health policy institute of ohio

Ohio **public health** basics

January 2013

What is public health?

The World Health Organization defines public health as "the science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society."[1] To accomplish its mission of assuring that people live in healthy conditions, the public health system:

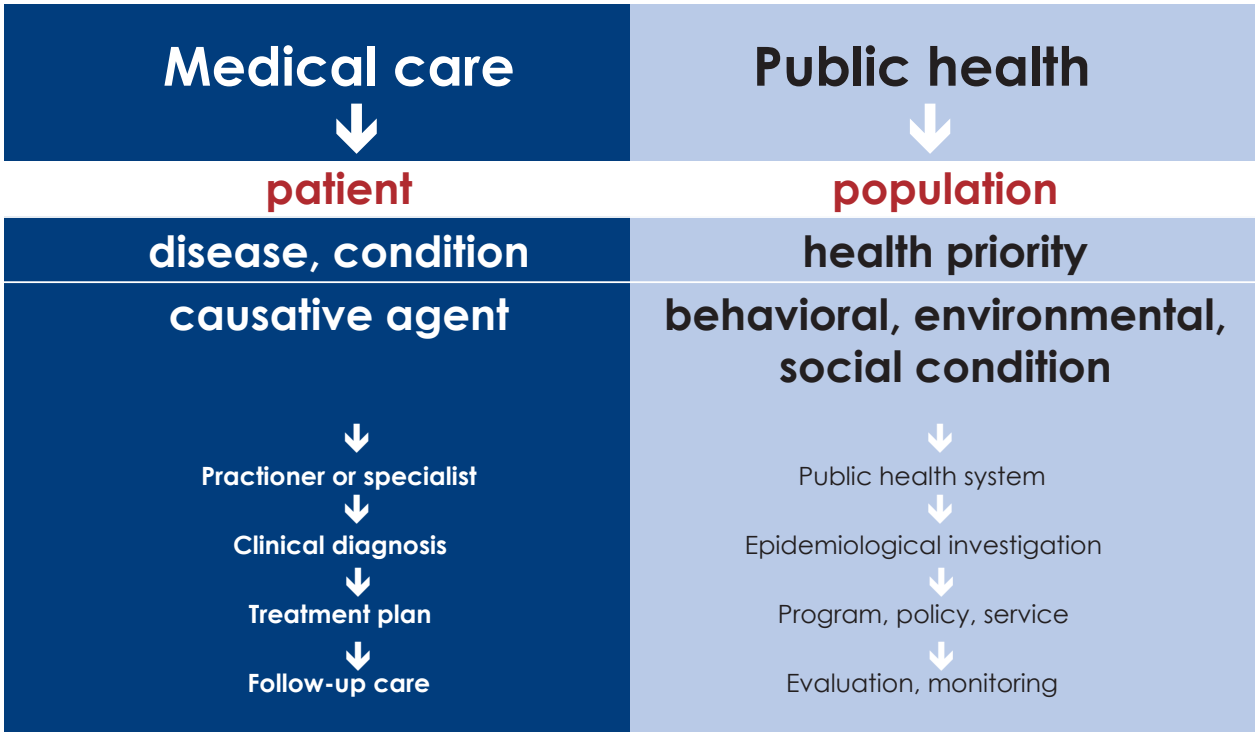
- Prevents epidemics and the spread of disease
- Protects against environmental hazards
- Prevents injuries
- Promotes and supports healthy behaviors
- Responds to disasters and assists communities in recovery
- Assures the quality and accessibility of health services[2]

Although it works closely with the medical care and social service systems, the field of public health is distinct from other approaches to improving health because of its primary focus on:

- ***Populations and groups*** of residents, rather than individual patients (see Figure 1)
- ***Prevention*** of health problems before they occur, rather than treatment of existing diseases or conditions
- ***All factors that affect health***, including social and economic factors, the physical environment, health behaviors, access to health care and health equity

The public health system is made up of both public and private organizations that work to advance the overall health of the population, including local, state, and federal government agencies and nonprofit, community-based groups. This publication focuses on ***state and local governmental public health***, which is charged with the responsibility of leading the public health system within Ohio and assuring that public health functions are provided in local communities.

figure 1. **Medical care and public health**



Source: Public Health 101: A Short Course, The Center for Public Health Practice, The Ohio State University College of Public Health, 2012.

Public health activities

The three core functions of public health defined by the Institute of Medicine in 1988[3] and the *Ten Essential Public Health Services* developed by the US Centers for Disease Control and Prevention (CDC) in 1994, provide a framework for public health services and responsibilities.

Figure 2. **10 Essential Public Health Services**

3 Core Functions	10 Essential Public Health Services	Description*	Examples
Assessment	1.Monitor health status to identify and solve community health problems.	Understand health issues at the community level	Local health department conducts a Community Health Assessment and identifies troubling trends in substance abuse and motor vehicle crashes
	2.Diagnose and investigate health problems and health hazards in the community.	Identify and respond to health problems or threats	Communicable disease nurse and an epidemiologist track the source of a salmonella outbreak
	3.Inform, educate, and empower people about health issues.	Keep people informed about health issues and healthy choices	State health department helps to launch a community awareness campaign about dangers of prescription painkillers and how to dispose of unwanted medications
Policy Development	4.Mobilize community partnerships and action to identify and solve health problems.	Engage people and organizations in health issues	County health department brings the local hospital, United Way, and Head Start together to improve access to dental care for low-income families
	5.Develop policies and plans that support individual and community health efforts.	Plan and implement sound health policies	State health department provides suggested wording for tobacco-free campus policies
	6.Enforce laws and regulations that protect health and ensure safety.	Enforce public laws and regulations to protect health and ensure safety	Local board of health monitors improvements being made by a restaurant that has been cited for food safety violations
	7.Link people to needed personal health services and assure the provision of health care when otherwise unavailable.	Make sure people receive the medical care they need	Home visitor helps a mother apply for Medicaid
Assurance	8.Assure competent public and personal health care workforce.	Maintain a competent public health and medical workforce	CDC provides training on bioterrorism preparedness, violence prevention, and lead abatement
	9.Evaluate effectiveness, accessibility, and quality of personal and population-based health services.	Evaluate and improve programs	Quality Improvement Director assesses the impact of an immunization outreach campaign
	10.Research for new insights and innovative solutions to health problems.	Support innovation and identify and use best practices	Researcher identifies successful strategies for getting young children to eat more fruits and vegetables

*** Source:** Centers for Disease Control and Prevention, "National Public Health Performance Standards Program: Orientation to the Essential Public Health Services presentation," Undated. Accessed November 29, 2012. Website for Program: http://www.cdc.gov/nphpsp/overview.html

Public health leadership and partnerships

National leadership and funding

Nationally, the CDC is the principal leader of public health priorities, research, training, and communications. The CDC provides infrastructure for population health data and surveillance, including the National Center for Health Statistics, and the laboratory and epidemiological capacity necessary to investigate disease outbreaks.

In addition to the CDC, public health priorities are guided by independent panels of experts that review evidence and determine which strategies are most effective in improving health. Key panels currently influencing the direction of public health include:

- **The Institute of Medicine (IOM)**. Independent, nonprofit organization. As the arm of the National Academy of Sciences responsible for informing decision makers about health care, the IOM issues authoritative guidance on medical care and public health.
- **The US Preventive Services Task Force (USPSTF)**. Independent panel of experts in preventive medicine and primary care convened by the US Department of Health and Human Services (HHS). Conducts reviews of evidence on the effectiveness of clinical preventive services (such as screening, counseling, and preventive medications) and develops recommendations for primary care clinicians and health systems.
- **National Prevention Council (NPC)**. Representation from 17 health-related federal departments, agencies, and offices. Provision of the Affordable Care Act. Developed the 2011 National Prevention Strategy.
- **Prevention Advisory Group**. Non-federal members convened by HHS to provide guidance to the National Prevention Council. Provision of the Affordable Care Act.

A network of national associations, such as the American Public Health Association, and their state-level affiliates, such as the Ohio Public Health Association, also play a critical role in guiding the direction of population health strategies, advocating for public health, and training the public health workforce (see Figure 3).

The CDC is a major funder of prevention activities at the national, state, and local level. Several additional federal agencies provide public health funding including the US Department of Agriculture (USDA), which funds the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Health Resources and Services Administration (HRSA), which funds medical care access programs.

Other federal partners include the US Public Health Service, a uniformed corps of public health officers led by the US Surgeon General, and the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Food and Drug Administration (FDA), which are regulatory agencies supporting public health goals.

State, local, and private partners

At the state level, the Ohio Department of Health (ODH) coordinates many aspects of the public health system; and health commissioners and boards of health lead local health departments (LHDs). While government agencies at the federal, state, and local levels provide significant leadership and funding, public health strategies are also implemented by several prominent nongovernmental organizations (such as the American Heart Association, the American Academy of Pediatrics, Mothers Against Drunk Driving, the Red Cross, Robert Wood Johnson Foundation, etc.), and in partnership with other private and public institutions, such as schools, hospitals, community-based health centers, YMCAs, and law enforcement.

Taken together, this broad network of public and private organizations working to advance population health is often referred to as the "public health system" (see Figure 4).

figure 3. **Public health associations**

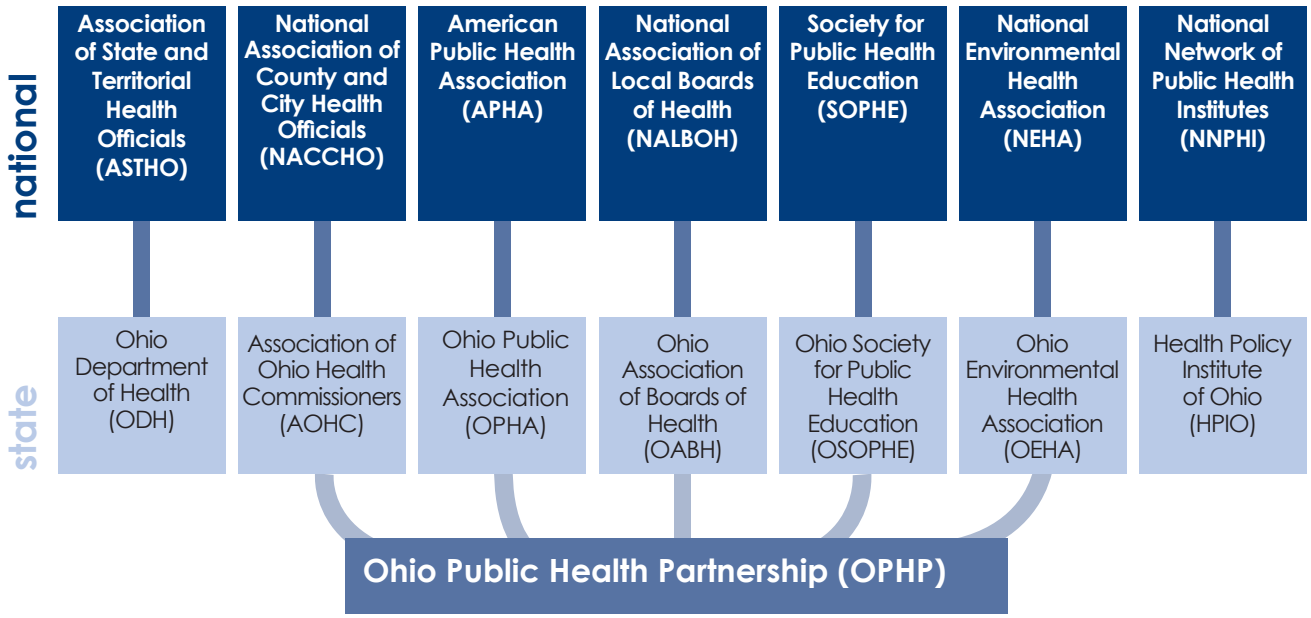
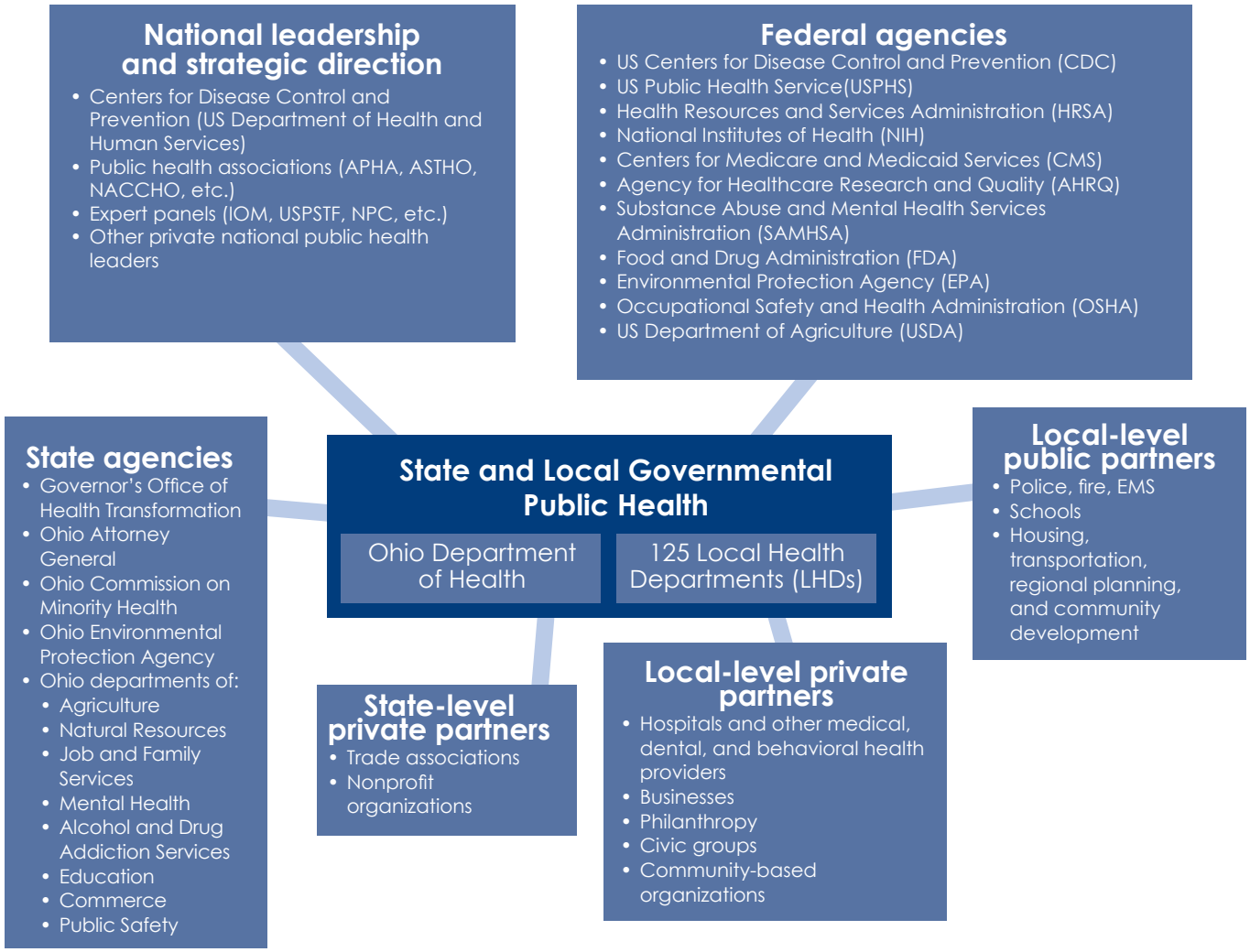


