State of Arizona Office of the Auditor General

PERFORMANCE AUDIT

DEPARTMENT OF HEALTH SERVICES

BUREAU OF EPIDEMIOLOGY AND DISEASE CONTROL SERVICES

Report to the Arizona Legislature
By Debra K. Davenport
Acting Auditor General
September 1999
Report No. 99-18

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DEBRA K. DAVENPORT, CPA
ACTING AUDITOR GENERAL

STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

September 16, 1999

Members of the Legislature

The Honorable Jane Dee Hull, Governor

Dr. James Allen, Director
Department of Health Services

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Department of Health Services, Bureau of Epidemiology and Disease Control Services. This report is in response to a May 27, 1997, resolution of the Joint Legislative Audit Committee. The performance audit was conducted as part of the Sunset review set forth in A.R.S. '' 41-2951 through 41-2957.

This is the sixth in a series of six audit reports issued on the Department of Health Services. In this report, we found that current disease surveillance does not ensure that the Bureau adequately identifies disease outbreaks. Specifically, the reporting of disease-related data from laboratories and physicians is often incomplete or delayed. Late or incomplete data can also limit the amount of federal funding the State receives for disease control and prevention programs. The Bureau could improve disease surveillance by periodically evaluating its disease surveillance system, encouraging greater compliance with reporting requirements, and obtaining information from multiple reporting sources. The Bureau could also raise awareness of the importance of disease reporting by increasing the dissemination of surveillance information to health care providers and laboratories.

This report also addresses how the Bureau can improve efforts to collect data on children's immunization rates. To more effectively gauge immunization coverage levels statewide, the Bureau should improve the Arizona State Immunization Information System (ASIIS), a computerized immunization registry. Additionally, the Bureau could improve efforts to monitor school immunization rates by more thoroughly verifying school records and working with the Arizona Department of Education to promote immunization objectives.

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Finally, the audit found that the scope of activities within the Bureau's Office of Environmental Health is too broad. The Office is responsible for performing activities ranging from licensing bedding manufacturers to responding to environmental emergencies, such as chemical spills. The Bureau needs to assess the relative importance to public health of each of its activities and identify those that could be discontinued, delegated, or transferred to other agencies.

As outlined in its response, the Department agrees with, and has agreed to implement, all the recommendations addressed to it.

My staff and I will be pleased to discuss or clarify items in the report.

This report will be released to the public on September 17, 1999.

Sincerely,

Debbie Davenport
Acting Auditor General

Enclosure

SUMMARY

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Health Services, Division of Public Health, Bureau of Epidemiology and Disease Control Services in response to a May 27, 1997, resolution of the Joint Legislative Audit Committee. This performance audit was conducted under the authority vested in the Auditor General by A.R.S. §§41-2951 through 41-2957. This is the final in a series of six audits of the Department of Health Services.

The Bureau's mission is to monitor, control, and prevent disease.

The Bureau of Epidemiology and Disease Control Services' (Bureau) mission is to monitor, control, and prevent diseases caused by infectious and noninfectious agents, toxins, and environmental hazards. To fulfill its mission, the Bureau is authorized 42.2 full-time-equivalent state employees and has 63.6 federally funded employees. The Bureau has four program offices: the Office of Infectious Disease Services, the Office of HIV and STD Services, the Arizona Immunization Program Office, and the Office of Environmental Health. Through its programs the Bureau collects and analyzes disease-related data, performs outbreak and other disease investigations, inspects certain facilities such as correctional facility kitchens for unsanitary conditions, develops disease prevention and control efforts, and provides the medical community with disease information useful for clinical practice.

Bureau's Disease Surveillance System Needs Improvement (See pages 9 through 20)

Protection of the public from communicable diseases, such as hepatitis, HIV, and tuberculosis, depends on the Bureau's ability to monitor these diseases through surveillance. Disease surveillance is the ongoing and systematic collection, analysis, and dissemination of information about diseases. Surveillance permits the identification of disease outbreaks and at-risk groups, the development of strategies to reduce infection, effective resource

allocation, and improvements in clinical practice by health care providers.

The Bureau's surveillance system needs improvement. Although surveillance is important, current surveillance practices do not adequately ensure that the Bureau is able to prevent and control disease. The Bureau's data collection is often incomplete or delayed. The Bureau does not obtain reports of all disease cases from laboratories or physicians or their authorized representatives, or the reports are often received beyond the time frames prescribed by state rules. Additionally, when reports are received, they do not always contain complete information, and the Bureau does not always compile them in a timely manner.

Incomplete data collection hinders identifying outbreaks.

Although the Bureau handles outbreaks well once it learns of them, incomplete data collection hinders its ability to identify outbreaks. In 1999, for example, a measles outbreak spread unchecked because the two cases likely to have begun the outbreak had not been reported to the Bureau by the diagnosing physicians or testing laboratories. Furthermore, late or incomplete data presents a potentially inaccurate picture of communicable disease in the State. Additionally, late or incomplete data can affect the amount of funding received by the State. For example, a recent HIV case backlog resulted in inaccurate data, costing the State an estimated $2.5 million in lost federal funding.

By addressing the several factors that contribute to deficiencies, the Bureau can improve its disease surveillance system to more effectively protect the public from communicable diseases. First, the Bureau should take steps to ensure complete and timely disease reporting by periodically evaluating the system, encouraging greater compliance with reporting requirements, and obtaining information from multiple reporting sources. Second, to raise awareness of the importance of disease surveillance, the Bureau should further develop its contact with the media. Finally, the Bureau should increase its dissemination of surveillance data to health care providers, laboratories, and county health departments.

Arizona Immunization Program Office Should Improve Efforts to Collect Data (See pages 21 through 27)

Monitoring statewide immunization rates is important because immunization rates remain low for some county health departments.

