentage of students with a nonmedical exemption in grades kindergarten through 12 have increased in Wisconsin, from 0.8 percent during the 1992-1993 school year to 3.1 percent during the 2005-2006 school year, although having an exemption on file does not mean that a parent refused all vaccines. The Milwaukee Public School system underwent a computer system change during the 2003-04 school year and did not produce vaccine data for this time period. Thus, the apparent increase in compliance in 2003 was probably inaccurate. Also, the phase-in of the varicella requirement to include high school

students in 2005 probably caused a real decrease in compliance, as older students are less likely to have received a required vaccine³.

2c: By 2010, at least 90 percent of Wisconsin residents 65 years of age and older and individuals with chronic health conditions will be fully immunized in accordance with current ACIP recommendations.

National Behavioral Risk Factor Surveillance Survey (BRFSS) data was used to measure progress towards this objective. “Fully immunized in accordance with current ACIP recommendations” means having received influenza and pneumococcal vaccines, however, there are several other vaccines that the ACIP recommends for persons age 65 and older that the BRFSS does not measure³.

This objective addresses two groups of people; those who are age 65 and older, and those with chronic health conditions. Neither the BRFSS nor any other national tool measures broad vaccine coverage among persons with chronic health conditions³.

Performance as of 2007 (Wisconsin residents age 65 and older): 74.1 percent influenza vaccine coverage of Wisconsin adults aged ≥ 65 years (17.2 percent increase from 1995). 69.4 percent pneumococcal vaccine coverage of Wisconsin adults aged ≥ 65 years (33.6 percent increase from 1995)³.

Performance as of 2010 (Wisconsin residents with chronic health conditions): Data are not available to measure progress towards this objective.

Performance Status (Wisconsin residents with chronic health conditions):
Unknown

Performance Status (Wisconsin residents age 65 and older): **Improved**

Recommendations for HW2020: The new objective, reflecting 2010 Objective 2a should mirror the vaccine and age parameters used in the NIS: By 2020, at least 90 percent of WI residents aged 19 to 35 months will be fully immunized as defined and measured by the NIS or another national or state tool. The expected level of coverage remains the same, and the “or” phrase permits the use of some method other than the NIS to measure progress³. Specific attention needs to be given to areas of low immunization and to monitor and raise awareness of public and private insurance coverage for immunizations.

The new objective, reflecting 2010 Objective 2b should specify compliance with immunization requirements, as opposed to immunization coverage, which means having either the required immunization dates or an immunization waiver on file: By 2020, at least 95 percent of Wisconsin kindergarteners will be compliant with DHS 144 immunization requirements, as determined by the Wisconsin Kindergarten Assessment³.

An additional objective is suggested as well, targeted to adolescents: By 2020, at least 75 percent of Wisconsin residents aged 11-12 years will have received all of the doses of vaccine that the ACIP recommends for adolescents, as measured by the WIR. Note: Currently, less than 50 percent children, age 11 to 18 in Wisconsin have received one of the vaccines in the current adolescent platform, so the suggested target of 75 percent may be difficult to achieve.

The new objective, reflecting 2010 Objective 2(c) should focus strictly on one age group, the elderly age 65 and older, and should specify that coverage for vaccines included in the BRFSS will be the ones measured: By 2020, at least 90 percent of Wisconsin residents 65 years of age and older will be fully immunized in accordance with current ACIP recommendations as measured by the BRFSS or other state or federal assessment tool³. Additional vaccines are recommended by the ACIP that should be included in the BRFSS and in HW2020³.

Immunization review should be included as part of chronic disease management as well.

Objective 3: Food Borne and Water Borne Disease Control – Reduce disease caused by reportable food borne and waterborne pathogens.

The collaborative efforts of Wisconsin's Division of Public Health (DPH), the State Laboratory of Hygiene (SLH), and the Centers for Disease Control and Prevention (CDC) have helped introduce new technologies that aid in the detection of many harmful food borne and water borne diseases. SLH is now routinely running pulsed field gel electrophoresis (PFGE) on eight enteric pathogens. The introduction of PulseNet National Database used to match PFGE patterns has increased the detection of multistate outbreaks due to products in nationwide distribution, thus having the ability to pick up outbreaks that may not have been noticed prior to the new technology.