Figure 4. **The public health system**

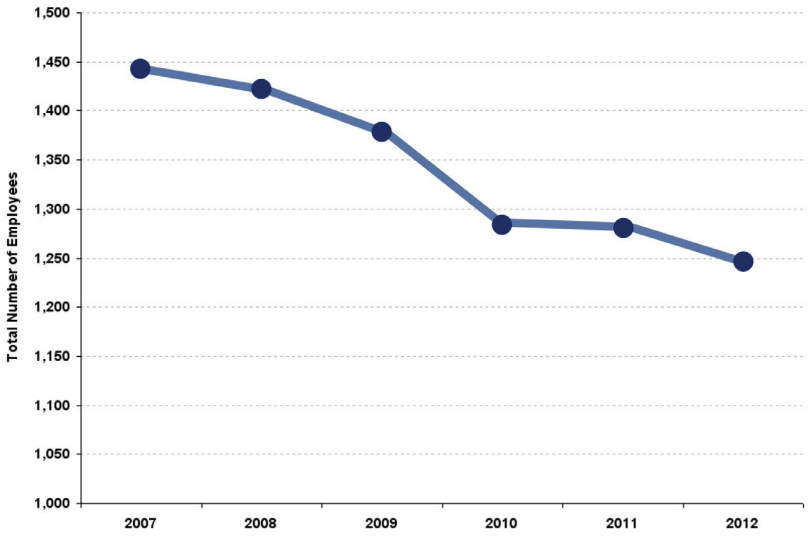


Public health workforce

The public health workforce includes epidemiologists, biostatisticians, and vital statistics registrars who collect, analyze, and manage data for monitoring health trends. Registered sanitarians conduct environmental health inspections. Community health planners mobilize partnerships to develop and implement strategic plans and advocate for policy changes. Nurses and physicians provide clinical care, while social workers, community health workers, and home visitors reach out to residents to help them access care and engage in healthy behaviors.

Within the past decade, the size of the public health workforce has been shrinking. National surveys of LHDs conducted by the National Association of County and City Health Officials (NACCHO) show widespread job losses and program cuts in Ohio from 2009 to 2011. For example, 72% of Ohio LHD representatives surveyed reported loss of staff through layoffs or attrition during 2009, higher than 46% nationwide.[4] The number of ODH employees also has declined from 1,442 in 2007 to 1,245 in 2012 (see Figure 5).

Figure 5. **Total Number of Ohio Department of Health Employees, 2007 to 2012**



Note: Includes full-time, part-time, and temporary employees.
Source: Ohio Department of Health, March 2012

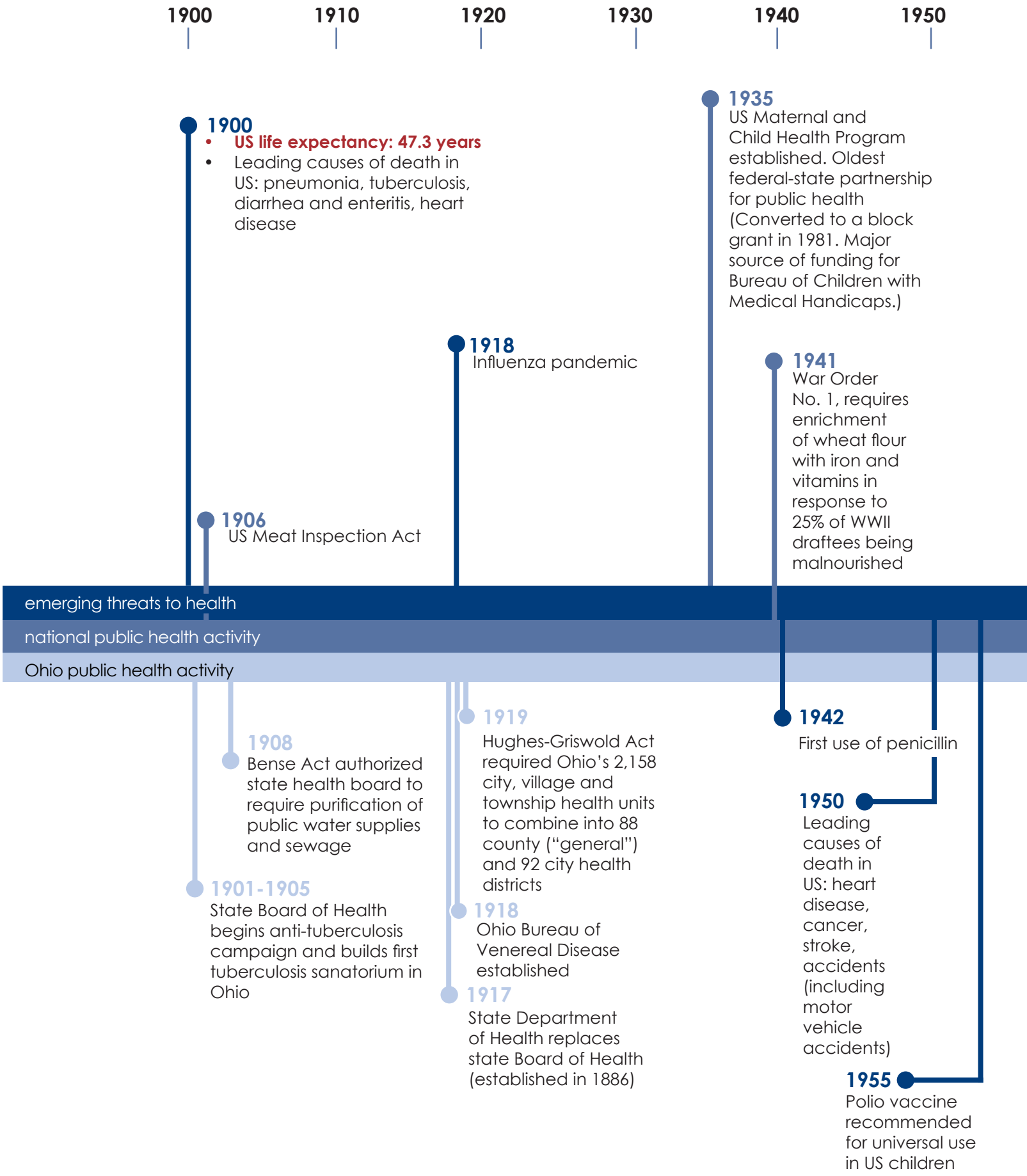
A brief history of public health

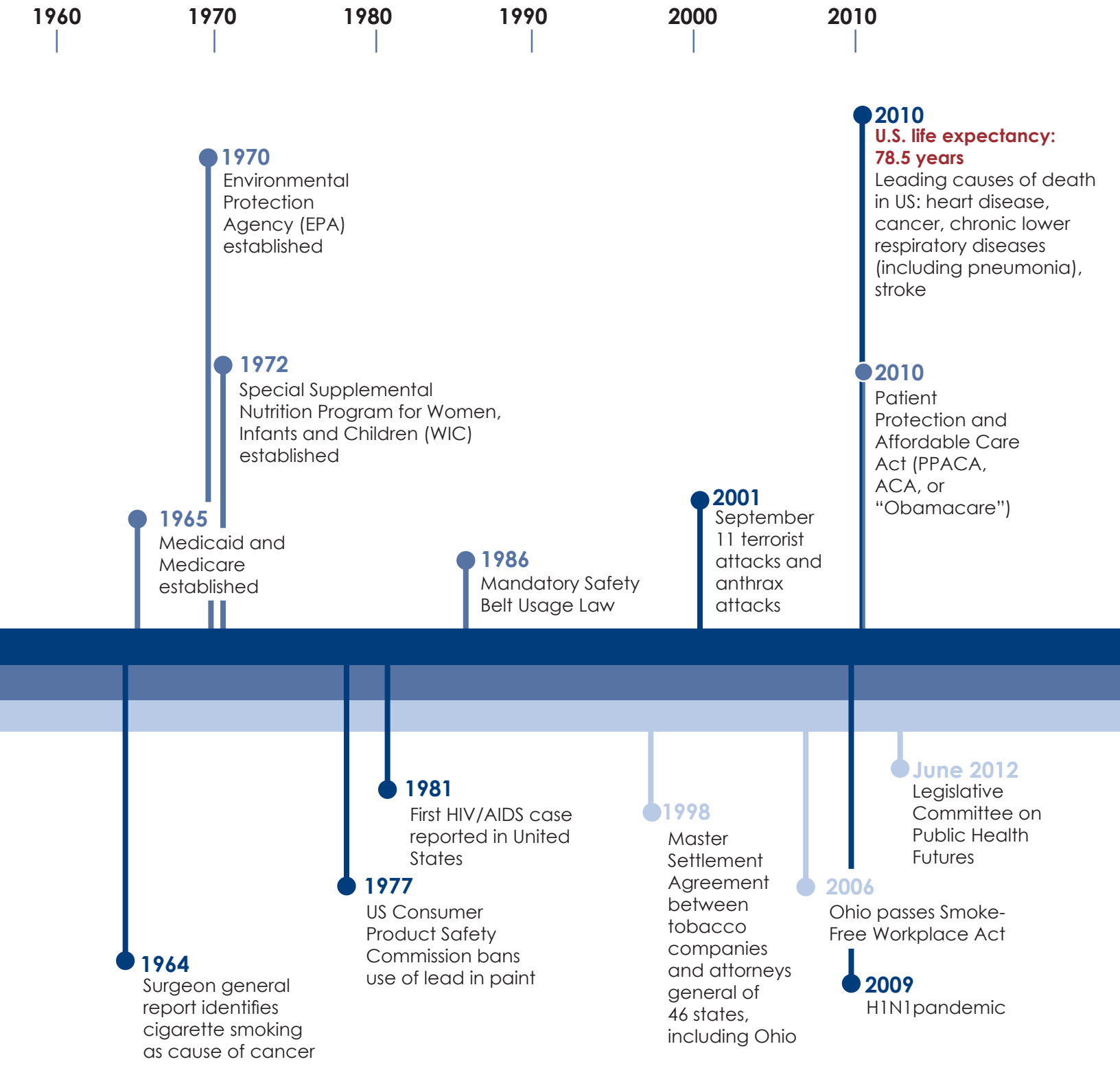
Public health began as a way for communities to control the spread of infectious diseases such as smallpox, polio, tuberculosis, and cholera. Local boards of health first began to appear in Ohio in urban areas in the early 1800s in response to disease outbreaks. These early public health efforts focused on sanitation, water safety, and quarantine authority.