The Arizona Immunization Program Office should improve its efforts to collect immunization data to gauge the State's progress toward reaching its immunization goals. Although estimates of statewide immunization rates for children indicate that coverage levels have improved, rates remain low for children receiving vaccinations from some county health departments. For example, the figures from spring 1999 indicate that only 47 percent of two-year-old children served by the Maricopa County Health Department and only 43 percent of two-year-old children served by the Pima County Health Department are fully immunized. Immunization rates from county health departments are an important indicator of statewide coverage levels because 53 percent of Arizona children are eligible to receive free vaccinations from public health providers.

To more effectively monitor immunization coverage levels statewide, the Office should improve the Arizona State Immunization Information System (ASIIS), a computerized immunization registry. County health departments have had difficulties submitting records to the State's central database, obtaining patient records, and producing immunization reminder notices for patients. In addition to the problems faced by county health departments, the Office lacks an effective strategy to ensure that all health providers report to ASIIS. The Office recently estimated that 6 percent of private health providers do not report to ASIIS. The Office should continue its efforts to make reporting of immunization records easier and more thoroughly enforce reporting requirements.

The audit also found that although accurate tracking of schoolchildren's immunization rates is important, the Office may not be able to adequately monitor these rates. The Office cannot ensure that all Arizona schools comply with required coverage levels and that school immunization reports are valid. These problems exist, in part, because the Office does not consistently coordinate efforts with the Department of Education. However, the Office can improve its methods for obtaining data from

schools by verifying school records and working with the Arizona Department of Education.

Office of Environmental Health's Scope of Activities Should Be Reviewed (See pages 29 through 33)

The Office's 20 staff are responsible for over 40 activities.

The Office of Environmental Health's scope of activities is too broad. The Office is responsible for performing numerous activities, ranging from licensing bedding manufacturers to responding to environmental emergencies, such as chemical spills. In addition, the Office performs several unmandated activities, such as inspecting produce warehouses on the United States-Mexico border. Auditors identified over 40 different activities for which the Office's 20 staff members are responsible. These activities vary in importance with regard to protecting the public's health.

Although the Office delegates to county health departments several major responsibilities, such as restaurant inspections, it is unable to perform all of its activities. For example, although statute requires inspections of all public or semipublic buildings to ensure sanitary conditions, the Office conducts no inspections of public buildings. Similarly, of the 75 required inspections of children's camps during fiscal year 1998, the Office conducted 45. Finally, the Office elects not to perform certain activities, such as inspecting trailer parks and bedding manufacturers, that pose minimal risk to public health.

The Bureau needs to assess the relative importance to public health of each of its activities and identify those that could be discontinued, delegated, or transferred to other agencies. Because many activities are mandated in statute, the Bureau should develop a proposal for legislative action.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of the Arizona Department of Health Services, Division of Public Health, Bureau of Epidemiology and Disease Control Services in response to a May 27, 1997, resolution of the Joint Legislative Audit Committee. This performance audit was conducted under the authority vested in the Auditor General by A.R.S. §§41-2951 through 41-2957. This is the final in a series of six audits of the Department of Health Services.

The Purpose of Epidemiology and Disease Control Services

The mission of the Bureau of Epidemiology and Disease Control Services is to monitor, control, and prevent diseases carried by infectious and noninfectious agents, toxins, and environmental hazards. It was established in 1992 as part of the Division of Public Health Services. Under A.R.S. §36-104, the Arizona Department of Health Services is responsible for administering epidemiology and disease control programs. Additionally, the Department is required to collect and preserve information relating to the prevention of diseases, such as hepatitis, tuberculosis, and AIDS. The Bureau carries out these tasks and reports disease surveillance and prevention results to its federal counterpart, the Centers for Disease Control and Prevention (CDC).

> ***Epidemiology*** is the study of the factors contributing to the causes, frequency, and distribution of diseases in a community or given population.

Public health officials working in epidemiology are responsible for detecting and monitoring disease trends. To safeguard the public's health, these officials obtain and analyze disease-related data, conduct outbreak and other disease investigations, and design and evaluate disease prevention and

> ***Surveillance*** is the monitoring of infectious diseases to identify diseases and their sources.

control efforts. State epidemiologists also provide the medical community with information obtained through surveillance to help health care providers with their clinical practice.

Personnel, Organization, and Budget

The Bureau was authorized 112.3 full-time equivalent employees to its four main offices, including seven positions assigned to the Office of the Bureau Chief. Of these, 42.2 positions are state funded, 63.6 are federally funded, and 6.5 are funded through other sources, such as grants. Fourteen of the federal positions are vacant and five of the state positions are vacant.

There are four Offices within the Bureau, which perform a wide range of activities in the areas of epidemiology and disease control. Specifically:

- **Office of Infectious Disease Services (17 FTEs)—**monitors the magnitude and trends of communicable diseases in Arizona and provides technical assistance to county health departments and other providers and agencies regarding diagnosis, prevention, and disease control. This office also has a separate program for tuberculosis, which monitors the incidence of tuberculosis and ensures that cases are appropriately investigated and treated; and a separate program that monitors the potential for the transmission of infectious diseases that are communicable to humans from insects and animals.

- **Office of HIV and STD Services (34.3 FTEs)—**provides education, testing, counseling, treatment, and care services to individuals with HIV / AIDS or sexually transmitted diseases (STDs). Working with county health departments, this office tracks the HIV / AIDS epidemic and the incidence of sexually transmitted disease in Arizona. This office also administers the AIDS Drug Assistance Program, which provides free medication to uninsured, low-income persons with AIDS.

- **Arizona Immunization Program Office (23.5 FTEs)—**oversees the distribution of subsidized vaccine, promotes hepatitis B screening and prevention for pregnant women and their

newborns, and provides information, education, and consultation to enhance delivery of immunization services. The Immunization Program Office monitors statewide immunization levels by collecting reports from schools and counties, and maintains the Arizona State Immunization Information System (ASIIS), which is a statewide, computerized registry of immunization records.

- **Office of Environmental Health (30.5 FTEs)**—performs numerous activities intended to prevent and control illness related to the transmission of infectious agents or toxic substances in food and water. This office inspects various private and public facilities, such as children's camps, behavioral health centers, and group homes, to prevent injury due to unsafe conditions. Additionally, the Office of Environmental Health performs activities to prevent illness due to environmental contaminants or hazards, such as lead and pesticides.