Other key interventions for food borne and water borne disease control include training in illness investigations being offered to every LHD for the past ten years. This includes ongoing guidance on antimicrobial resistance of enteric pathogen and product recalls for example. DPH has collaborated with SLH, via biweekly phone calls regarding proficiency testing of other laboratories and ongoing PFGE data. DPH has also received grant funding from the CDC to establish a permanent team of Masters of Public Health students to assist in interviewing during outbreak investigations.

Food borne illness has shifted from the traditional, discreet outbreak (such as the classic church picnic scenario) to illnesses that are caused by nationally distributed products, giving the state health department less control. More food products are being imported from other countries with less stringent requirements as well².

3a: By 2010, the incidence of E. coli O157:H7 infection will be 3 per 100,000 or less.

Performance as of 2008: 2.7 per 100,000 (decrease from 6.8 per 100,000 in 2000)⁴

Performance Status: Achieved

3b: By 2010, the incidence of salmonellosis will be 8 per 100,000 or less.

Performance as of 2008: 13.2 per 100,000 ⁴

Performance Status: No Progress **Note: The incidence of 14.3 per 100,000 in 2000 was used as the baseline for comparison.

3c: By 2010, the incidence of shigellosis will be 4 per 100,000 or less.

Performance as of 2008: 9.6 per 100,000 ⁴

Performance Status: No Progress **Note: The incidence of 14 per 100,000 in 2007 was primarily due to the shigellosis outbreak in the Milwaukee area. Prior to this incident, incidence of shigellosis decreased from 6.3 per 100,000 in 2000 to 4.3 per 100,000 in 2006 ¹.

3d: By 2010, the incidence of campylobacteriosis will be 11 per 100,000 or less.

Performance as of 2008: 22.5 per 100,000 ⁴

Performance Status: No Progress

3e: By 2010, the incidence of hepatitis A will be 1 per 100,000 or less.

Performance as of 2008: 0.6 per 100,000 (decrease from 2 per 100,000 in 2000)⁴

Performance Status: Achieved **Note: The primary cause of lower rates of Hepatitis A can be attributed to the widespread use of the hepatitis A vaccine, which was universally recommended in 2005. Since then, the incidence of the disease has been under the set objective of one per 100,000 ².

Recommendations for HW2020: As incidence rates for salmonellosis, shigellosis, and campylobacteriosis have not been reduced over the past 10 years, these objectives should be retained. However, implementation plans will require scrutiny and perhaps innovative strategies. Supportive advocacy for systems that improve efficiency for pathogen detection is needed as well.

Following CDC recommendations, include *Listeria monocytogenes* among the microbial pathogens tracked by Healthiest Wisconsin ⁵.

Objective 4: Antimicrobial Resistance – Ensure that the use of antibiotics and antimicrobials is appropriate.

4a: By 2010, at least 95 percent of medical antibiotic usage in Wisconsin will be appropriate according to generally accepted medical standards.

There are many interventions that the Bureau of Communicable Disease (BCD) has led. Both Vancomycin-Intermediate/Resistant *Staphylococcus aureus* (VISA/VRSA), two specific types of antimicrobial-resistant staph bacteria, were added to the list of Wisconsin reportable diseases. In 2008, a survey of general acute and critical access hospitals collected baseline hospital-acquired Methicillin-resistant *Staphylococcus aureus* (MRSA) rates. Guidelines were issued on healthcare-associated (HA) MRSA prevention and control in healthcare settings, clinical management of community-associated (CA) MRSA, and controlling CA MRSA among students and athletes. A MRSA website was developed as well, containing resource materials for those interested. Numerous presentations on MRSA were given to healthcare facility staff, LHD staff, schools, daycares, and athletic coaches. Further, BCD and SLH designed a pilot laboratory-based surveillance program to detect changes in antibiotic susceptibility of CA MRSA, however, some private healthcare partners have been reluctant to participate without Institutional Review Board (IRB) approval ².