Throughout the 20th century, successful public health efforts and scientific advances have greatly extended life expectancies, and the primary threats to health have transitioned from communicable diseases such as influenza and tuberculosis, to chronic conditions such as heart disease, diabetes, and cancer. The following eras highlight the ways that public health services have evolved to meet emerging health needs and to changes in the broader health care system:[5]

- **1880s to 1930s: Contagion Control & Investigation.** Foundation of today's environmental health protections, including food safety, water and solid waste sanitation, and communicable disease tracking and control.
- **1940s to 1970s: Delivering Services.** Public health develops infrastructure for delivering vaccinations and creates programs to increase access to health care for vulnerable populations and improve maternal and child health.
- **1980s to 1990s: Health Promotion and Disease Prevention.** Development of evidence-based strategies to prevent specific health problems, such as HIV/AIDs and teen pregnancy, and to reduce health risks, such as tobacco use, unsafe driving, obesity, and violence.
- **1990s to present: Population Health.** Shift toward comprehensive prevention strategies that address the social and economic context of individual behavior. Disaster preparedness infrastructure is strengthened in response to terrorist attacks and threat of emerging global pandemics.

Figure 6. **Timeline of public health in Ohio and the US**





Sources: The Sanitarians: A history of American public health. John Duffy. And CDC 10 great public health achievements in the 20th Century http://www.cdc.gov/about/tengpha.htm Life expectancy data are from National Vital Statistics Reports. Vol. 61 (3): September 24, 2012.

What is the value of public health?

Major public health achievements

The average life expectancy for a child born in 1900 in the US was 47.3 years. By 2008, the average life expectancy had grown to 78.1 years.[6] Researchers have estimated that public health advances were responsible for 25 of the 30 years of life gained in the 20th century.[7]

Achievements gained through public health from 1900 to 2010 include:[8]

- **Vaccination and control of infectious diseases.** Development and distribution of vaccines led to the eradication of small pox, elimination of polio in the Americas, and a vast reduction in the number of children killed by measles, diphtheria, pertussis and other diseases. Environmental health (clean water and improved sanitation) reduced deaths from diarrhea, typhoid, and cholera, which were common in the early 20th century and major causes of infant mortality. Access to antibiotics helped control tuberculosis and sexually transmitted infections.
- **Motor vehicle safety.** Policy changes to make vehicles and roadways safer (mandatory seat belts and child safety seats, air bags, highway design) and education to change personal behavior (seat belt and motorcycle helmet use, drinking and driving) helped to reduce the annual death rate per 100 vehicle miles traveled by 90% from 1925 to 1997.
- **Workplace safety.** Policy change, research, education, and regulation led to significant reductions in work-related health problems such as coal miners' "black lung" and severe injuries and deaths caused by on-the-job accidents.
- **Safer and healthier foods.** Food inspections, pasteurization, and other food supply safety measures have greatly reduced the incidence of food and water-borne diseases such as botulism, typhoid, scarlet fever, and trichinosis. Food fortification requirements have eliminated major nutritional deficiency diseases such as rickets, goiter, and pellagra.
- **Maternal and child health.** From 1915 through 1997, the US infant mortality rate declined more than 90%, and from 1900 through 1997, the maternal mortality rate declined almost 99%. These dramatic improvements are due to many factors, including environmental health (clean water and improved sanitation), improved nutrition, advances in clinical medicine and obstetric care, access to prenatal care, increased education levels and improved living conditions. Publicly-funded family planning services have greatly reduced unintended pregnancies and lengthened spacing between births, thereby decreasing infant and maternal mortality and improving the social and economic status of women.
- **Fluoridation of drinking water.** Since 1945, fluoridation has been used as a cost-effective and equitable method for preventing tooth decay and tooth loss in the US.
- **Decline in deaths from heart disease and stroke.** Although heart disease and stroke have been among the top four causes of death in the US since the 1920s and 30s, public health efforts and medical advances helped to reduce deaths from heart disease by 56% between 1950 and 1996. Risk factor modifications, such as smoking cessation and blood pressure control, combined with improved access to early detection and better treatment are largely responsible for these improvements.
- **Tobacco control.** Education about the health hazards of tobacco use and secondhand smoke, state and federal excise taxes on cigarettes, smoke free laws, restrictions on advertising and youth access, and increased access to evidence-based tobacco cessation and prevention programs have combined to cut the percent of adults who smoke from 42% in 1965 to 19% in 2010[9], preventing millions of smoking-related deaths.[12]

Public health's current role in improving population health and controlling health care costs

Public health strategies responsible for dramatic improvements in health over the past 100 years continue into the 21st century: enforcement of regulations to monitor and improve the safety of food, air, water, roads, and workplaces; policy change to improve community conditions; education to prompt behavior change; and filling in gaps in the health care system and linking vulnerable populations to medical services. Public health leaders are adapting these strategies to address the current threats to health, including the growing burden of chronic diseases such as diabetes, heart disease, and depression, and risk factors such as obesity and exposure to violence.

The burden of preventable health problems and rising health care costs

One of the central challenges to the US health care system is the struggle to provide value — defined as health outcomes achieved per dollar spent. The US leads the world in medical research and advanced clinical care, and spends far more on health care than any other country.[10] Yet our population health outcomes indicate that we are not getting a good return on our health care dollar. For example, US ranked 51st in life expectancy in 2012, behind countries such as Jordan and Bosnia.[11]

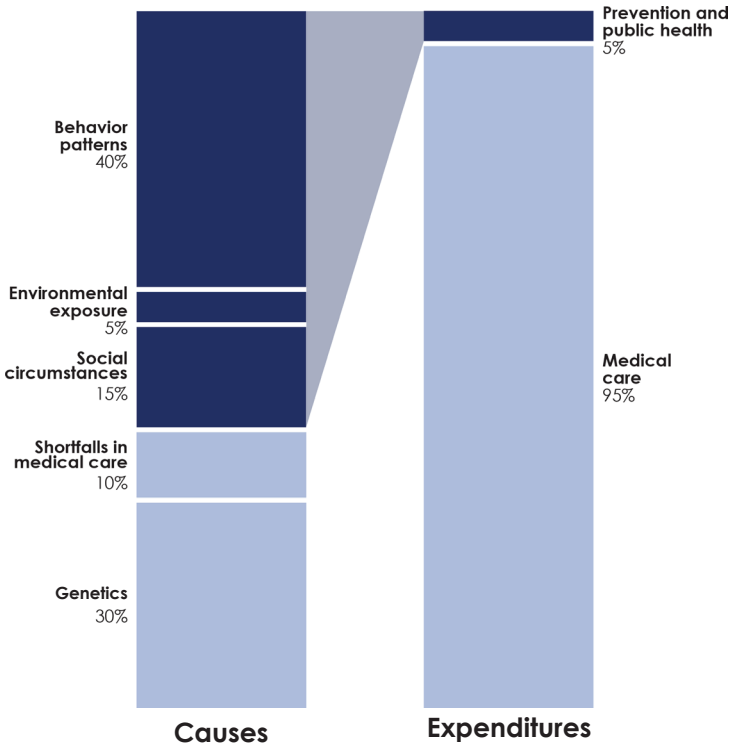
An analysis of 16 industrialized nations found that the US had the highest rate of deaths amenable to health care, behind countries such as Ireland and Greece.[12] Ohio is very similar to the US overall in this regard. Ohio's per capita health care spending is higher than the US state average,[13] yet Ohio ranks 37th in overall health outcomes, behind other Midwestern states such as Wisconsin, Illinois, Michigan and Indiana.[14]

One of the reasons for this relatively poor value is that most US health spending goes to clinical medical care,[15] or "sick care," rather than to prevention,[16] thereby missing opportunities to stop health problems before they become too burdensome and costly. A 2002 study estimated that behavior patterns (40%), environmental exposures (5%), and social circumstances (15%) together contribute more than half of the causes of premature death,[17] indicating that excellent medical care is not enough to improve population health (see Figure 7).

The rise of chronic diseases over the past 20 years is partly the result of this lack of balance between treatment and prevention. High rates of potentially-preventable causes of death (such as chronic diseases, accidental injuries, suicide, and homicide) contribute to shorter life expectancies in the US. A 2005 study of projected US life expectancy published in the *New England Journal of Medicine* concluded that the steady rise in life expectancy over the past two centuries may soon level off, largely due to increases in obesity.[18]

In addition, more than 75% of US health care spending is on "sick care" for individuals with chronic conditions.[19] In Ohio, consumers with one or more chronic condition represent about one-third of Medicaid enrollment, but consume roughly two-thirds of Medicaid spending.[20] Obesity and other risk factors for chronic disease are contributing to the rise in health care costs. From 1987 to 2001, increases in the proportion of spending on people with obesity relative to people with normal weight were responsible for 27 percent of the rise in per capita health care spending nationwide.[21] Overall,

Figure 7. **Estimated contributions to causes of premature death vs. national health expenditures**



Source: McGinnis, Williams-Russo, and Knickman. *Health Affairs*. 2002.

researchers have estimated that 21% of US medical spending is related to treating obesity-related illnesses.[22]

The role of public health in reducing the burden of preventable disease

According to the CDC, four modifiable risk behaviors are the driving force behind many of the leading causes of chronic disease: lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption.[23] The public health system has the potential to significantly contribute to solving these problems for the following reasons:

- ***Public health is grounded in prevention science***. Public health practitioners have developed evidence-based policies and programs that have been proven to prevent risk behaviors such as tobacco use, physical inactivity, and unsafe driving. Compilations of these evidence-based approaches, such as the CDC's Guide to Community Preventive Services, help to translate the research into action.
- ***Public health strategies can reach entire populations where they live and therefore leverage more significant change than a patient-by-patient approach***. Public health interventions take place largely outside the doctor's office, recognizing that health begins long before we need medical care and is shaped largely by conditions in families, schools, workplaces, and neighborhoods. Community-based strategies that help to make healthy behaviors the default option (such as smoke-free workplaces and healthy school lunches) have the potential to "move the needle" in stemming the tide of chronic disease.
- ***Public health has a local presence in every Ohio community***. Local health departments are often critical conveners of health-related partners in local communities and have "boots on the ground" staff familiar with evidence-based prevention strategies.

Recent research has demonstrated the value of public health and prevention in saving lives and controlling costs. A 2011 study concluded that local public health spending was associated with reduced mortality from the leading preventable causes of death. For every 10% increase in local public health spending, there was an 8.7% reduction in infant mortality and a 3.2% reduction in heart disease deaths.[24] A 2008 return-on-investment analysis (ROI) of community-based prevention programs calculated that Ohio could potentially save $685 million in health care spending by investing in programs to increase physical activity, improve nutrition, and prevent tobacco use (6 to 1 ROI).[25]

How is public health structured and funded at the state level in Ohio?

Structure and governance

Ohio is one of 27 states that have a decentralized public health governance structure, meaning that local health departments are led by local government employees and local government retains authority over many decisions. Local health departments, however, have a strong relationship with the Ohio Department of Health (ODH), which manages federal and state grants to local communities and provides technical assistance and other resources (state laboratory, epidemiology expertise, etc.). As a cabinet-level agency, the Director of the ODH reports directly to the Governor. The Ohio Public Health Advisory Board (OPHAB) is made up of representatives from public health and health care provider organizations and makes recommendations to the Director regarding administrative rules.