The Bureau of Epidemiology and Disease Control Services receives both state and federal funding. The Bureau received $22,016,259 in funding for fiscal year 1999, including state and federal monies. Table 1 (see page 4), illustrates the Bureau's revenues and expenditures for fiscal years 1997 through 1999.

Table 1

Arizona Department of Health Services
Bureau of Epidemiology and Disease Control
Statement of Revenues, Expenditures, and Changes in Fund Balance
Years Ended June 30, 1997, 1998, and 1999
(Unaudited)

	1997	1998	1999
Revenues:			
Intergovernmental[1]	$14,156,291	$13,487,496	$13,595,133
State General Fund Appropriations	5,951,000	6,242,400	5,956,600
Tobacco taxes [2]	183,400	1,150,000	2,184,300
Charges for services	127,407	125,388	97,370
Private gifts, grants, and contracts		118,518	
Other	70,548	78,909	182,856
Total revenues	20,488,646	21,202,711	22,016,259
Expenditures:			
Personal services	3,444,453	3,721,236	3,614,444
Employee related	770,007	821,923	615,853
Professional and outside services	1,646,371	1,498,552	1,214,221
Travel, in-state	128,509	137,741	119,066
Travel, out-of-state	91,527	74,703	65,600
Aid to organizations [3]	9,299,736	7,958,307	8,049,791
Other operating [4]	4,370,216	6,017,554	7,075,454
Capital outlay	21,386	130,491	12,469
Allocated costs	426,294	1,019,065	1,407,960
Total expenditures	20,198,499	21,379,572	22,174,858
Excess of revenues over (under) expenditures	290,147	(176,861)	(158,599)
Reversions to the State General Fund	14,823	1,867	399,742 [5]
Excess of revenues over (under) expenditures and reversions to the State General Fund	$ 275,324	$ (178,728)	$ (558,341)

[1] Intergovernmental revenues are primarily from federal sources.

[2] In 1998, the Bureau received $1 million in tobacco tax revenue to create the Health Crisis Fund. Since 1998, the Bureau is allocated sufficient tobacco tax revenue to replenish the Fund's balance to $1 million at the beginning of each fiscal year. In 1999, the Bureau received an additional $1.7 million in tobacco tax revenues to provide medicine to uninsured, low-income persons infected with Human Immunodeficiency Virus (HIV).

[3] After 1997, monies available for aid to organizations decreased. Federal support for the Federal Immunization program was reduced. At the same time, rising costs for medical supplies reduced the amounts available to aid organizations from the Federal Immunization and Ryan White Title II programs.

[4] After 1997, increased tobacco tax revenues available for purchasing medical supplies and rising costs for medical supplies significantly increased other operating expenditures.

[5] Amount will not actually be reverted until June 30, 2000. Until then, it is available to pay claims that contracted vendors failed to file in 1999. The Bureau anticipates that such claims will be made and most of the amount will be expended.

Source: The Arizona Financial Information System (AFIS) *Revenues and Expenditures by Fund, Program, Organization, and Object* report, AFIS *Status of Appropriations and Expenditures* report, Department-provided financial information, and *State of Arizona Appropriations Report* for the years ended June 30, 1997, 1998, and 1999.

Audit Scope and Methodology

Audit work focused on the Bureau's ability to adequately obtain, analyze, and report disease-related data; accurately collect immunization data; and efficiently monitor environmental health. A number of different methodologies were used to develop findings in these three areas. Specifically:

- To determine if the Bureau adequately obtains necessary disease-related data from health providers, a sample of 4,653 reported disease cases was reviewed. The sample comprised all the cases entered into the Bureau's disease database between July 1, 1998 and December 31, 1998. To determine if laboratory reports submitted to the Bureau are timely, auditors reviewed a sample of 302 infectious disease reports representing one week of laboratory reports. Auditors also reviewed one week of laboratory reports from each of the Bureau's disease surveillance systems (HIV, STD, and infectious disease) for completeness. A survey of five state epidemiology offices was conducted to obtain information about other approaches to disease surveillance. Auditors also visited the Web sites of the surveyed states and Web sites of six additional states to analyze reports and other publications that these states made available through the Internet.[1] Additionally, representatives of five county health departments were interviewed regarding county responsibilities and their relationship with the Bureau.

- To determine whether the Immunization Program Office accurately collects data on immunization rates, annual school immunization reports for the years 1993 through 1999 were reviewed. Similarly, annual immunization reports for county health departments for the years 1993 through 1999 were analyzed to determine coverage rates for children receiving vaccinations from public health providers. Status reports of

[1] States surveyed were California, Colorado, Mississippi, New Jersey, and Oregon. Auditors visited the Web sites of the states surveyed and also visited Web sites for epidemiology offices in New Mexico, Nevada, New York, Texas, Utah, and Washington. States were selected because they are geographically or demographically similar to Arizona or were identified by public health officials as model states for disease prevention and control.

the Arizona State Immunization Information System were also reviewed to determine the completeness of the State's central immunization registry. Additionally, 14 county health departments and 1 community health center were surveyed regarding the system. Auditors also interviewed 2 private providers and 1 billing contractor regarding ASIIS.

- To determine if the Office of Environmental Health is able to effectively conduct its assigned responsibilities, auditors determined which of the Office's activities are mandated or elective; how often these activities are to be performed; and the size of the population affected by these activities. Reports on activities conducted were reviewed to ascertain the Office's completion rate. Additionally, information about the scope of activities in other state environmental health offices/programs was obtained through a survey of eight states.[1]

Other methods used to obtain information for all three areas include interviews with professional associations, such as the Agency of State and Territorial Health Officials; the Agency of Toxic Substances and Disease Registry; the American Lung Association; and the Arizona Medical Association. Representatives of state and federal agencies, such as the Arizona Department of Corrections, the Arizona Department of Environmental Quality, the Arizona Department of Education, the Centers for Disease Control, the U.S. Department of Agriculture, and the Food and Drug Administration were also interviewed. Finally, auditors accompanied Bureau staff on various site visits and inspections.