Grant funding from (CDC) was obtained for the Wisconsin Antibiotic Resistance Network (WARN) project. This fostered collaboration with the Marshfield Clinic, and included a public education campaign and testing of invasive *S. pneumoniae* isolates for antimicrobial susceptibility. Since the expiration of this grant, SLH has continued *S. pneumoniae* susceptibility testing. There has also been a statewide workshop by SLH in 2008 on anti-microbial susceptibility testing, which included 100 participants representing 53 laboratories ².

Federal funding for state health departments to develop hospital acquired infection (HAI) programs was obtained after recognition of HAIs as a major public health problem. The Wisconsin DPH launched a two year HAI prevention project in September, 2009 to develop a statewide HAI prevention plan, generate state-specific HAI incidence rates, and enhance HAI prevention activities in Wisconsin hospitals. One specific goal of this prevention program is to reduce HAIs caused by MRSA. The standardized incidence rate of HA MRSA infections in the U.S. was approximately 26.5 per 100,000 in 2005. The U.S. DHS *Action Plan to Prevent Healthcare Associated Infections* includes a national goal to reduce invasive HA MRSA infections by 50 percent over the next five years. The Wisconsin DPH HAI Prevention Plan includes strategies to reduce invasive HA MRSA infections among patients in participating hospitals. During the initial stages of the project, baseline infection rates will be obtained. Specific goals of the plan include reduction of invasive HA MRSA infections by 10 percent in the next two years and by 50 percent in the next five years ².

Performance as of 2010: Data are not available to measure progress towards this objective.

Performance Status: Unknown **Note: Resources have not been available to evaluate the effect of guidelines, workshops, and other efforts to reduce antibiotic use ².

4b: By 2010, at least 90 percent of poultry and livestock producers in Wisconsin will adhere to generally accepted standards for antibiotic feed supplementation.

Performance as of 2010: Data are not available to measure progress towards this objective.

Performance Status: Unknown **Note: Antibiotic use in animals and residue levels is regulated federally by the United States Department of Agriculture (USDA), the Food and Drug Administration (FDA), and the Environmental Protection Agency (EPA). USDA Food Safety and Inspection Services (FSIS) head the National Residue Testing Program (NRTP), which tests for residue in tissues and eggs. Both random and inspector-generated samples are collected, and information is available to states to target state milk testing efforts ².

Recommendations for HW2020: The state of Wisconsin needs to support continued effort of antibiotic and antimicrobial control at the national level, just as it has for HA MRSA prevention.

The American Public Health Association (APHA) and the American Nurses Association (ANA) have made policy proposals to enact legislation that would restrict the use of antibiotics among well livestock populations. The state of Wisconsin needs to support the effort at the national level ⁵. Consistent with APHA and ANA, the Public Health Council should study this topic and consider future recommendations.

Appendix 1: E. coli O157:H7 incidence

Objective 3a: By 2010, the incidence of E. coli O157:H7 infection will be 3 per 100,000 or less.

Incidence of E. coli O157:H7 Infection in Wisconsin

Incidence of E. Coli O157:H7 Infection in Wisconsin Year	Reported Cases	Cases per 100,000 Population
2000	364	6.8
2001	223	4.1
2002	293	5.4
2003	137	2.5
2004	135	2.5
2005	136	2.5
2006	188	3.4
2007	155	2.8
2008	150	2.7

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services.

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

Objective 3b: By 2010, the incidence of salmonellosis will be 8 per 100,000 or less.

Salmonellosis Incidence in Wisconsin

Salmonellosis Incidence in Wisconsin Year	Reported Cases	Cases per 100,000 Population
2000	765	14.3
2001	833	15.3
2002	902	16.5
2003	937	17.0
2004	1,000	18.2
2005	936	16.9
2006	906	16.2
2007	999	17.8
2008	743	13.2

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services.

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

Objective 3c: By 2010, the incidence of shigellosis will be 4 per 100,000 or less.