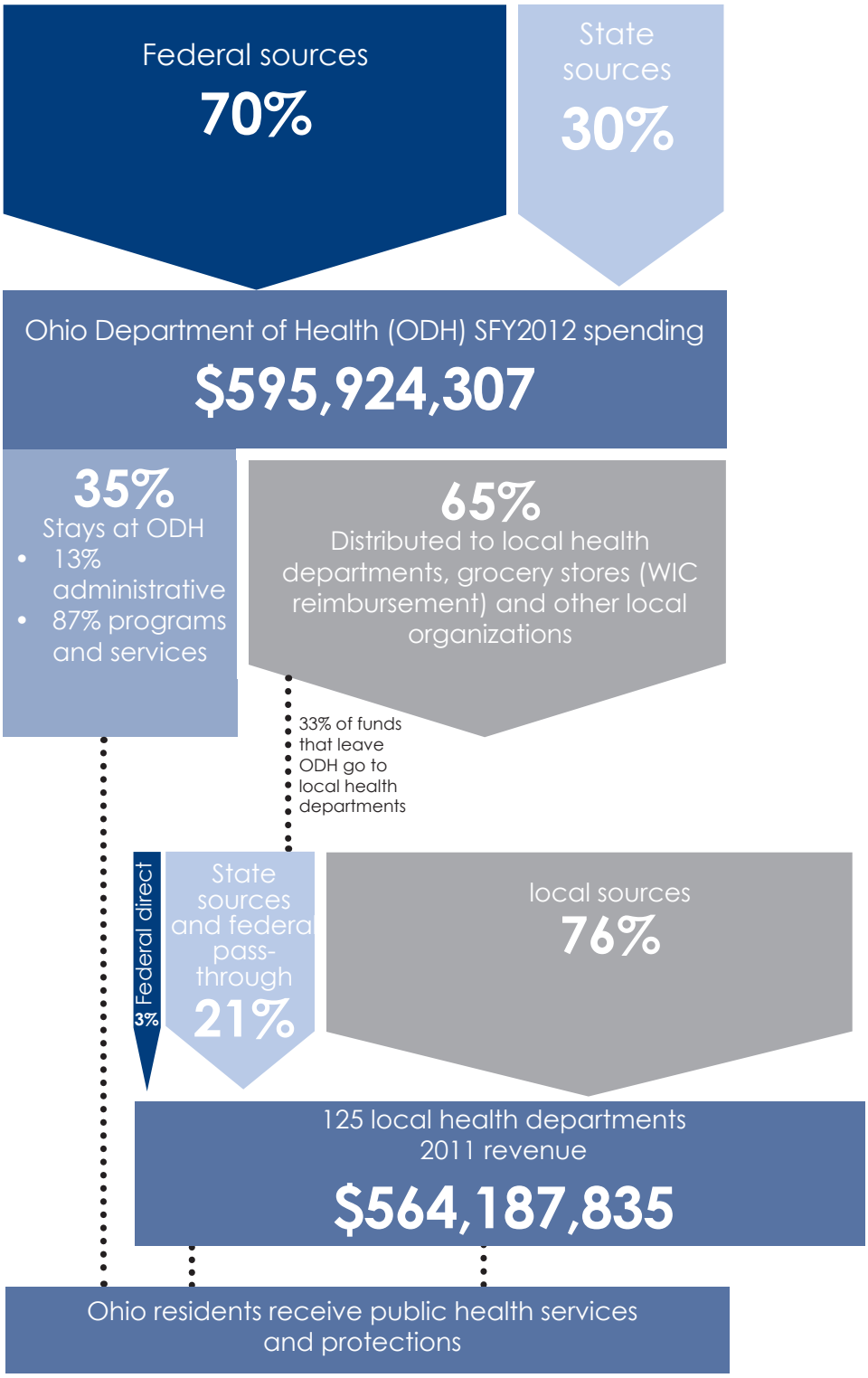
While ODH is the primary state-level public health agency, several other state agencies also perform public-health-related functions, including environmental protection and health care. ODH and local health departments maintain relationships with the Governor's Office of Health Transformation and the departments of Aging, Agriculture, Developmental Disabilities, Education, Environmental Protection, Job and Family Services, Mental Health and Addiction Services, Public Safety, the Air Quality Development Authority and the Commission on Minority Health.

How is public health funded?

Governmental public health is supported by a complex mix of federal, state, and local funding sources for activities carried out at the state and local levels. This section describes the ODH budget. Local health department funding is described in the next section of this report.

In state fiscal year 2012, 70% of ODH's funding came from federal sources and 30% from state sources (see figure 8). ODH passes the majority of its funds (65%) on to local health departments, businesses, and other organizations for programs such as WIC, Help Me Grow, Children with Medical Handicaps, and chronic and infectious disease prevention. Of the 35% of ODH's budget that is retained for services provided by ODH staff and contractors, 13% is used for administrative purposes. ODH uses the remaining 87% to provide services directly, such as long-term care facility licensure and certification and to maintain the state public health laboratory, data center, and vital statistics registry.

Figure 8. **Public health funding sources**

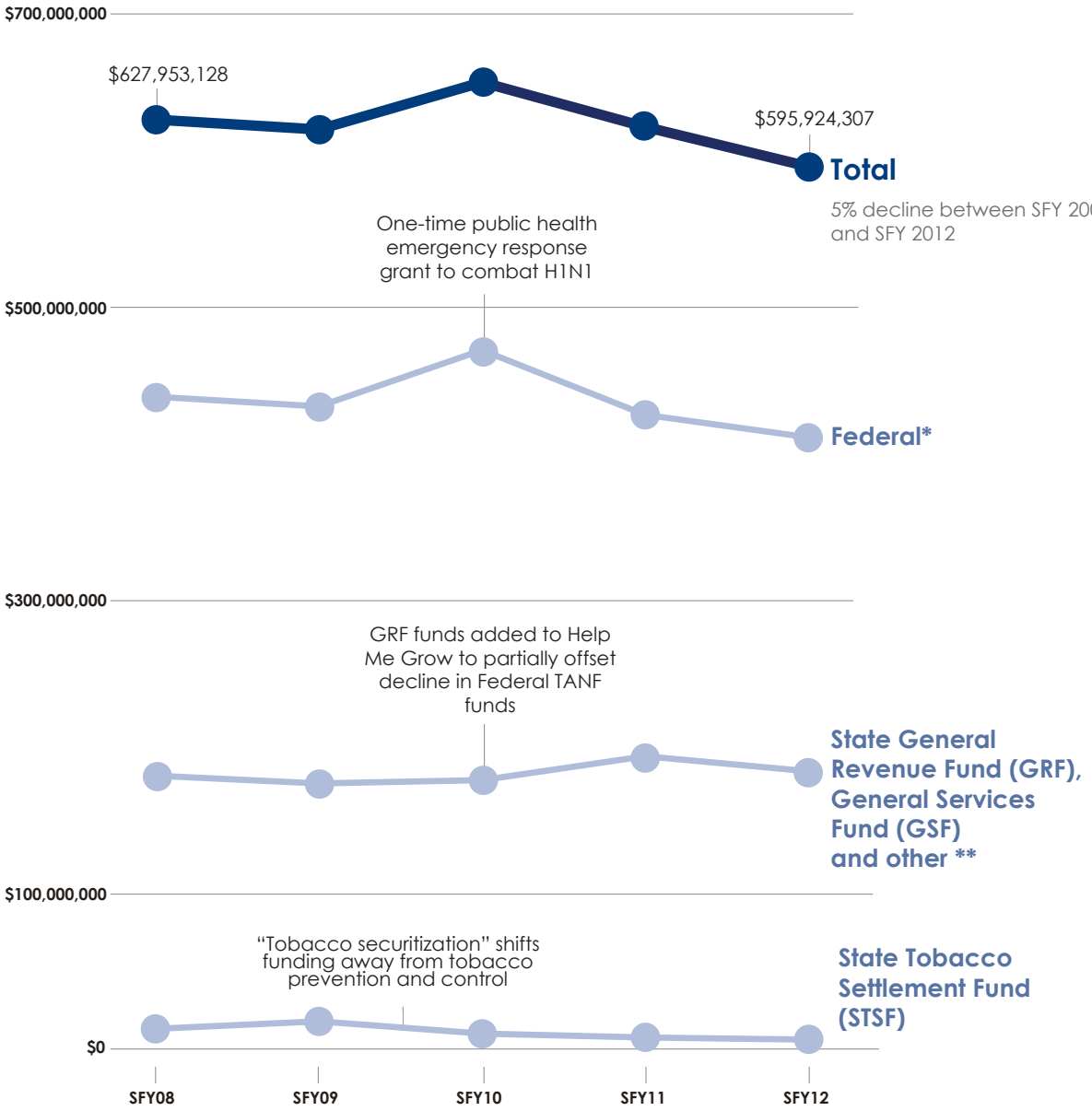


Source: Ohio Department of Health, 2012

ODH budget trends

The ODH budget declined 5% from state fiscal year (SFY) 2008 to SFY 2012 (see Figure 8). The general decline of federal funds from SFY 2008 to SFY 2012 was mitigated by a spike in federal funds in SFY 2010 due to a one-time Public Health Emergency Response grant to combat the H1N1 virus. The 2007 securitization of the Tobacco Master Settlement Agreement shifted funding away from tobacco prevention and control, resulting in a decline in the Tobacco Settlement Fund, the abolishment of the Ohio Tobacco Prevention Foundation, and the elimination of state-generated funding for tobacco prevention and cessation as of SFY 2012. Master Settlement funds are being used only for statewide smoke-free workplace enforcement in SFY 2012-2014, after which they will be fully depleted.

Figure 9. **Trends in ODH revenue, by source, SFY 2008-SFY 2012**



* Federal funds, excluding eFMAP and Medicaid administrative claiming funds, which are included in GSF

** Includes Highway Safety Fund, State Special Revenue and Holding Account Distribution

Source: Ohio Department of Health, November 2012

Federal funding

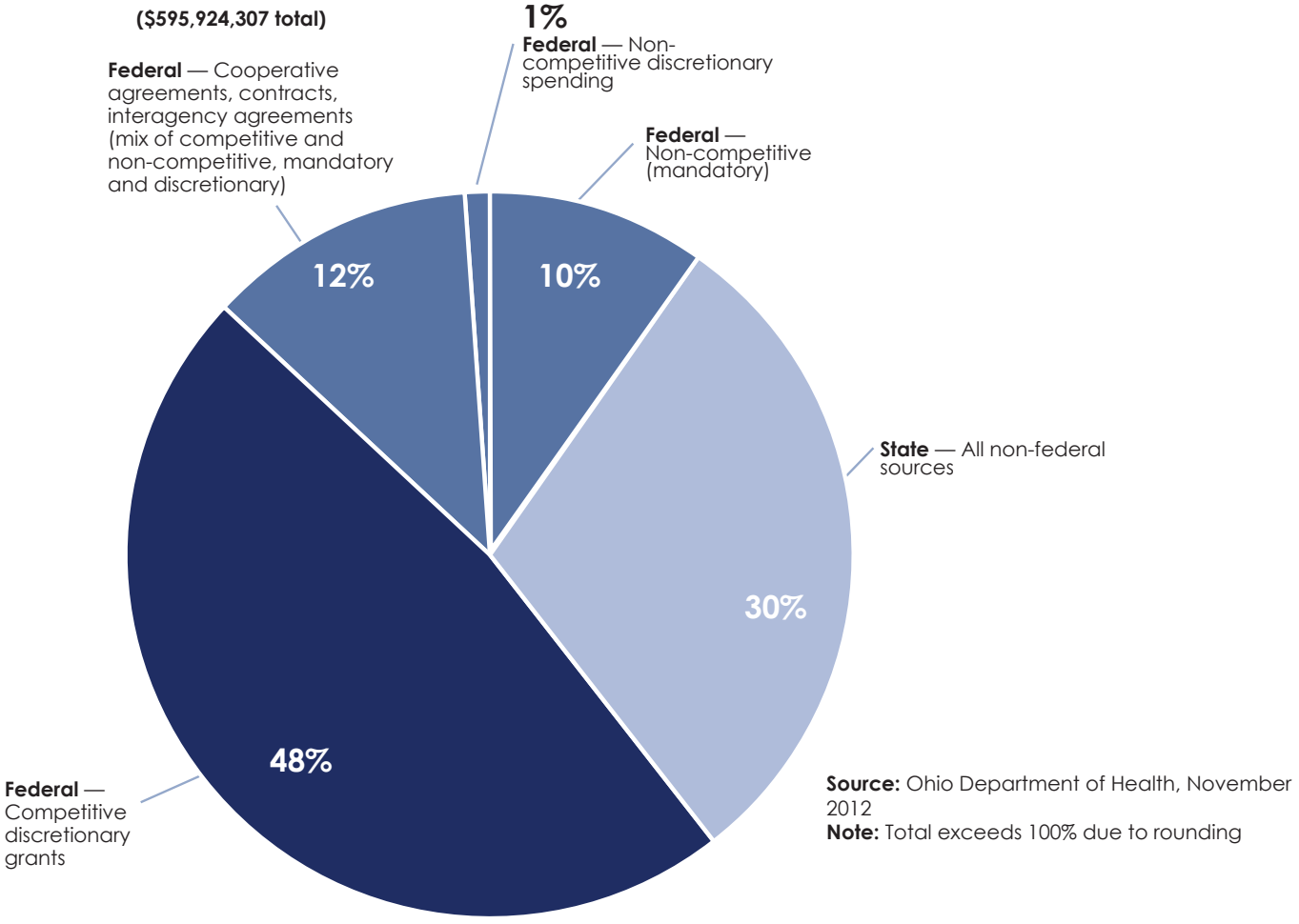
ODH receives several different types of federal funds (see Figure 10). Key distinctions for understanding this federal funding include:

- Mandatory vs. Discretionary (or Non-Mandatory): Discretionary spending must be specifically appropriated by Congress on an annual (or other periodic) basis, whereas mandatory spending is typically determined by a formula that automatically disperses funding to states based on set eligibility characteristics.
- Competitive vs. Non-competitive: Mandatory grants are non-competitive by definition. Discretionary funds, however, can be competitive or non-competitive. Competitive grants or cooperative agreements are awarded to applicants that attain a certain score based on the merits of the proposed project.

The largest single source of ODH revenue in SFY 2012 was federal competitive discretionary grants (48%), which fund programs such as WIC and Ryan White Act health care services for low-income persons with HIV/AIDS. Medicaid (which funds some regulatory work, such as nursing home inspections) and the Maternal and Child Health Block Grant are examples of federal non-competitive mandatory funds that made up 10% of the ODH budget. The remaining categories of federal funds supported activities such as immunizations, cancer prevention, and emergency preparedness.