Based on this audit work, the report contains findings and recommendations in three areas:

- Improving the Bureau's disease surveillance to more adequately control and prevent disease.

- Improving data collection within the Arizona Immunization Program Office to help the State gauge its progress toward its immunization goals.

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[1] States surveyed were California, Colorado, Nevada, Oklahoma, Oregon, Texas, Utah, and Washington. These states were selected because they are geographically or demographically similar to Arizona or were identified by public health officials as model states for environmental health.

- Regularly reassessing the Office of Environmental Health's activities to improve effectiveness.

This audit was conducted in accordance with government auditing standards.

The Auditor General and staff express appreciation to the Director of the Department of Health Services, and to the Bureau Chief and staff of the Bureau of Epidemiology and Disease Control for their cooperation and assistance throughout the audit.

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FINDING I

BUREAU'S DISEASE SURVEILLANCE SYSTEM NEEDS IMPROVEMENT

While protection of the public from communicable diseases depends on the Bureau's ability to effectively monitor these diseases, current surveillance practices are not effective. Incomplete and delayed data collection, inadequate data analysis, and limited data dissemination hamper the Bureau's efforts to prevent and control disease. Insufficient monitoring to ensure physicians and laboratories comply with disease reporting requirements; county health department weaknesses, such as the inability to investigate all disease cases in a timely manner; increased demands on staff; and inadequate computer systems contribute to surveillance deficiencies. To improve its ability to protect the public from communicable disease, the Bureau should take steps to ensure that laboratories and physicians or physicians' authorized representatives report complete and timely information about diseases; increase its visibility; increase its dissemination of disease information; and strengthen its surveillance technology.

The Importance of Disease Surveillance

Disease surveillance is the ongoing and systematic collection, analysis, and dissemination of information about communicable diseases, such as hepatitis, HIV, and tuberculosis. It has been called "the single most important tool for identifying infectious diseases that are emerging, causing serious health problems, or diminishing."[1] Surveillance data permits state health agencies to identify disease outbreaks and at-risk groups and develop strategies to reduce the risk of infection. It also permits effective resource allocation and improvements in health care providers' clinical practices. However, these outcomes depend on the surveillance system's effectiveness.

[1] Association of State and Territorial Health Officials. *Policy Positions*. October 1998, p. 30.

The Centers for Disease Control and Prevention have developed guidelines for evaluating the effectiveness of state surveillance systems. According to these guidelines, the system must be sensitive, capturing complete and timely information on disease cases, and useful, producing the needed information through analysis and dissemination to prevent and control diseases.

Arizona's communicable disease surveillance system is comprised of several components, including the Bureau, health care providers, and county health departments. The Bureau is responsible for monitoring and controlling the spread of 71 communicable diseases and relies on health care providers, laboratories, and county health departments to regularly report disease information. State rules require laboratories to report these diseases directly to the Bureau. Labs report basic case information, such as the infected individual's name, test type, and lab results. State rules also require that physicians report diseases to their county health departments, which are responsible for investigating and confirming the reported cases, and reporting them to the Bureau. Physicians supply the counties with case information, such as the infected individual's address, that is not generally provided by the laboratories but is necessary to conduct an investigation. Additional information, such as data on the source of transmission, is also collected through the investigation process and provided to the Bureau. The Bureau uses its collected data to guide disease prevention and control efforts. It also uses data to determine which reported incidents meet national case definitions and are reportable to the Centers for Disease Control and Prevention, which monitor communicable diseases nationwide.

Laboratories and physicians are required to report communicable diseases.

Current Practices Limit Effectiveness of Surveillance Efforts

Although disease surveillance is essential to protect the public's health, current surveillance practices do not adequately ensure that the Bureau can monitor and respond to communicable diseases.

- First, physicians and laboratories do not always report diseases as required by law, hindering the prediction of outbreaks.

- Second, many reports are submitted late.

- Third, because the Bureau does not always adequately analyze surveillance data, it is sometimes unable to identify outbreaks.

- Finally, the Bureau's dissemination of surveillance information is limited, leaving some health professionals without timely access to valuable information.

Underreporting hinders the Bureau's ability to identify outbreaks—Both laboratories and physicians are required to report communicable diseases to ensure that all diseases are reported and that complete information is gathered on each case. These matching laboratory and physician reports enable disease reports to be verified by the Bureau and officially counted as cases. Despite the importance of complete information, neither providers nor labs report every disease incident. To determine the completeness of data collected, auditors reviewed a sample of 4,653 reported disease cases. The sample comprised all disease reports entered into the General Communicable Disease Registry between July 1, 1998 and December 31, 1998. The review revealed that for 1,221 of the cases sampled, the Bureau had received laboratory but not physician reports. These findings suggest that physicians fail to report at least one-fourth of the reportable diseases they diagnose, increasing the likelihood that disease incidents will not be identified in a timely manner. Similarly, laboratories may not report every case. According to Bureau staff, laboratory reporting is far more consistent than physician reporting; however, they too sometimes fail to report disease cases.

Physicians do not always report many reportable diseases.

Even when physicians and laboratories report diseases to the Bureau, their reports do not always contain complete information, which delays both the initiation of an investigation and the determination of whether a case meets the case definition and can be officially counted. Auditors reviewed samples of lab reports from each of the surveillance sections and found that many reports were incomplete. For instance, in a two-week sample of

HIV laboratory-reported cases, approximately 40 percent contained incomplete information. The reports were missing information, such as the diagnosing physician's name and phone number, which disease investigators require to conduct case investigations. Incomplete reports require greater staff time to process, increase the likelihood of case reporting errors, and delay case intervention, all of which lengthen the public's exposure to risk.

