



Legislative Fiscal Bureau

One East Main, Suite 301 • Madison, WI 53703 • (608) 266-3847 • Fax: (608) 267-6873
Email: fiscal.bureau@legis.wisconsin.gov • Website: <http://legis.wisconsin.gov/lfb>

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Joint Committee on Finance

Paper #358

Staffing for Communicable Disease Prevention, Response, and Analysis (Health Services -- Public Health)

[LFB 2021-23 Budget Summary: Page 281, #6; Page 284, #13; and Page 286, #15]

CURRENT LAW

The Division of Public Health (DPH) in the Department of Health Services (DHS) is responsible for a wide array of programs and services that protect and enhance the health of Wisconsin's population. Statutes require DHS to monitor and control outbreaks of disease, act to reduce occupational and environmental hazards, investigate threats to maternal and child health, study and evaluate the health and vital statistics of the state, promote healthy practices and services, and educate the public and policymakers on health. DPH also leads state efforts to ensure access to immunizations, oral healthcare, healthy food, dementia services, family planning services, tobacco prevention and control interventions, and services to prevent and treat opioid abuse, among others.

DPH works directly with the state's 97 local health departments (LHDs) and administers financial assistance to them totaling approximately \$35 million per year in state and federal grant funds. These funds consist of approximately two dozen grant programs focused on particular outcomes and services. DPH also provides grants to community-serving organizations, offers consultation and technical assistance, coordinates public health efforts across jurisdictions and organizations, enforces statutes that protect health and safety, operates the State Laboratory of Hygiene to analyze patient samples for pathogens, and leads statewide public health efforts.

DPH employs 426.3 full-time equivalent (FTE) positions, of which 259.7 (61%) are supported by federal funds, 91.6 (22%) by program revenue, 73.0 (17%) by GPR, and 2.0 (less than 1%) by segregated revenue. These positions staff ten offices and bureaus in DPH. The largest, the Bureau of Community Health Promotion, leads the state's efforts on chronic disease prevention, family health, and the administration of the federal special supplemental nutrition program for

women, infants, and children (WIC). The other large bureaus and offices within DPH include the Bureau of Communicable Disease (BCD), which conducts disease prevention, control, and management; the Office of Health Informatics (OHI), which measures state health indicators and vital statistics and administers the state's vital records program; the Bureau of Aging and Disability Resources, which oversees a variety of services for elderly residents and people with disabilities; and the Bureau of Environmental and Occupational Health, which administers programs to reduce environmental health hazards such as lead, asbestos, and radiation.

The following table shows the current structure and staffing within the DHS Division of Public Health.

Current Structure and Staffing of the Division of Public Health

<u>Bureaus and Offices</u>	<u>GPR Positions</u>	<u>All Funds Positions</u>
Bureau of Community Health Promotion	8.8	92.9
Bureau of Communicable Disease	3.6	69.0
Office of Health Informatics	4.8	68.9
Bureau of Aging and Disability Resources	28.0	58.8
Bureau of Environmental and Occupational Health	5.7	58.6
Office of Preparedness and Emergency Health Care	6.3	28.1
Regional Offices	2.5	16.0
Bureau of Operations	2.7	15.0
Office of Public Health Policy and Practice Alignment	4.4	11.0
Office of the Administrator	<u>6.2</u>	<u>8.0</u>
Total	73.0	426.3

BCD divides its staff roughly evenly among three core functions -- epidemiology, harm reduction, and immunizations, coordinated by 3.0 FTE in the office of the director. Epidemiologists (8.0 FTE positions) and researchers (3.0 FTE) work to monitor and limit how diseases spread within the state and detect and trace outbreaks. They work with 2.0 FTE public health nurses and 2.8 public health educators to inform communities and conduct training in outbreak prevention and response. The epidemiology section also includes 8.0 FTE in other position types. Harm reduction staff conduct outreach to those who have already been infected or are at risk, offering services and education to minimize the negative health effects of disease. This team consists of other public health educators (6.0 FTE), researchers (3.0 FTE), epidemiologists (2.6 FTE), and staff fulfilling other functions (11.0 FTE). Finally, 7.0 FTE public health educators and 3.6 FTE epidemiologists are assigned to BCD's immunization efforts, along with 9.0 FTE performing other functions.