The proportion of funding that comes from federal sources is higher in Ohio compared to other states; an ASTHO analysis found that 45% of state fiscal year 2009 state health agency revenue came from federal sources for the US overall, compared to 67% for Ohio.[26] Due to the significance of federal funding for public health, several recent analyses have explored federal funding sources and amounts for Ohio compared to other states.[27]

Figure 10 . **Ohio Department of Health state fiscal year 2012 spending, by source**



Source: Ohio Department of Health, November 2012
Note: Total exceeds 100% due to rounding

State per-capita expenditures

Investment in public health varies widely across states. Despite some limitations,[28] state per-capita expenditures provide useful context for assessing the adequacy of funding for governmental public health in Ohio. State rankings calculated by ASTHO and Trust for America's Health (TFAH) show that Ohio spends less on public health than most other states. Combining state and federal sources, the Ohio Department of Health spent $53.84 per resident in state fiscal year 2009, 32% below the US state median of $79 per person (see Figure 11).[29] Looking at state funding sources only (not including federal pass-through), TFAH calculated that Ohio spent $15.22 per resident in FY2010-11, 49% less than the US median of $30.09.[30] When comparing Ohio to contiguous states (see Figure 11), it appears that Ohio spends less than some, but not all, neighboring Midwestern states.

Figure 11. **Per capita state public health expenditures for Ohio and neighboring states**

	State and federal sources (FY09, ASTHO*)		State sources only (FY10-11, TFAH**)	
	Per Capita Amount	Rank	Per Capita Amount	Rank
West Virginia	$119	7	$71	5
Kentucky	$90	21	$44	16
US median	**$79**	**--**	**$30**	**--**
Pennsylvania	$70	32	$15	42
Michigan	$70	33	$21	34
Ohio	**$54**	**43**	**$15**	**40**
Indiana	$52	44	$13	45

***Source:** Association of State and Territorial Health Officials Profile of State Public Health. Volume Two. September 2011.

****Source:** Investing in America's Health. Trust for America's Health. March 2012.

What does ODH do?

ODH has three divisions that are responsible for carrying out the ten essential public health services:

- **Family and Community Health Services:** Administers the WIC, Help Me Grow, Children with Medical Handicaps programs, and other family and community health services.
- **Prevention and Health Promotion:** Includes the Healthy Ohio, Public Health Preparedness, and Environmental Health bureaus, and administers several different programs to prevent injuries and infectious and chronic diseases.
- **Quality Assurance:** Responsible for licensure and regulation of long-term care and other care facilities, as well as some environmental health functions (lead abatement, radon mitigation, etc.).

In addition to these divisions, ODH also provides guidance to local health departments through its Office of Local Health Department Support, public information through its office of Public Affairs, and an Employee Assistance Program (counseling and referrals) for state employees through its office of Employee Services.

As shown in Figure 12, the Family and Community Health Services Division accounts for the largest portion of ODH expenditures. Programs include:

- WIC, a federally funded program, represents the largest portion of the ODH budget. WIC provides nutritious food and formula to low-income families via Electronic Benefit Transfer cards (EBT), as well as breastfeeding support and nutrition education. ODH retains 4% of WIC funds from the USDA to administer the program and 96% of the funds go into local communities. Of the funding that leaves ODH, 78% goes to grocery stores and other food vendors and 22%

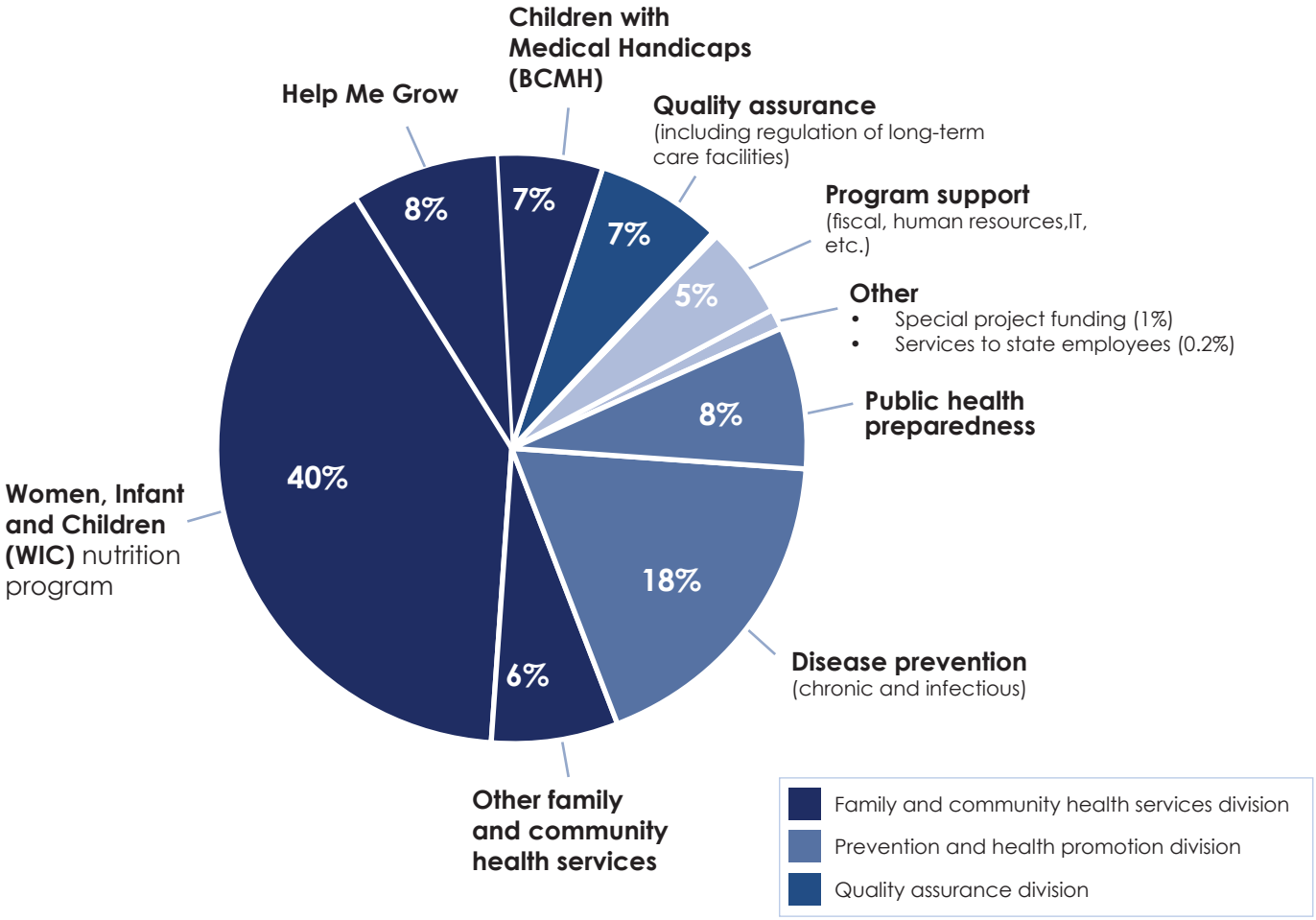
goes to local health departments and other community organizations for nutrition counseling and education. Overall, about 30% of ODH's budget goes to grocery stores/ food vendors for WIC reimbursement.

- Help Me Grow includes an early intervention program that fulfills a federal requirement to provide services for children with disabilities (Part C of the Individuals with Disabilities Education Act) and a home visiting program that is supported by state general revenue funds. Services include developmental screenings, parent education, and care coordination that are provided by local organizations contracted by ODH.
- Children with Medical Handicaps assures access to health care for children with special health care needs.

The Prevention and Health Promotion Division accounts for about one-quarter of the ODH budget. The disease prevention category includes a wide variety of activities, such as promotion of healthier lifestyles; chronic disease prevention; violence and injury prevention; reduction of health disparities; infectious disease control; HIV/AIDS prevention and care; tuberculosis surveillance and control; radiation protection; and epidemiology. The public health preparedness category includes the All Hazards Preparedness program and the statewide vital statistics registry. Some of the activities in this division are performed entirely by ODH staff and contractors, while others are carried out by local providers through grants managed by ODH.

Activities in the Quality Assurance Division are largely performed by ODH staff, rather than being passed through to local communities. This division is responsible for the licensure and monitoring of long-term care and other facilities (such as free-standing dialysis and patient rehabilitation centers) and certain types of hospital services and units.

Figure 12. **Ohio Department of Health expenditures by program, state fiscal year 2012 ($595,924,307 total)**



Source: Ohio Department of Health, November 2012

How is public health structured and funded at the local level in Ohio?

Structure and governance

Ohio law allows for three different types of public health districts—*city, general, and combined*. General districts encompass one county and include all townships and villages in the county. A combined district is the union of a general health district and one or more city districts. General and combined districts are similar, and are commonly referred to as "*county*" districts.

About three-quarters of Ohio LHDs (71%) encompass county districts. The remaining 29% comprise a single city.[31] Ohio does not currently have any LHDs that combine two or more counties. Nationwide, 68% of LHDs have jurisdictions based on county boundaries, while 21% are city jurisdictions and 12% are multi-county or other.[32]

County health departments are accountable to all the jurisdictions within their district, including township trustees, county commissioners, and city and village mayors. County districts include large metropolitan counties that have consolidated their city and general districts (such as the Summit and Montgomery county health departments), the suburban portion of large metropolitan counties minus the central city (such as the Franklin and Cuyahoga county health departments), and rural counties.

City health departments operate within city government. Several of Ohio's city health districts are in large cities (Columbus, Cincinnati, Cleveland, Canton, Youngstown), although Ohio also has several health departments in small rural and suburban cities (such as Shelby, Galion, Coshocton, Norwood).

Each local health department is governed by a Board of Health that is appointed by the chief executives of the jurisdictions in the health district. The Board of Health appoints the Health Commissioner. Ohio law requires each local health department to employ a Health Commissioner, Nursing Director, Environmental Health Director, and a Medical Director.

Current jurisdictions

Ohio's 88 counties are home to a total of 125 local health departments (LHD). Sixty-five Ohio counties have one LHD (74%), while the remaining 23 counties have two or more LHDs (see Figure 13).

Figure 13. **Number of LHDs per county**

	Number of Counties	Percent of Counties (n=88)
County has 1 LHD	65	74%
County has 2 LHDs	13	15%
County has 3-5 LHDs	10	11%

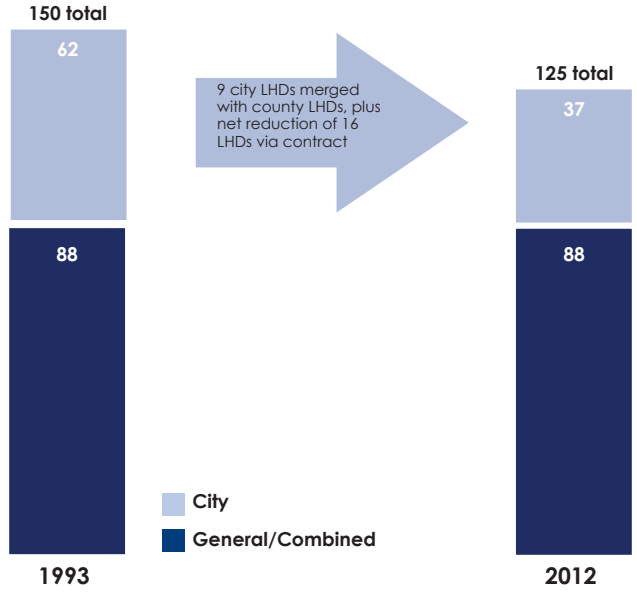
Source: Ohio Local Health Department Census 2010, Ohio Department of Health, 2011.

Note: Two city health departments have geographic areas that cover two counties (Sharonville in Hamilton and Butler Counties, and Alliance in Stark and Mahoning Counties). For the purposes of this calculation, these city departments were assigned to one county each.

The number of local health departments has been decreasing over the past 100 years, as departments consolidate or contract with each other to maximize efficiency. The Hughes Griswold Act of 1919 established 180 health districts in Ohio. The number dropped to 150 by 1993, and now stands at 125. From 1993 to 2012, nine departments combined (referred to as a "union" in statute) and one city department was reconstituted (see Figure 14). Additionally, there was a net reduction of 16 LHDs via contract arrangements (including several "back-and-forth" changes in which a LHD changed contract providers more than one time, and cities transitioning to village status and therefore losing their ability to function as an independent health department).

Contracts involve an agreement between two autonomous jurisdictions (for example, when a city retains health district status and contracts with a county department to provide public health services in their district, or a city transitions to village status and contracts or combines with a county department). Cross-jurisdictional shared services have also become increasingly common. Independent LHDs often collaborate as joint grant recipients, pool resources for shared projects or personnel, or contract with each other for specific services. For example, smaller LHDs are often not able to afford a full-time epidemiologist, but can coordinate with other LHDs to fund an epidemiologist who serves multiple LHDs.