Although the Bureau manages outbreaks well once it learns of them, incomplete or under-reporting hinders its ability to quickly detect outbreaks. When the Bureau is unaware of a disease case, it cannot intervene to ensure treatment of the infected individual and prevent further transmission of the disease. For example, a measles outbreak late in 1998 spread unchecked for almost a month, exposing many people to unnecessary risk of infection, because the two cases likely to have begun the outbreak had not been immediately reported to the Bureau by the diagnosing physicians or the testing laboratories. Additionally, an outbreak of Legionnaire's Disease occurred at a Tucson hospital in 1996. While reviewing cases through hospital laboratory databases, the Bureau discovered that an outbreak of the same disease had occurred ten years earlier. The failure to identify the first outbreak could have exposed the public to unnecessary risk of infections.

Many reports are submitted late—To ensure that the Bureau can respond promptly to disease outbreaks, rules dictate that highly contagious or serious diseases, such as tuberculosis and rubella, be reported within 24 hours of identification or treatment. Other diseases, such as coccidioidomycosis (valley fever) or varicella (chicken pox), which are less contagious or serious, must be reported within a week. However, as demonstrated above in the case of the measles outbreak, physicians do not always report in a timely manner. Furthermore, although many laboratories submit regular weekly reports to the Bureau, their reports of individual disease cases may be late. Auditors reviewed a sample of 302 infectious disease cases reported by laboratories during the first week of December 1998. The review revealed that, on average, the Bureau received disease reports 18 days after the laboratories produced test results.

Many laboratory reports are received late.

Even when the Bureau collects data within appropriate time frames, it does not always enter it into databases in a timely manner. Case investigation data for certain diseases is collected on supplemental data collection forms, but the Bureau assigns these forms a lower priority so the data is not always entered immediately. For example, the Bureau was over a year behind in its processing of supplemental streptococcus data when an outbreak occurred. Before the Bureau could analyze the data and use the findings to respond to the outbreak, it had to process all the data collection forms. The data could have been helpful for the outbreak investigation because it differentiated between various strains of the disease, revealing a rise in a particularly severe strain.

Maricopa County had a recent backlog of 2,200 uninvestigated HIV/AIDS cases, potentially costing the State over $2.5million.

Delayed or incomplete data collection may also impact funding the State receives for some diseases. For example, a recent backlog of Maricopa County HIV/AIDS cases awaiting investigation had accumulated for several years and, at its peak, totaled over 2,200 cases. Because the cases had not been processed, the Bureau's disease figures understated the extent of AIDS in the State, indicating a decline in the number of cases when, in fact, the number was stable. Furthermore, because the cases could not be officially counted until processed, they were not calculated into the allocation formula for federal AIDS program dollars, potentially costing the State over $2.5 million in lost funding. In 1999, the Bureau worked with the Maricopa County Department of Public Health Services to reduce the backlog of cases awaiting investigation. The potential for lost funding as a result of late or incomplete data exists with other diseases, such as sexually transmitted diseases, whose funding is also partly dependent on the number of reported cases.

Surveillance data is not adequately analyzed—The Bureau does not regularly conduct in-depth analyses of its data and analyzes little of the large quantity of collected data. When regularly compiled and analyzed, surveillance data permits the identification of at-risk groups, the development of strategies for intervention when potential and real outbreaks occur, and the education of the public and the medical community about current risks and prevention strategies. Without complete and timely data collection and regular analysis, the Bureau cannot consistently identify trends or anticipate and prepare for outbreaks.

Bureau's dissemination of surveillance information is limited— The Bureau disseminates surveillance information through various outlets. These include:

- public health announcements, notifying the public of outbreaks, preventive measures, and heightened risks;
- surveillance reports with statistics on the numbers and characteristics of infected individuals;
- fax alerts to health care providers during outbreaks; and
- a regular newsletter, *Prevention Bulletin*.

Compared to other state epidemiology agencies, the Bureau produces only a limited number of surveillance reports and does not widely disseminate them. For example, the Sexually Transmitted Diseases section produces only one annual surveillance report, with a distribution list of only 65 individuals, primarily state and county health department staff. Similarly, the Infectious Disease section does not regularly produce or distribute printed surveillance reports on infectious diseases. In addition, although the Bureau has access to a wide audience through the Internet, its current Web page makes little surveillance data available.

*The **Prevention Bulletin** may not meet health professionals' needs.*

Public health professionals have expressed a desire for more regular and timely surveillance information from the Bureau. Their comments suggest that the Bureau's most widely distributed publication, *Prevention Bulletin*, may not meet their needs for disease information from the Bureau. The *Bulletin*, with a distribution list of almost 12,000, including all state-licensed physicians, county health departments, and other health professionals, contains information about recent outbreaks, immunization drives, and other related issues. Due to its bimonthly production schedule, however, providers sometimes learn about outbreaks after they have ended. Providers expressed an interest in more frequent statistical reports and regular feedback on the disease cases they report. In addition, some county health department representatives expressed interest in receiving more frequent statistical reports and, in general, greater feedback on reported data.

Several Factors Contribute to Deficiencies in the Bureau's Surveillance System

Several factors contribute to deficiencies in the Bureau's disease surveillance system. First, the Bureau does not enforce reporting requirements for physicians and laboratories. Second, some county health departments are unable to investigate all cases. Third, the Bureau's current computer systems are inadequate to efficiently track and monitor diseases. Finally, increased demands on staff cause them to spend less time analyzing data and assessing its quality.

Bureau does not ensure that physicians and laboratories comply with reporting requirements—The Bureau does not systematically take action to ensure that reporting is complete and timely. First, it does not regularly monitor reporting by physicians and laboratories to determine if and when reports are late or missing. For example, the Bureau does not maintain complete lists of laboratories required to report disease data and cannot, therefore, determine which laboratories may not be submitting the required weekly reports. Second, if a report is late or missing, the Bureau does not consistently act to prevent a repeat occurrence. On occasion, severely late reports and late or missing reports of serious diseases will prompt a call from the Bureau to the physician or laboratory; however, this practice is inconsistent. Similarly, while the Sexually Transmitted Diseases section notifies by letter physicians who fail to report or report later than required, the Bureau's other surveillance units do not generally follow this practice. In addition, although failure to comply with reporting requirements constitutes unprofessional conduct under licensing statutes, as well as a class 3 misdemeanor, the Bureau rarely reports noncompliant physicians for discipline to the relevant state licensing boards, such as the Board of Medical Examiners.