BCD and other sections within DPH also make use of contracted positions when needed. Of note, BCD currently employs 5.0 infection preventionists, supported by federal funds from a temporary grant supplement made by the Centers for Disease Control and Prevention (CDC) in response to COVID-19. These staff work with healthcare providers across the state to prevent

disease transmission within healthcare facilities.

Almost half of the staff in OHI, 33 FTE positions, work in the State Registrar/Vital Records section, which manages the state's birth, death, marriage, and divorce records and issues vital records certificates. OHI's health analytics section comprises 21.0 FTE staff who work to maintain databases on certain public health threats, conduct population health surveys, and analyze and report on health data. In addition, 11.6 FTE staff support information architecture and coordination of the Public Health Information Network (PHIN), allowing public health providers across the state to submit and retrieve patient-level public health data. PHIN includes the Wisconsin Immunization Registry, which has played a key role in the state's COVID-19 immunization effort.

DISCUSSION POINTS

Epidemiology Staff in BCD

1. The Governor's budget bill would provide \$1,564,300 in 2021-22 and \$2,044,100 in 2022-23, and 23.0 positions (17.0 permanent positions and 6.0 four-year project positions), beginning in 2021-22, for BCD to prevent and respond to future outbreaks of communicable diseases.

2. The administration's primary argument for the need to increase BCD staffing is based on evidence of increasing communicable disease threats, both worldwide and in Wisconsin, and the need for an immediate public health response. The CDC reports that the number of human diseases borne by mosquitos, ticks, and fleas worldwide more than tripled from 2004 to 2016. Further, the rapid worldwide spread of the SARS-CoV-2 virus and its variants, which are responsible for the current COVID-19 pandemic, demonstrate the need for increasing resources to prevent and respond to these outbreaks.

3. Other increases in communicable disease threats have been observed in Wisconsin. *Elizabethkingia* are bacteria that are rarely reported to cause illness in humans. However, in 2016, BCD began investigating an outbreak of infections caused by *Elizabethkingia anophelis*. There were 67 total cases reported to DHS during this outbreak, of which 63 were confirmed cases and 18 confirmed deaths. During this outbreak, DHS staff identified effective antibiotic treatment for the disease and alerted health care providers, infection preventionists and laboratories statewide.

4. In 2018, DHS, in collaboration with the CDC and Public Health Madison and Dane County worked with UW Health to respond to an outbreak of Legionnaires Disease (a disease caused by *Legionella* bacteria) associated with the University Hospital in Madison. Fourteen cases were confirmed.

5. Recent and current outbreaks and DHS investigations are listed on the DHS website at <https://www.dhs.wisconsin.gov/outbreaks/index.htm>.

6. In Wisconsin, the incidence of Lyme disease remains a health concern, with 1,121 confirmed cases in 2018. Other types of communicable disease pose growing threats as well. DHS surveillance data indicate that the incidence of hepatitis C, which can be spread by shared needles and

syringes, has risen in Wisconsin in connection with the opioid epidemic, from 42 acute cases in 2013 to 142 in 2018. Rates of chlamydia, gonorrhea, and syphilis infections among Wisconsin residents have increased from 483 per 100,000 residents in 2014 to 702 cases per 100,000 residents in 2019. Moreover, rates of infections resistant to known antibiotic drugs appear to be increasing in health facilities due to changes in protocols and patient censuses necessitated by the COVID-19 epidemic.