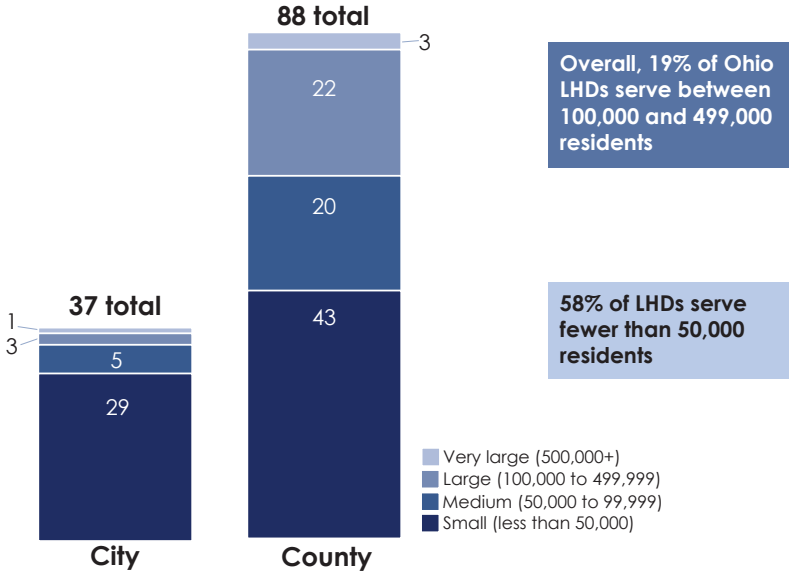
Figure 14. **Number of LHDs operating in Ohio, 1993-2012**



Population size

Ohio LHDs serve a wide range of population sizes, from 854,975 residents in the Cuyahoga County Board of Health's jurisdiction to less than 12,000 for several small city departments. Overall, 58% of LHDs in Ohio serve small population sizes (<50,000 residents), 39% serve medium or large population sizes (50,000-499,999), and 3% serve very large population sizes (500,000+) (see Figure 15).

Figure 15. **Number of city and county LHDs by population size, 2011 (n=125)**



Source: Ohio Local Health Department Census 2010, Ohio Department of Health, 2011.

How are local health departments funded?

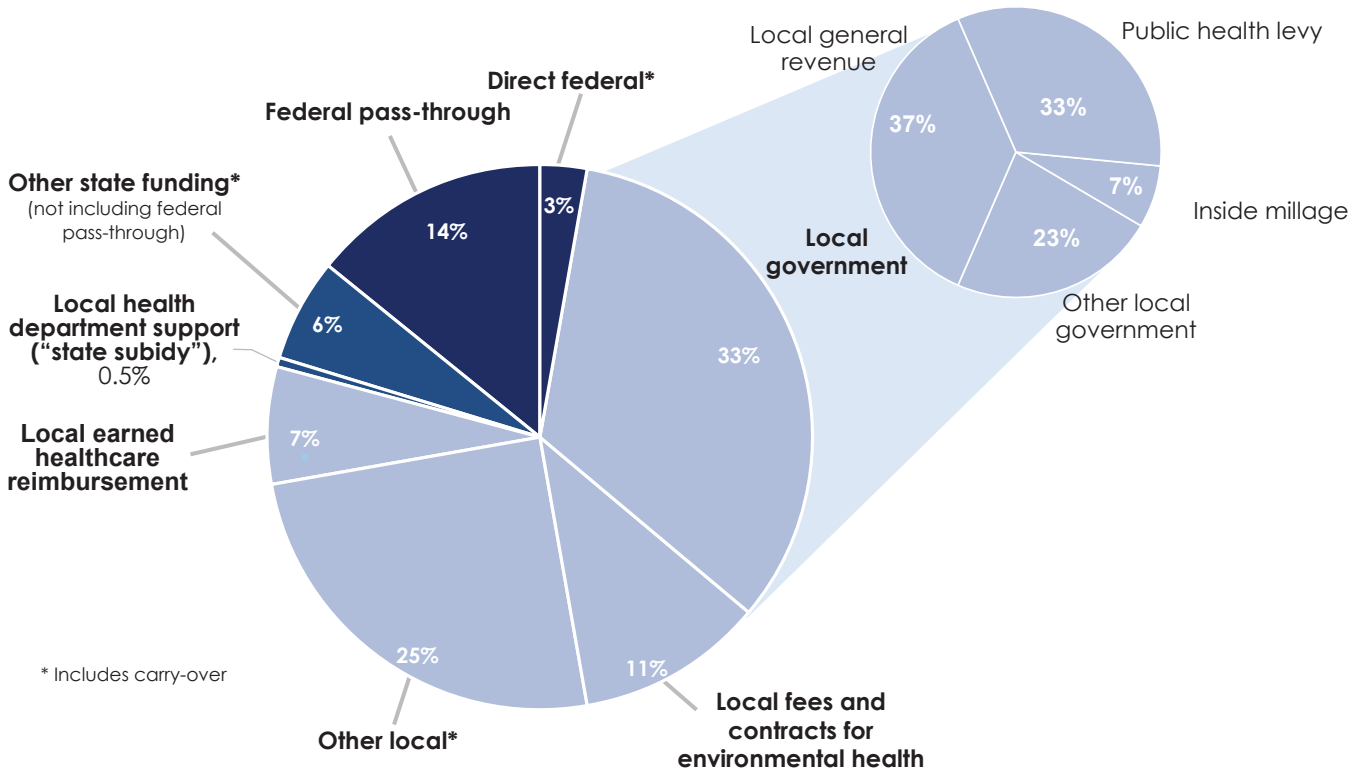
Local revenue

About three-quarters of LHD funding comes from local sources (see Figure 16). Local government funding is the largest source of local funds and includes general revenue, public health levies, and inside millage. These sources vary widely by jurisdiction. For example, only 39% of LHDs reported local public health levy revenue in 2010 and 31% received inside millage.[33] Local funds also include fees LHDs collect for environmental health services and reimbursement for health care services (such as Medicaid, Medicare, and insurance payments for clinical services).

State and federal revenue

State-generated funding provides a relatively small portion of LHD revenue (see Figure 16). All departments receive Local Health Department Support funds from the Ohio Department of Health. Sometimes referred to as the "state subsidy," this revenue source represented less than 1% of overall LHD revenue in 2011. Combining the state subsidy with federal pass-through funds and state grants and contracts, 21% of LHD revenue flows through the state. One third of this state-controlled revenue is generated from state coffers, while two-thirds come from federal sources. Overall, 17% of LHD funding came from Federal sources in 2011 (direct and pass-through), down from 20% in 2010.

Figure 16. **2011 LHD revenue, by category** ($564,187,835 total)



Source: 2011 Annual Financial Report, provided by ODH March 2012

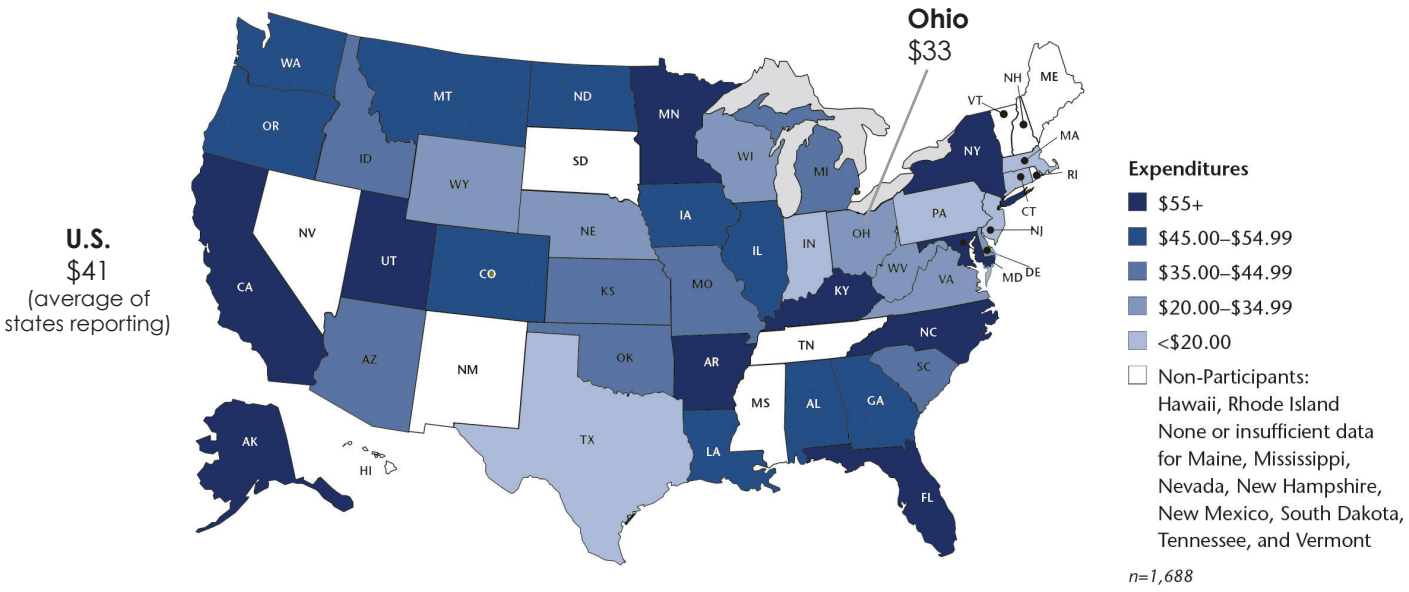
Local per capita expenditures

Resources available for local public health vary widely, reflecting the decentralized nature of the public health system in both the US and Ohio. Per capita expenditures provide a useful way to describe variation in public health funding across LHDs within Ohio, and for comparing Ohio LHDs to those in other states.

Within Ohio, per capita expenditures vary widely by district, from a low of $5 per person per year to a high of $221 in 2010. Much of this variation in per capita expenditures is explained by differences in the number and type of services provided. For example, some LHDs run primary care clinics or offer home health, while others do not provide clinical services.

Among the 44 states for which data are available, Ohio ranks 33rd in median annual per capita LHD expenditures. For the US overall, the median per capita expenditure for LHDs was $41 in 2010, 20% higher than the Ohio median of $33 per person.[32]

Figure 17. **2010 median annual per capita LHD expenditures, by state**



Source: 2010 National Profile of Local Health Departments, NACCHO, 2011
Note: Although there are considerable differences in how LHDs are funded in different states, the NACCHO survey methodology attempts to collect the most consistent data possible for all states from a standard set of funding source categories: city/township/town, county, state direct, federal pass-through, federal direct, Public Health Emergency Response (PHER), American Reinvestment and Recovery Act (ARRA), Medicaid, Medicare, private foundations, private health insurance, patient personal fees, non-clinical fees and fines, tribal, and other.

What do local health departments do?