The Bureau does not monitor reporting by physicians and laboratories.

Several factors make it especially challenging to monitor and enforce physician reporting requirements. First, the medical profession's historical independence makes any externally imposed requirement more difficult to enforce. Physicians may view themselves as having discretionary authority over reporting. For example, while it is not common, some providers refuse to report certain diseases, such as HIV, to protect patient confidentiality.

Second, when faced with competing demands for their time and energy, physicians sometimes assign reporting a low priority, or, since often it is administrative rather than clinical staff who actually handle reporting, physicians may be unaware of either state reporting requirements or the reporting practices in their offices. Third, as Bureau staff and some medical professionals have suggested, physicians may not report because they fail to see the purpose or benefits of reporting. Since the Bureau provides little tangible return in the form of feedback or incentives for reporting, physicians may not understand the necessity of regular, timely reporting.

Some county health departments are unable to investigate all cases—County health departments are not always able to fulfill their surveillance responsibilities and thus they contribute to the problem of late and incomplete data. The counties receive disease reports from physicians, investigate and confirm cases, and report confirmed cases to the Bureau. Yet the counties either do not investigate or do not investigate in a timely manner many disease cases. For example, there are about 10,000 cases of chlamydia annually in Maricopa County, but the County investigates only an estimated one-fifth of these cases. Additionally, the previously mentioned HIV/AIDS case backlog illustrates the lateness of many investigations.

Maricopa County investigates only one-fifth of its chlamydia cases.

The Bureau's information management systems are inadequate—The Bureau's current computer systems hinder timely data entry and analysis. The Bureau uses several computerized databases, including four developed by the Centers for Disease Control (CDC). However, state and county data systems are not integrated. Most disease reports from the counties and laboratories to the State are in paper form and thus, are manually processed by the Bureau. Although two counties, Maricopa and Pima, enter certain disease data directly into a state database, the other counties rely on Bureau staff to perform their data entry and produce statistical summaries. Some counties and laboratories are capable of and interested in reporting electronically; however, the Bureau does not currently have the technology to move toward electronic reporting.

Additionally, some of the Bureau's disease databases are antiquated or difficult to use. For example, the CDC-provided Tuberculosis Information Management System requires that users

pass through as many as 13 different screens to enter a single case's data, which leads to time-consuming data entry and a decreased likelihood that data entry will be complete and accurate.

Finally, existing Bureau technology limitations are compounded by inadequate support from the Department's Division of Information Technology Services. Division staff are unavailable to adequately maintain existing services, such as the agency's Internet Web site, or perform minor system improvements, such as creating a program that would automatically generate surveillance data reports or produce letters to noncompliant physicians.

Bureau management attributes deficiencies to increasing demands placed on staff—According to Bureau management, increasing demands on Bureau staff lessen their ability to perform surveillance activities, such as data analysis and data quality assessment. To begin with, staff time is being spent helping county health departments in fulfilling their surveillance responsibilities. In addition, there have been increases in disease clusters and outbreaks. Finally, fewer staff are available to conduct surveillance. For example, in the HIV section, four authorized surveillance positions are vacant because they are unfunded.

Bureau management report that staff are often too busy responding to outbreaks and handling problems to analyze data and produce reports. For instance, during a hantavirus outbreak, no disease surveillance was conducted in the State because staff resources were diverted to address the crisis.

Arizona's Disease Surveillance System Can Be Improved

To adequately protect the public from communicable diseases, the Bureau should take action to improve its disease surveillance system. First, the Bureau should take steps to ensure that physicians and laboratories report information about diseases in a complete and timely manner. Second, the Bureau should improve its visibility to raise awareness of the importance of disease surveillance. Third, the Bureau should increase its dissemination

of surveillance data. Finally, the Bureau should address deficiencies in its surveillance technology.

The Bureau should take steps to ensure complete and timely reporting—To ensure that its data is accurate and useful, the Bureau should take action to increase the completeness and timeliness of disease reporting. First, in accordance with the Centers for Disease Control and Prevention's guidelines for effective surveillance, the Bureau should develop a system to periodically evaluate the State's disease surveillance system. This evaluation would enable the Bureau to regularly identify providers and laboratories whose reporting is incomplete or late. Second, to encourage greater compliance with reporting requirements by laboratories and physicians, the Bureau could expand its practice of issuing reminder letters to noncompliant physicians and thank-you letters to compliant physicians. Third, the Bureau should strengthen relationships with hospitals and health care provider groups, to improve reporting completeness and reduce its reliance on physicians. Reliance on multiple reporting sources is not only recommended by the Centers for Disease Control and Prevention but has also been successful in other states. For instance, Mississippi's Disease Control and Environmental Epidemiology Division does not rely heavily on physicians for reporting and, instead, maintains strong relationships with hospital infection control nurses to ensure timely and complete disease reporting.

The Bureau should improve its visibility to raise awareness of the importance of disease surveillance—According to the public health literature, public health agencies lack adequate self-promotion and could benefit from greater efforts to market themselves. The Bureau should involve its own and Department of Health Services' leadership in promoting the agency's surveillance efforts. The Bureau should also follow the example of other state epidemiology agencies and develop its contact with the media. Greater visibility could provide the Bureau an opportunity to communicate the importance of disease surveillance to doctors, laboratories, and other health care providers. The State Health Department in Oregon, which has extensive contact with the media, including regular meetings to inform them of the latest developments, credits its visibility as the reason for the state's achievement of a high level of disease reporting.

The Bureau should consider surveying physicians and county health departments to determine the type of information needed.

Dissemination of surveillance data should be improved—The Bureau should give more feedback to health care providers, laboratories, and county health departments. This could mean distributing more regular reports of surveillance data or providing information on the outcomes of specific cases. It could take the form of regular surveillance statistics, interim findings from special studies, or reports of Bureau activities. The Bureau should consider surveying physicians and county health departments to determine the type of feedback they desire and the usefulness of current outreach efforts, such as the *Prevention Bulletin*, and develop its outreach according to survey findings.