7. While some of these threats follow nationwide trends, others are particular to Wisconsin. DHS argues that BCD's current reliance on federal funding to support 93% of its staff (a greater percentage than 61% for the entire Division of Public Health) may leave gaps in its response. For example, according to CDC, the incidence of confirmed cases of Lyme disease in Wisconsin in 2018 (19.3 per 100,000) was more than twice the national average (7.2 per 100,000). Similarly, the incidence of confirmed cases of acute hepatitis C in Wisconsin (2.3 per 100,000) was nearly twice the national average (1.2 cases per 100,000).

8. In supporting staff increases for BCD, the administration makes several additional arguments. First, DHS indicates that, during the past year and a half, BCD has had to direct resources away from many non-COVID-19 priorities, and argues that the need to increase staffing in BCD is immediate, as providing additional positions as soon as possible would allow these other services and responsibilities to resume. DHS indicates that BCD has re-assigned epidemiologists away from other diseases to focus exclusively on COVID-19. Infection preventionists who usually work to prevent and control the spread of antibiotic-resistant infections have suspended this work to develop COVID-19 control measures in healthcare facilities. Other projects related to foodborne and waterborne illnesses, tuberculosis, and a variety of other priorities have been delayed or canceled.

9. Second, DHS argues that hiring additional permanent epidemiologists and public health educators offers the benefit of increased specialization. The current workforce in the epidemiology section includes 8.0 epidemiologists and 2.8 public health educators, who must perform the monitoring, prevention, control, outreach, and health partner training necessary to respond to over 80 different diseases of concern in the state. That level of workload prevents any of these staff from developing or maintaining expertise in specific diseases. Increasing staffing, and hence increasing specialization, may permit BCD to respond more quickly and effectively to future outbreaks of any of these communicable diseases.

10. Another long-term concern is BCD's capacity to respond to the spread of antibiotic-resistant infections, which pose a growing, evolving threat that the CDC describes as one of the most significant global public health challenges today. As previously indicated, BCD is currently using one-time supplemental grant funding from the CDC to support 5.0 infection preventionists. Although currently working on preventing the spread of COVID-19 in healthcare facilities, if maintained with GPR funds these positions would be able to aid in BCD efforts to prevent the spread of antibiotic-resistant infections. Each of the five staff have been assigned to one of the five regions of the state, allowing these positions to establish relationships with the healthcare providers and facilities in their area. The administration argues that these relationships would be lost if the positions are terminated when the grant supplement expires in May 2022.

11. Finally, DHS argues that, as BCD's workload has increased during the past several years, staff capacity has not increased correspondingly. The last staff increase for BCD occurred five years

ago, when BCD was authorized 6.0 federally funded positions to address the Elizabethkingia outbreak.

12. The Committee could adopt the Governor's recommendation to increase staff capacity devoted to BCD's epidemiology efforts by enabling DPH to hire 4.0 permanent epidemiologists, 6.0 epidemiologists on a four-year project basis, 3.0 public health educators, 5.0 infection preventionists, and 5.0 disease intervention specialists, beginning in 2021-22 (Alternative A1) or approximately half of the additional positions recommended by the Governor, beginning in 2021-22 (Alternative A2). The attachment shows staffing and funding under four staffing options presented in this paper.

13. As previously indicated, the one-time increase in CDC funding has supported BCD's COVID-19 related efforts. The availability of these one-time funds suggests that there may not be a short-term need to increase state support for BCD to address the COVID-19 pandemic. Accordingly, Alternatives A3 and A4 defer providing any new positions until 2022-23.

14. Based on recent guidance provided by the Department of Treasury, it appears that federal funds the state will receive as part of the State Fiscal Relief Fund created under the federal American Rescue Plan Act (ARPA) could also be used to support public health staff, but only to the extent that the staff time is spent mitigating or responding to the COVID-19 public health emergency. Using ARPA funds to provide positions dedicated to COVID-19 response could allow BCD staff to return to some pre-pandemic priorities and activities, but ARPA funds cannot be used to provide the expanded capacity proposed by the Governor. The positions discussed in this paper may spend a portion of their time responding to COVID-19, but have the primary goals of increasing epidemiological capacity to respond to other diseases, improving response to complex infections, and reducing the spread of antibiotic-resistant infections.