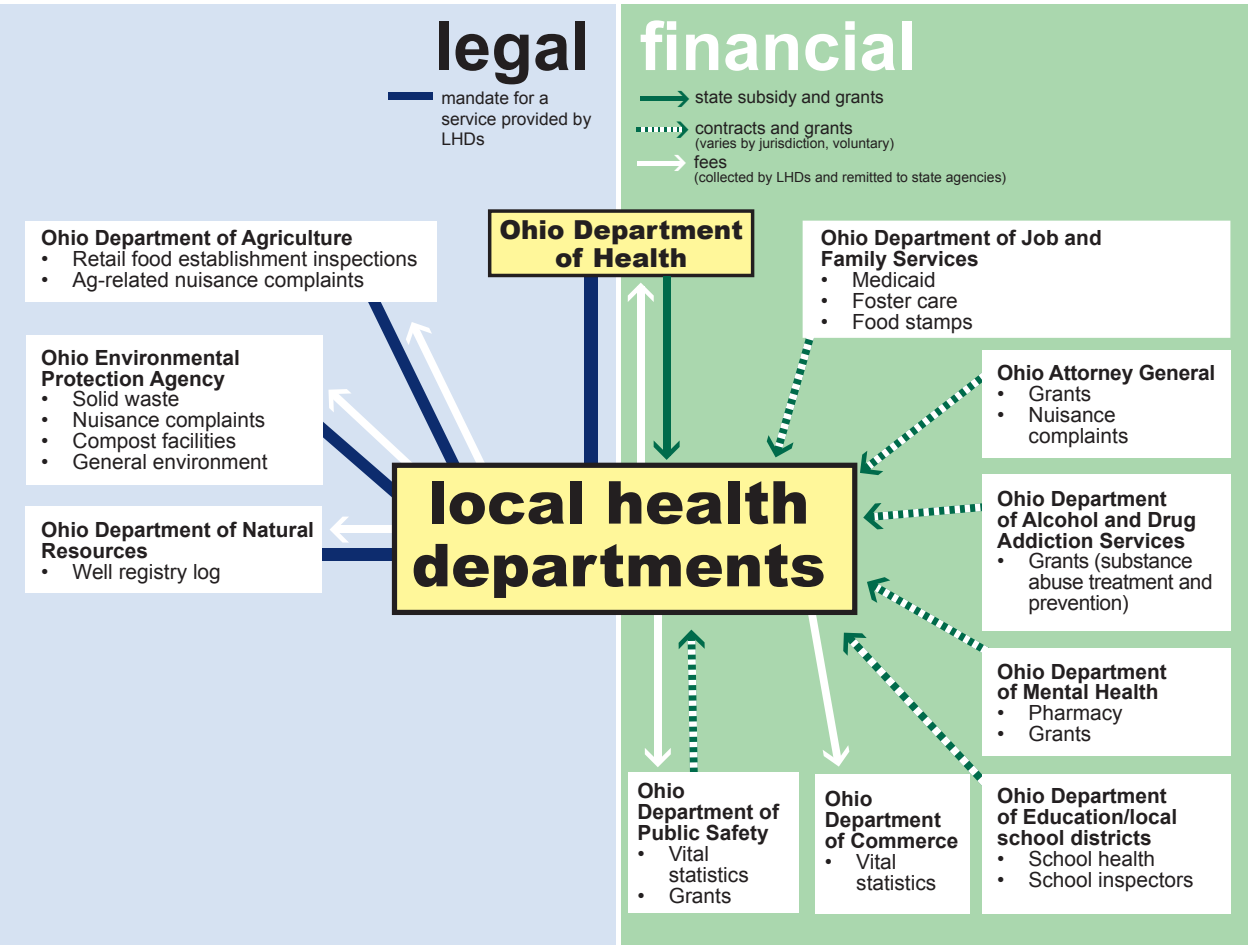
Expectations and mandates

Ohio LHDs must provide services that are specified in the Ohio Revised Code (ORC) and Ohio Administrative Code (OAC). These include several requirements related to environmental health, including water system inspections and the abatement and removal of nuisances, and communicable disease surveillance and reporting. The statutes and regulations in Ohio code also include some direct care requirements, such as involvement in the medically handicapped children program (BCMH) and a more general requirement for provision of access to primary care for medically underserved individuals. Although the ORC does include a general mandate for LHDs to provide health promotion and health education services, there is little reference to chronic disease prevention. The LHD requirements in Ohio statutes have not been updated to reflect the epidemiologic shift in threats to health from infectious disease toward chronic disease. On the whole, the bulk of the statutory mandates continue to emphasize the public health needs that predominated in the first half of the 20th century.

Relationships with state agencies

Although ODH is the primary state agency LHDs report to and receive funding from, LHDs also have legal and financial relationships with many other state agencies. As shown in Figure 18, LHDs are mandated to provide a range of inspection and registry services on behalf of the Ohio departments of Agriculture, Environmental Protection, and Natural Resources. In some cases, LHDs collect fees or fines related to these inspections and registries that are then remitted back to the relevant state agency. Some LHDs receive grants from or enter into contracts with other state agencies, while others maintain voluntary interactions with additional state agencies.

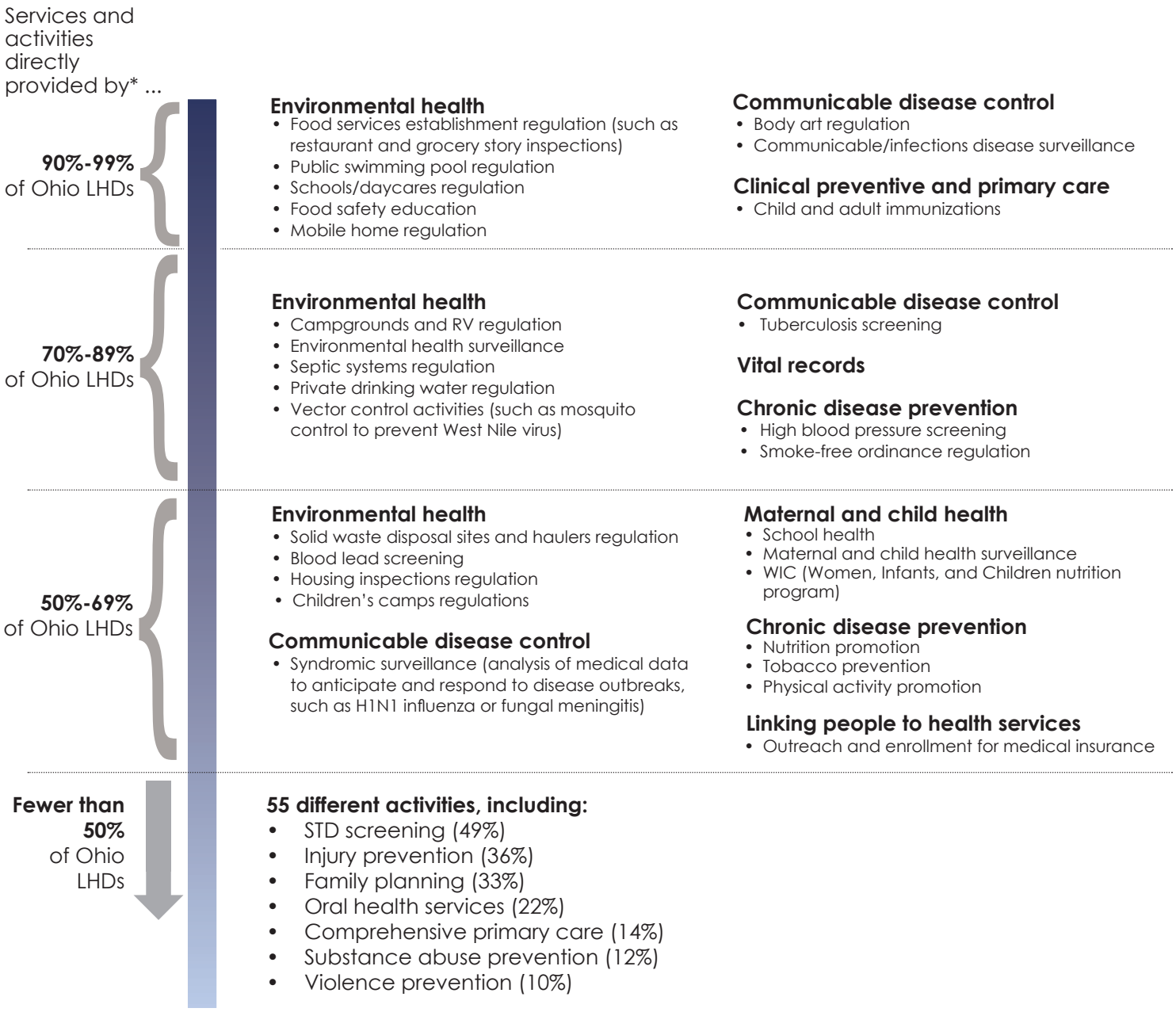
Figure 18. **Legal and financial relationships between LHDs and state agencies**



Activities and services

Aside from mandates specified in the ORC and OAC, LHD activities vary widely, depending upon local community needs and available funding sources.

Figure 19. **Local health department activities, 2010**



Source: 2010 NACCHO Profile-IQ query, November 2012. http://profile-iq.naccho.org
***Note:** Local health departments often contract with another department to provide a service and therefore may not directly provide it themselves.

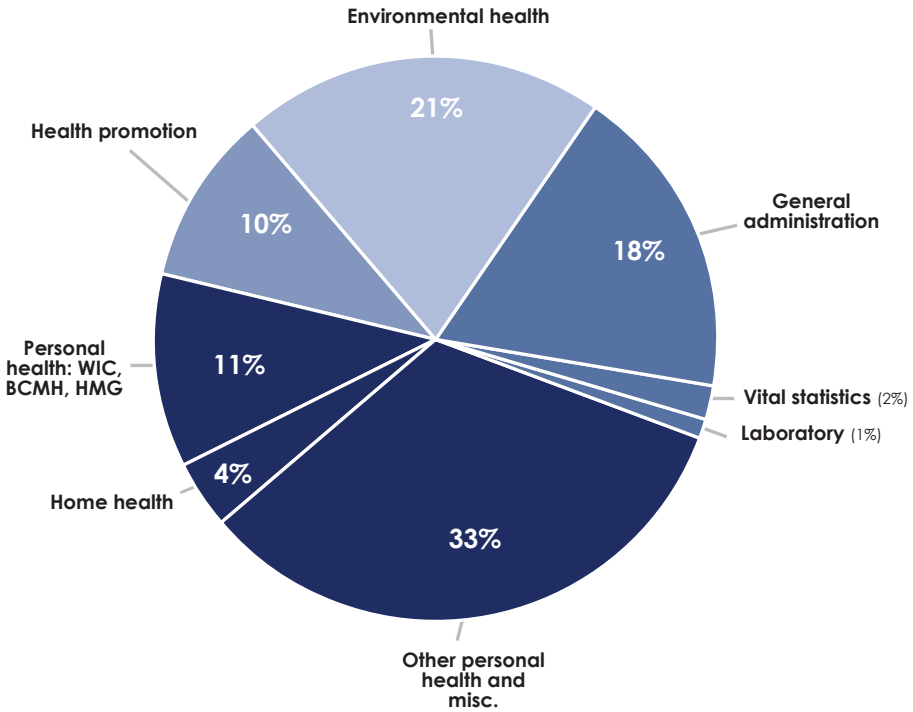
According to Ohio LHD responses to the 2010 NACCHO National Profile survey, activities related to environmental health and communicable disease control are the most frequently reported activities for LHDs, reflecting Ohio mandates and the foundation of local public health protections that was built in the first half of the 20th century. Immunizations and vital records (birth and death records, referred to as "vital statistics" in Ohio) are also core functions provided by almost all Ohio LHDs. Other notable findings from the profile include:

- Fifty-three percent of LHDs implement WIC, the federally-funded nutrition program for pregnant women and young children that makes up 40% of the ODH budget.
- Compared to the profile results for all LHDs in the US, Ohio LHDs were less likely to report implementation of several health promotion and prevention activities. For example, 52% of Ohio LHDs reported that they conducted tobacco prevention activities in 2010, compared to 70% of all LHDs in the US. Similarly, 10% of Ohio LHDs reported violence prevention activities, compared to 24% for the US; 12% of Ohio LHDs reported substance abuse prevention, compared to 27% for the US; and, 43% reported chronic disease prevention, compared to 56% for the US.
- Most Ohio LHDs do not provide direct clinical care services. For example, 14% reported providing comprehensive primary care, 21% provide home health, 22% provide oral health services, and 28% provide prenatal care.

Expenditures by service type

The Ohio Department of Health requires LHDs to report annual expenditures in eight service categories (displayed in Figure 20). In 2011, 21% of LHD expenditures were for environmental health, including functions such as food and water safety and waste management. As shown in Figure 20, roughly half of LHD expenditures went to services related to maternal and child health (WIC, Bureau for Children with Medical Handicaps, Help Me Grow, and other maternal and child health services), primary care, or other clinical services (including home health). Another 10% was spent on "health promotion," which includes prevention and education activities related to tobacco, obesity, and injuries, etc.

Figure 20. **2011 LHD expenditures, by category (total: $425,066,021)**



Source: 2011 Local Health Department Annual Financial Report (AFR), provided by Ohio Department of Health, October 2012

Current challenges and opportunities facing public health

Successful public health efforts and scientific advances have greatly extended life expectancies over the past 100 years, and the primary threats to health have transitioned from communicable diseases such as influenza and tuberculosis, to chronic conditions such as heart disease, diabetes, cancer, and mental illness. While public health science and health data technology have leapt forward, the basic structural, legal, and financial underpinnings of Ohio's public health system continue to reflect century-old mechanisms that focus on infectious-disease-related environmental health (sanitation, quarantine measures, pest control, food safety) and direct services for specific vulnerable populations (Bureau of Children with Medical Handicaps, Help Me Grow, WIC). Public health's challenge going forward is to maintain its strengths in the areas of communicable disease control, environmental health protections, and maternal and child health, while also deploying evidence-based strategies to prevent chronic disease and partner with the medical care system to improve value.

US public health system

In recent years, the Institute of Medicine has released several reports on the status of the public health system and recommendations for improvement.[34] Taken together, these reports highlight the most pressing challenges and opportunities facing public health in the US:

- Current funding for public health is inadequate and the fragmented nature of funding streams is inefficient, limiting public health's ability to improve population health.
- Growing recognition of the importance of prevention and changes to the health care system spurred by the Affordable Care Act provide new opportunities for public health to be more closely integrated with primary care.
- The shift from communicable diseases to chronic disease and injuries as the primary threats to health provides an opportunity to revisit and modernize public health laws and implement policies that create healthier community conditions.
- The US lacks comprehensive health data measures that provide clear accountability for governmental public health, medical care providers, and other sectors that impact health outcomes.

Ohio's local health departments

The Association of Ohio Health Commissioners' (AOHC) *2012 Public Health Futures* report describes the challenges and opportunities facing local health departments in Ohio.[35] Many of these Ohio findings echo the IOM's assessment of issues facing the US public health system described above, particularly related to the short-comings of public health funding and the importance of the population health approach to preventing chronic disease and injuries. Regarding primary care, the AOHC report called for local public health to re-balance its role in providing clinical services within the new healthcare landscape, including modernization of payment and quality systems when LHDs provide medical services or care coordination.