The Bureau should also maximize the use of its Internet Web site to ensure broad access to surveillance information. While the Bureau's Web site features some reports and a list of reportable diseases, it provides less information than other, similar Web sites. For example, other states' sites, such as Texas, California, and New Jersey, offer downloadable surveillance reports, the list of reportable diseases, reporting forms, reporting requirements, and department publications. Additionally, these Web sites offer more current information than Arizona's site. Access to extensive surveillance information via the Internet is more immediate than through other media, eliminates the need to distribute costly printed reports, and establishes a potential foundation for the development of electronic reporting.

The Bureau should address deficiencies in technology—Outdated and ineffective information management systems hinder the Bureau's and county health departments' ability to conduct surveillance efficiently. The Bureau should explore more advanced information technology. For example, electronic reporting of disease data by laboratories and physicians could improve efficiency and enhance report completeness and timeliness. The Bureau should also explore minor system enhancements it could make in the short term, such as automatically generating surveillance data reports.

Recommendations

1. To ensure the completeness and timeliness of disease reporting, the Bureau should:

    a) Develop a system to evaluate the State's surveillance system and identify noncompliant laboratories and physicians;
    b) Expand the practice of contacting physicians and laboratories by letter when a communicable disease report is late or missing;
    c) Report to the appropriate state licensing board, such as the Board of Medical Examiners, those physicians who are chronically noncompliant with reporting requirements; and
    d) Strengthen relationships with other reporting sources.

2. The Bureau should more widely and regularly disseminate surveillance information. Specifically, the Bureau should:

    a) Provide greater feedback in the form of regular surveillance reports, publications, and case updates to physicians, laboratories, and county health departments;
    b) Consider conducting a survey to determine the kind of feedback desired by physicians, laboratories, and county health departments;
    c) Evaluate the *Prevention Bulletin*'s contents and distribution to ensure that it meets public health professionals' needs for disease information from the Bureau; and
    d) Improve its Internet Web site by providing online access to a wider selection of surveillance reports, reporting forms, and important, time-sensitive, public health information.

3 The Bureau should address deficiencies in its information management systems. Specifically, the Bureau should:

    a) Explore more advanced information technology for the State's disease surveillance system, such as electronic reporting of disease data by laboratories and physicians; and
    b) Explore system enhancements such as automatically generating surveillance data reports.

FINDING II

ARIZONA IMMUNIZATION PROGRAM OFFICE SHOULD IMPROVE EFFORTS TO COLLECT DATA

The Arizona Immunization Program Office should improve efforts to collect data to gauge the State's progress toward reaching its immunization goals. Although estimates of statewide immunization rates for children indicate that coverage levels have improved, rates remain low for children receiving vaccinations from some county health departments. In addition, problems with the Office's computerized reporting system often prevent county health departments from reporting timely and complete immunization records. Further, the Office does not adequately ensure the accuracy of immunization levels reported by schools. By improving its data collection processes, the Office may be able to more effectively monitor immunization levels throughout the State.

Responsibilities of the Arizona Immunization Program Office

The Arizona Immunization Program has several responsibilities that are essential for helping the State achieve its immunization goals. The Office is responsible for overseeing the distribution of free vaccines to eligible providers, and promoting hepatitis B screening for pregnant women and their newborns. Additionally, the Immunization Office collects data on coverage levels for children receiving vaccinations from county health departments and provides this information to the health departments. As a federal grant recipient, the Office is also required to collect data regarding immunization levels for children attending childcare facilities, Head Start Centers, and schools and report this data to the Centers for Disease Control and Prevention (CDC). The Office collects data from county health departments and schools by:

- Obtaining semi-annual reports of immunization levels for children receiving vaccinations from county health departments.

- Obtaining annual immunization data reports (IDRs) from schools, which contain immunization levels for kindergartners and 6th- and 11th-graders.

Federal guidelines recommend that states achieve a 90 percent immunization rate for two-year-old children by the year 2000 to continue to reduce incidences of all vaccine-preventable diseases. Collecting immunization data from county health departments enables the Office to gauge its progress toward the 90 percent goal. Moreover, monitoring vaccination coverage for county health departments and schools allows the Office to identify groups at risk of vaccine-preventable diseases, to provide feedback to providers, and to evaluate the effectiveness of programs designed to increase coverage. This information also supplements data collected at the national level, such as the CDC's National Immunization Survey, which recently estimated that the percentage of fully immunized 19- to 35-month-old children in Arizona increased from 74 percent in 1997 to 78 percent in 1998.

Immunization rates recently increased from 74 percent to 78 percent.

Arizona's Immunization Rates Have Not Improved in Every Area

Despite recent improvements in statewide immunization rates, many children receiving immunizations from public health providers are inadequately immunized. Immunization rates for county health departments are an important indicator of statewide coverage levels because, according to Office management, over 53 percent of Arizona children receive free vaccinations from a county health department. Based on the semi-annual assessments completed by the State's county health departments and collected by the Office, coverage levels for children using health departments have generally improved over the past four years, especially in rural counties (see Table 2, page 23). However, recent figures for Maricopa and Pima Counties reveal that less than half of the children served by the State's largest county

Table 2

Arizona Department of Health Services
Bureau of Epidemiology and Disease Control
County Health Department Immunization Levels
Percentage of Two-Year-Old Children Fully Immunized [1]
Fall 1994, Fall 1998, and Spring 1999

County	Fall 1994	Fall 1998	Spring 1999
Apache	49%	78%	69%
Cochise	74	73	69
Coconino	63	72	76
Gila	78	82	86
Graham	71	80	81
Greenlee	70	49	89
LaPaz	58	78	84
Maricopa	51	44	47
Mohave	75	68	73
Navajo	51	56	58
Pima	38	40	43
Pinal	46	64	64
Santa Cruz	64	89	90
Yavapai	62	75	70
Yuma	68	89	N/A[2]

[1] According to federal guidelines, the age-appropriate vaccinations for two-year-old children include four doses of DTaP (diphtheria, tetanus, and pertussis), three doses of polio, and one dose of MMR (measles, mumps, and rubella).