15. By providing additional positions in 2021-22, BCD could immediately assign staff to work relating to antibiotic-resistant infections, even while maintaining the surge capacity necessary to respond to COVID-19. Observation in Wisconsin in recent months of increasing resistance in carbapenem-resistant *Acinetobacter baumannii* (CRAB) offer one argument for providing these positions without delay.

16. The five disease intervention specialists that would be funded under the Governor's proposal would perform testing, case investigation, and contact tracing within BCD's harm reduction section, focusing on diseases that require specialized training and response, including syphilis, co-infections of syphilis and HIV, antibiotic-resistant gonorrhea, and others. Prevention and control of these diseases is currently performed by five CDC employees who have been assigned to Wisconsin. The CDC indicates that the agency will no longer replace these employees as they retire or otherwise depart, creating a gradual need for state employees to take on these responsibilities if they are to continue. Considering that these employees are not expected to depart immediately, the Legislature could consider staffing increases for this work in the future. As previously noted, Alternatives A3 and A4 would defer providing any of these positions in 2021-22, and Alternatives A2 and A4 would provide 2.0 disease intervention specialists, so that the remaining three positions could be phased in as needed in future biennia.

17. As noted above, the expiring infection preventionist positions are currently assigned one

to each of five regions, and have developed relationships with the providers and facilities in their region. Alternatives A2 and A4 maintain 3.0 of these positions; the Committee could provide an additional \$188,900 in 2022-23 and 2.0 additional positions, beginning in 2022-23 (Alternative A5), to allow BCD to maintain the current team in their assignments to each of the five public health regions of the state.

Harm Reduction Field Team in BCD

18. The Governor's budget would provide \$189,300 GPR in 2021-22 and \$246,000 GPR in 2022-23 to support 3.0 GPR additional positions, beginning in 2021-22, to create a "strike team" in the harm reduction section of BCD to provide services related to communicable diseases and opioid use directly in locations accessible to individuals with unmet needs. Under the proposal, the team would use a mobile clinic or other vehicle to bring harm reduction expertise and essential services to locations across the state with spikes in opioid overdoses and outbreaks of diseases such as hepatitis C and HIV, which can be spread through shared needles and syringes. The team would consist of 1.0 public health nurse, 1.0 behavioral health specialist, and 1.0 benefits navigator and income determination specialist. These staff would provide opioid-related services, including overdose rescue using naloxone, training in naloxone use, and referrals to medication-assisted treatment providers; communicable disease prevention and harm reduction services, including COVID-19 testing and vaccination, HIV and hepatitis C counseling and testing, harm reduction materials distribution, hepatitis A and B vaccination, and mobile syringe exchange; and other services such as wound care, insurance enrollment, and assistance with housing instability, utility needs, interpersonal violence, and transportation needs.

19. DHS reports that similar efforts focused only on hepatitis A vaccination in locations such as homeless shelters, tent cities, and other non-typical vaccination sites where people with elevated risk congregate have proven successful in several states, including Indiana, Tennessee, Kentucky, California, and Utah. These efforts are consistent with recommendations from the CDC's Advisory Committee on Immunization Practices to incorporate hepatitis vaccination into settings that provide services to adults.

20. The harms associated with the opioid epidemic and related rise in diseases transmitted among injection drug users suggest the need for additional resources devoted to a harm-reduction response, as proposed by the Governor. However, focusing efforts on preventing opioid use, as opposed to treating the harms resulting from it, also carries distinct advantages. Research published in the *Journal of Infectious Diseases* in July, 2019, concludes that a combined approach dedicating resources to both prevention and harm reduction is most effective. This team would complement existing preventative programs.