Shigellosis Incidence in Wisconsin

Shigellosis Incidence in Wisconsin Year	Reported Cases	Cases per 100,000 Population
2000	333	6.2
2001	306	5.6
2002	192	3.5
2003	133	2.4
2004	337	6.1
2005	225	4.1
2006	239	4.3
2007	781	13.9
2008	539	9.6

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services.

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 4: Campylobacteriosis incidence

Objective 3d: By 2010, the incidence of campylobacteriosis will be 11 per 100,000 or less.

Campylobacteriosis Incidence in Wisconsin

Campylobacteriosis Incidence in Wisconsin Year	Reported Cases	Cases per 100,000 Population
2000	1,207	22.5
2001	1,154	21.3
2002	1,182	21.6
2003	1,121	20.4
2004	1,319	23.9
2005	1,173	21.2
2006	1,206	21.6
2007	1,131	20.2
2008	1,266	22.5

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services.

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

Objective 3e: By 2010, the incidence of hepatitis A will be 1 per 100,000 or less.

Hepatitis A Incidence in Wisconsin

Hepatitis A Incidence in Wisconsin Year	Reported Cases	Cases per 100,000 Population
2000	105	2.0
2001	90	1.7
2002	195	3.6
2003	45	0.8
2004	128	2.3
2005	47	0.8
2006	42	0.8
2007	32	0.6
2008	33	0.6

Source: Bureau of Communicable Diseases, Division of Public Health, Wisconsin Department of Health Services
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: Recommendations for Healthiest Wisconsin 2020

Objective	Recommendation
1	Continued concern focused on educational interventions for mandated reporters of communicable diseases who fail to report within a required timeframe
2a	The new objective, reflecting 2010 Objective 2a should mirror the vaccine and age parameters used in the NIS: By 2020, at least 90 percent of WI residents aged 19 to 35 months will be fully immunized as defined and measured by the NIS or another national or state tool. The expected level of coverage remains the same, and the “or” phrase permits the use of some method other than the NIS to measure progress ³ . Specific attention needs to be given to areas of low immunization.
2b	The new objective, reflecting 2010 Objective 2b should specify compliance with immunization requirements, as opposed to immunization coverage, which means having either the required immunization dates or an immunization waiver on file: By 2020, at least 95 percent of Wisconsin kindergarteners will be compliant with DHS 144 immunization requirements, as determined by the Wisconsin Kindergarten Assessment ³ .
2	An additional objective is suggested as well, targeted to adolescents: By 2020, at least 75 percent of Wisconsin residents aged 11-12 years will have received all of the doses of vaccine that the ACIP recommends for adolescents, as measured by the WIR. Note: Currently, less than 50 percent children, age 11 to 18 in Wisconsin have received one of the vaccines in the current adolescent platform, so the suggested target of 75 percent may be difficult to achieve ³ .
2c	The new objective, reflecting 2010 Objective 2c should focus strictly on one age group, the elderly age 65 and older, and should specify that coverage for vaccines included in the BRFSS will be the ones measured: By 2020, at least 90 percent of Wisconsin residents 65 years of age and older will be fully immunized in accordance with current ACIP recommendations as measured by the BRFSS or other state or federal assessment tool. Additional vaccines are recommended by the ACIP that should be included in the BRFSS and in HW2020 ³ .
3b,3c,3d	As incidence rates for salmonellosis, shigellosis, and campylobacteriosis have not been reduced over the past 10 years, these objectives should be retained. Supportive advocacy for systems that improve efficiency for pathogen detection is needed as well.
3	Following CDC recommendations, include <i>Listeria monocytogenes</i> among the microbial pathogens tracked by Healthiest Wisconsin ⁵ .
4a	The state of Wisconsin needs to support continued effort of antibiotic and antimicrobial control at the national level, just as it has for HA MRSA prevention.
4b	The American Public Health Association (APHA) and the American Nurses Association (ANA) have made policy proposals to enact legislation that would restrict the use of antibiotics among well livestock populations. The state of Wisconsin needs to support the effort at the national level ⁵ . Consistent with APHA and ANA, the Public Health Council should study this topic and consider future recommendations.

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