The AOHC Public Health Futures report identifies cross-jurisdictional sharing and voluntary consolidation among LHDs as tools for addressing the structural and financial problems that stem from the patchwork of mandates and fragmented funding streams for local public health and reductions in local government revenue. More specifically, the report identifies the following problems caused by the complex and categorical grant-driven funding environment:

- Lack of dedicated funding sources for capabilities such as quality assurance and information management that are needed to support basic public health services

- Lack of dedicated funding sources for cross-jurisdictional sharing and consolidation
- Inability to make long-term investments to improve efficiency and quality due to revenue instability (e.g., competitive grants, local political conditions, changes in funder priorities, etc.)
- Misalignment between current funding streams and the services that LHDs are mandated and expected to provide based on current public health science and local community need

Finally, AOHC describes Ohio's "home rule" decentralization as both a positive and a negative; LHDs' heavy reliance of local funding (76% of all LHD revenue) helps them to be strongly rooted in their local communities and responsive to local needs, although it also presents barriers to formal cross-jurisdictional sharing and consolidation (e.g., city/county officials' concerns about resource allocation, lack of parity in fee structures, wide variability in LHD per-capita expenditures and services provided, etc.).

The accreditation movement

Accreditation is a fairly new development for public health. The purpose of accreditation is to improve quality by assessing public health agency performance against a set of agreed-upon standards. With input from many public health organizations, the independent, non-profit Public Health Accreditation Board (PHAB) developed accreditation standards and launched an accreditation process in 2011. Accreditation is voluntary at the state and local levels, although LHDs began conducting annual "improvement standard" self-assessments using the PHAB measures, reporting results to ODH in 2012. ODH is in the process of completing prerequisites for state-level accreditation. According to a 2012 OPHA survey of LHDs, 25% of Ohio health departments (20 of the 79 who completed the survey) indicated that they had submitted their statement of intent to apply for accreditation or were planning to do so within the next year. The two largest barriers to seeking accreditation cited by AOHC members were the cost of the accreditation fees and lack of staff time to commit to the accreditation process.[36]

Both the AOHC Public Health Futures and subsequent Legislative Committee on Public Health Futures reports recommend that LHDs meet eligibility requirements to apply for PHAB (e.g., complete prerequisite activities such as a community health assessment and improvement plan)—but stop short of actually recommending mandatory accreditation, largely due to concerns about the costs of accreditation, which range from $12,720 to $31,800 depending on the population size served by the LHD.[37]

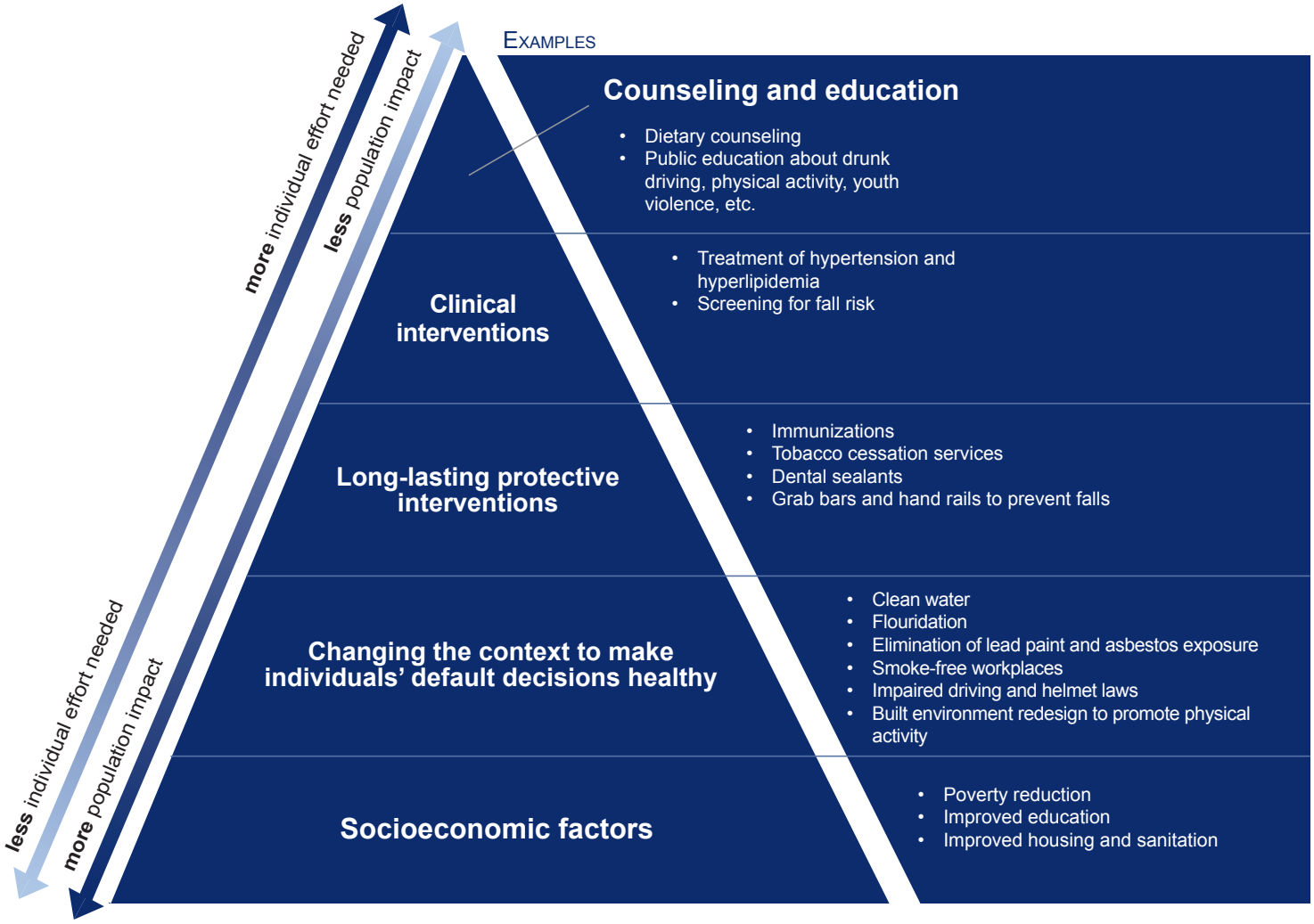
Public health priorities for the 21st century

Confronting emerging threats to health: The Health Impact Pyramid and the "policy, system, and environmental change" approach

Research has shown that evidence-based approaches that focus on the social and environmental context of individual behavior, rather than individual clinical care and education, are the most effective ways to improve health, particularly related to preventable chronic conditions and injuries.[38] Often referred to as "policy, system, and environmental change," this approach modifies the environment to make healthy choices practical and available to all community members. Examples include adding sidewalks and cross-walks to make it safer for children to walk to school, and employers offering healthier foods in their cafeterias and vending machines.

The Health Impact Pyramid provides a useful framework for the types of public health interventions that evidence shows are most likely to result in improved population health. The pyramid helps to prioritize public health strategies by emphasizing the types of activities that are unique to public health and that public health does well. As shown in Figure 21, activities toward the base of the pyramid require minimal individual effort and have the greatest leverage for improving population health, while activities toward the top of the pyramid require increased individual effort and reach smaller segments of the population.

Figure 21. **The Health Impact Pyramid**



Source: A Framework for Public Health Action, The Health Impact Pyramid, Frieden, M.D., Thomas R, American Journal of Public Health, April 2010.

National priorities

There are three frameworks that highlight current public health priorities and compile targets for assessing progress. Healthy People 2020 is the most comprehensive framework, serving as a general compendium of national benchmarks, while the National Prevention Strategy and CDC's *Winnable Battles* pinpoint a more specific set of goals and the recommended strategies for reaching them.

- **Healthy People 2020.** Developed by HHS in collaboration with other federal agencies and public health stakeholders, Healthy People 2020 is the most comprehensive set of measurable benchmarks and goals for improving health in the US. Healthy People 2020 contains nearly 600 objectives and 1,200 specific measures (http://www.healthypeople.gov/2020/topicsobjectives2020/default.aspx . A smaller set of objectives, the Healthy People 2020 Leading Health Indicators highlights 26 top-priority health indicators and actions that can be taken to address them (http://www.healthypeople.gov/2020/LHI/2020indicators.aspx).
- **National Prevention Strategy.** Released by the National Prevention Council in 2011, the National Prevention Strategy lays out four strategic directions to serve as the foundation for a "prevention-oriented society" and compiles evidence-based recommendations for reducing the leading causes of preventable death and major illness in the US, organized around seven priority areas. The strategy includes a set of measurable indicators and targets, with cross-references to Healthy People 2020. http://www.healthcare.gov/prevention/nphpphc/strategy/index.html
- **CDC's Winnable Battles.** CDC has identified 6 "winnable battles"—a list of major threats to health in the US for which public health already has proven, effective strategies and there is excellent potential for large-scale impact. Winnable Battles 2015 Targets lists 14 measurable objectives with cross-references to Healthy People 2020. http://www.cdc.gov/WinnableBattles/targets/PDF/WinnableBattlesTargets_Final_091212.pdf

Figure 22. **National Prevention Strategy**

Strategic Directions	
Healthy and Safe Community Environments	Create, sustain, and recognize communities that promote health and wellness through prevention.
Clinical and Community Preventive Services	Ensure that prevention-focused health care and community prevention efforts are available, integrated, and mutually reinforcing.
Empowered People	Support people in making healthy choices.
Elimination of Health Disparities	Eliminate disparities, improving the quality of life for all Americans.
Priorities	
• Tobacco Free Living • Preventing Drug Abuse and Excessive Alcohol Use • Healthy Eating • Active Living • Injury and Violence Free Living • Reproductive and Sexual Health • Mental and Emotional Well-being	

Figure 23. **CDC's Winnable Battles***

Healthcare-associated infections	Ensure safe healthcare for all Americans by reducing healthcare-associated infections.
HIV	Prevent new HIV infections and ensure quality health care for persons living with HIV.
Motor vehicle safety	Keep people safe on the road — everyday.
Nutrition, physical activity, and obesity	Support all Americans in achieving a healthy weight by making nutritious foods and physical activity the easy, attractive and affordable choice.
Food safety	Keep America's food supply safe by preventing and responding to foodborne outbreaks.
Teen pregnancy	Reduce teen pregnancy and its contribution to the cycle of poverty for teens and their families.
Tobacco	Prevent the initiation of tobacco use, promote quitting, and ensure smoke–free environments.

*Domestic only (CDC also has "winnable battles" for global health).

Ohio priorities

In 2012 ODH completed a State Health Improvement Plan (SHIP) that lays out health priorities and specifies goals and strategies for reaching them. The SHIP was developed by a statewide planning council of more than 40 representatives from state and local public health, health care delivery, and other sectors. The SHIP will be used to galvanize health activities around the state to focus on the priorities in the plan and to assess progress on specific objectives over a 24-month period.

Figure 24. **State Health Improvement Plan**

Health Improvements	Service Improvements
• Chronic disease • Injury and violence • Infectious disease • Infant mortality/premature births	• Access to care • Integration of physical and behavioral healthcare
	Operational Improvements
	• Electronic health records (EHRs)/Health information exchange(HIE) • Workforce development • Public health funding

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Glossary

Chronic disease or chronic condition — Conditions that persist over a long period of time. Examples include heart disease, stroke, cancer, diabetes, arthritis, respiratory diseases, mental illness, drug and alcohol addiction, and some dental conditions.

Communicable disease — Diseases that can be transmitted from one person or animal to another. Also known as infectious diseases.

Epidemic — The occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time.

Epidemiology — The study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems.

Environmental health — Area of public health that addresses the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments.

Health equity — Equal opportunity for members of all populations to disease prevention, healthy outcomes, or access to health care, regardless of race, gender, nationality, age, ethnicity, religion, sexual orientation, immigration status, language skills, health status, or socioeconomic status.

Pandemic — An epidemic occurring over a very wide area (several countries or continents) and usually affecting a large proportion of the population.

Policy, system and environmental change (PSEC) — Policy, system and environmental change is a way to modify the environment to make healthy choices practical and available to all community members.

Population health — The health outcomes of a group of individuals, including the distribution of such outcomes within the group. The field of population health focuses on the determinants of health (including medical care, public health interventions, social environment, physical environment, genetics, and individual behavior) and the policies and programs that influence those determinants and reduce health disparities among population groups.

Prevention — A systematic process that promotes healthy behaviors and reduces the likelihood or frequency of an incident, condition, or illness. Ideally, prevention addresses health problems before they occur, rather than after people have shown signs of disease or injury.

Public health — The science and art of promoting health, preventing disease, and prolonging life through the organized efforts of society. Public health organizations include government agencies at the federal, state, and local levels, as well as nongovernmental organizations that are working to promote health and prevent disease and injury within entire communities or population groups.

Vital statistics — Systematically tabulated information about births, marriages, divorces, and deaths, based on registration of these vital events.

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