21. The administration indicates that the field team could also contribute to controlling the spread of the SARS-CoV-2 virus. The team could increase capacity to provide COVID-19 vaccinations in certain locations, such as homeless shelters or congregate housing for agricultural workers, where high-risk populations may be disconnected from other healthcare providers and be less likely to seek out the vaccinations from other sources. While ARPA funds could be used to support these initial activities of the team, the primary goal of these positions is to respond to other communicable diseases and the opioid epidemic, activities that cannot be supported with ARPA

funds.

22. The option to provide these positions is offered under Alternative B1.

Health Data Analysis and Predictive Modeling Staff in OHI

23. The Governor's bill would provide \$162,400 GPR in 2021-22 and \$213,500 GPR in 2022-23 to fund 2.0 positions, a senior statistician and a modeler, to form a data analysis team in the Office of Health Informatics (OHI). This team would develop statistical, visualization, and communication tools to analyze trends over time, geography, and demographic groups for a wide variety of health conditions. It would also provide modern modeling capabilities to predict future developments.

24. These positions would assist the Division in responding to the current COVID-19 pandemic, and improve the Division's understanding of how to address other public health threats, such as opioid use, mental health conditions, health disparities, and environmental threats, such as per- and polyfluoroalkyl substances (PFAS). DHS believes that if it could interpret the geographic patterns and trends exhibited by public health threats over time, it would enable the state's response efforts to preemptively target areas with the greatest need.

25. According to DHS, the COVID-19 pandemic has demonstrated the utility of indicators such as disease activity burden and predictions of coming surges, and believes that, had it already had this analytic capability, it could have more quickly produced indicators and predictions to address the COVID-19 pandemic. Further, DHS argues that increasing this capability in OHI could also offer better analysis of health threats in areas with small populations, such as rural counties or villages, for which modern statistical techniques are better able to identify trends with limited data.

26. DHS does not currently have resources for predictive modeling of disease outbreaks. This team would include a modeler, allowing for precise understanding of how an outbreak or other public health threat is expected to evolve, based on complex current and historical data. Modern modeling capabilities would also allow the division to investigate the predicted effects of various interventions, providing guidance to policymakers responding to new and evolving situations.

27. Research published by the CDC in May, 2021, finds that Utah used statistical models early in the decision-making and implementation process of their COVID-19 response strategy, which achieved a relatively high level of control over the virus without requiring aggressive social distancing mandates. The study identifies advantages of state-specific modeling teams with knowledge of local context and direct avenues for feedback and discussion with policymakers, as opposed to reliance on national or other external models that were produced for COVID-19.

28. As with the other positions discussed in this paper, ARPA funds could not be used to support these positions in OHI because their primary role is not to respond to COVID-19 but to improve DPH's capabilities and performance in response to other threats.

29. The option to provide these positions is offered under Alternative C1.

ALTERNATIVES

A. Epidemiology Staff in BCD

1. Provide \$1,564,300 in 2021-22 and \$2,044,100 in 2022-23, and 23.0 positions (17.0 permanent positions and 6.0 four-year project positions), beginning in 2021-22, for BCD to prevent and respond to future outbreaks of communicable diseases.

ALT A1	Change to Base	
	Funding	Positions
GPR	\$3,608,400	23.00

2. Provide \$801,700 in 2021-22 and \$1,047,500 in 2022-23, and 12.0 positions (9.0 permanent positions and 3.0 four-year project positions), beginning in 2021-22, for BCD to prevent and respond to future outbreaks of communicable diseases.

ALT A2	Change to Base	
	Funding	Positions
GPR	\$1,849,200	12.00

3. Provide \$2,044,100 in 2022-23 and 23.0 positions (17.0 permanent positions and 6.0 four-year project positions), beginning in 2022-23, for BCD to prevent and respond to future outbreaks of communicable diseases.

ALT A3	Change to Base	
	Funding	Positions
GPR	\$2,044,100	23.00

4. Provide \$1,047,500 in 2022-23 and 12.0 positions (9.0 permanent positions and 3.0 four-year project positions), beginning in 2022-23, for BCD to prevent and respond to future outbreaks of communicable diseases.

ALT A4	Change to Base	
	Funding	Positions
GPR	\$1,047,500	12.00

5. Provide \$188,900 in 2022-23 and 2.0 positions, beginning in 2022-23, for BCD's infection preventionist team. If combined with Alternative A2 or A4, this Alternative would increase the total number of infection preventionist positions in 2022-23 to 5.0 positions, allowing BCD to maintain the current team in their assignments to each of the five public health regions of the state.

ALT A5	Change to Base	
	Funding	Positions
GPR	\$188,900	2.00

6. Take no action.

B. Harm Reduction Field Team in BCD

1. Provide \$189,300 in 2021-22 and \$246,000 in 2022-23, and 3.0 positions beginning in 2021-22, to create a field team in BCD dedicated to harm reduction.

ALT B1	Change to Base	
	Funding	Positions
GPR	\$435,300	3.00

2. Take no action.

C. Health Data Analysis and Predictive Modeling Staff in OHI

1. Provide \$162,400 in 2021-22 and \$213,500 in 2022-23, and 2.0 positions, beginning in 2021-22, to create a data analysis team in OHI consisting of a senior statistician and a modeler, dedicated to analyzing health metrics and creating predictive models to inform public health responses.

ALT C1	Change to Base	
	Funding	Positions
GPR	\$375,900	2.00

2. Take no action.

Prepared by: Carl Plant
Attachment

ATTACHMENT

Alternative Staffing Increases for Bureau of Communicable Diseases

	Positions		Funding		
	<u>2021-22</u>	<u>2022-23</u>	<u>2021-22</u>	<u>2022-23</u>	<u>2021-23</u>
Alternative A1 (Governor)					
Epidemiologists	4.00	4.00	\$259,500	\$338,400	\$597,900
Four-Year Project Epidemiologists	6.00	6.00	389,200	507,500	896,700
Public Health Educators	3.00	3.00	194,600	253,800	448,400
Infection Preventionists	5.00	5.00	360,500	472,200	832,700
Disease Intervention Specialists	<u>5.00</u>	<u>5.00</u>	<u>360,500</u>	<u>472,200</u>	<u>832,700</u>
Total	23.00	23.00	\$1,564,300	\$2,044,100	\$3,608,400
Alternative A2					
Epidemiologists	2.00	2.00	\$129,800	\$169,200	\$299,000
Four-Year Project Epidemiologists	3.00	3.00	194,600	253,800	448,400
Public Health Educators	2.00	2.00	116,800	152,300	269,100
Infection Preventionists	3.00	3.00	216,300	283,300	499,600
Disease Intervention Specialists	<u>2.00</u>	<u>2.00</u>	<u>144,200</u>	<u>188,900</u>	<u>333,100</u>
Total	12.00	12.00	\$801,700	\$1,047,500	\$1,849,200
Alternative A3					
Epidemiologists	0.00	4.00	\$0	\$338,400	\$338,400
Four-Year Project Epidemiologists	0.00	6.00	0	507,500	507,500
Public Health Educators	0.00	3.00	0	253,800	253,800
Infection Preventionists	0.00	5.00	0	472,200	472,200
Disease Intervention Specialists	<u>0.00</u>	<u>5.00</u>	<u>0</u>	<u>472,200</u>	<u>472,200</u>
Total	0.00	23.00	\$0	\$2,044,100	\$2,044,100
Alternative A4					
Epidemiologists	0.00	2.00	\$0	\$169,200	\$169,200
Four-Year Project Epidemiologists	0.00	3.00	0	253,800	253,800
Public Health Educators	0.00	2.00	0	152,300	152,300
Infection Preventionists	0.00	3.00	0	283,300	283,300
Disease Intervention Specialists	<u>0.00</u>	<u>2.00</u>	<u>0</u>	<u>188,900</u>	<u>188,900</u>
Total	0.00	12.00	\$0	\$1,047,500	\$1,047,500