[2] According to Immunization Program Office Staff, spring 1999 figures for the Yuma County Health Department are inaccurate because the department lost part of its database.

Source: County data assesments from the Arizona Department of Health Services, Division of Public Health, Bureau of Epidemiology and Disease Control, Arizona Immunization Program Office.

health departments are fully immunized by age two. The most recent figures (spring 1999) indicate that only 47 percent of two-year-old children served by the Maricopa County Health Department and only 43 percent of two-year-old children served by the Pima County Health Department are fully immunized.

Moreover, since the fall of 1994, Maricopa County has failed to sustain and Pima County has failed to achieve a rate of above 50 percent (see Table 2).

Arizona State Immunization Information System Needs Improvement

County health departments have experienced difficulties using the Arizona State Immunization Information System (ASIIS), and the Office does not ensure that all private health providers report immunization data to ASIIS. County health departments have experienced problems with ASIIS that affect their ability to submit immunization records and generate reports. In addition, the Office lacks an effective strategy to promote and enforce the state law requiring private providers to report to ASIIS. However, because ASIIS serves as a useful system for tracking immunization records and rates statewide, the Office should continue to work to make it easier to report immunization records and more thoroughly enforce reporting requirements.

ASIIS is a statewide, computerized registry.

The Arizona State Immunization Information System is one of many statewide, computerized immunization registries in the country. Under A.R.S. §36-135, all health providers (public and private) are required to submit immunization records for patients under 18 years of age to the State's central database, which is part of ASIIS.

County health departments experience problems using ASIIS— Because county health departments have experienced various problems using ASIIS, they may not be able to maintain and submit complete and timely records. Specifically, county health departments have had difficulties in submitting records to the State's central database, obtaining patient records, and producing immunization reminder notices for patients. They have also lost data and encountered duplicate records. These problems may have developed because the system was not designed to handle the large volumes of data submitted by some county health departments. Additionally, the construction and maintenance of county databases is further restricted because ASIIS software does not provide a way for computers within a county health department to be connected to one another and thus create a local network.

Some private providers are not reporting to ASIIS— Although private health providers are required to submit immunization records to the State's database, the Office recently estimated that

approximately 6 percent of private health providers enrolled in ASIIS do not report to the system. Until recently, the Office did not have an effective strategy to ensure that all health providers report to ASIIS. Specifically, the Office has not consistently identified and contacted health providers who do not submit records to ASIIS.

The Office should continue to improve ASIIS—Because immunization registries "offer the best source of accurate, real-time data on immunization levels," the Immunization Program Office should continue to improve ASIIS.[1] Specifically, the Office should continue to provide technical assistance to the counties to guarantee that their data is complete and accurate, and to ensure that appropriate backup methods are in place at each of these sites. The Office has recently implemented a process to remove duplicate records from the central registry, and it should continue removing duplicate records to ensure that providers do not encounter them when attempting to query the central registry.

Furthermore, the Office should continue with recently implemented plans to systematically review lists of physicians and health providers who administer vaccinations and fail to report to ASIIS. By ensuring that all providers within the State enroll in ASIIS and that enrolled providers submit accurate and timely records, the Office may be able to increase the registry's number and quality of records.

The Office Does Not Ensure That School Reporting Is Accurate

Although accurately tracking schoolchildrens' immunization rates is important, the Office may not be able to adequately monitor these rates. The Office does not ensure that all Arizona schools comply with required coverage levels and that school immunization reports are valid. These problems exist, in part, because the Office does not consistently coordinate efforts with the Arizona Department of Education (ADE). However, the Office can improve its methods for obtaining data from schools

[1] *Policy Positions*, Association of State and Territorial Health Officials, October 1998.

by verifying school records and working with ADE to inform school administration about the importance of immunization and immunization reporting. Additionally, as a CDC grantee, the Office is required to measure school compliance levels and conduct validation studies of school records.

Arizona schools are required by law (A.R.S. §§15-872, 15-874) to enforce immunization requirements and submit annual immunization data reports to the Immunization Program Office. The Office collects annual immunization data reports from schools to determine whether at least 95 percent of kindergartners and 90 percent of 6th- and 11th-graders have received age-appropriate vaccinations and to monitor school immunization levels. In 1998, statewide coverage levels reported to the Department were 96.8 percent for kindergartners and 98.6 percent for 6th- and 11th-graders.

The Office did not verify 1998-99 school reports.

The Office cannot ensure immunization levels for schools—Although Arizona law requires schools to annually submit data about their students' immunization levels to the Immunization Program Office, the Office does not do enough to verify that schools comply with state requirements. For example, the Office did not verify any of the 1998-99 school immunization data reports.

The Office also does not conduct many school site visits although reports indicate that compliance rates for some schools are significantly lower than 95 percent. In 1999, the Office conducted only three school site visits. School site visits are useful because they enable Office staff to review immunization records and help administrators complete referral notices, which serve as reminders for the parents/guardians of noncompliant students.

The Office lacks coordination with ADE— The Office has not consistently worked with the Department of Education to inform school administrators about the importance of immunizations and immunization reporting.

Coordination with ADE could help promote school administrators' awareness of immunizations and emphasize the need for schools to report immunization data to the Office.

Recommendations

1. The Office should continue to improve the Arizona State Immunization Information System by correcting design flaws and making it easier for county health departments to report information.

2. To ensure that the ASIIS registry is comprehensive and that all providers submit records to the system, the Office should:

   a) Continue providing technical assistance to the counties;
   b) Ensure that appropriate backup methods are in place; and
   c) Implement plans to systematically identify health care providers who fail to report vaccinations.

3. The Office should verify school immunization data reports from selected schools.

4. The Office should regularly coordinate with the Arizona Department of Education to develop strategies for promoting the importance of immunization objectives and reporting.

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FINDING III

THE OFFICE OF ENVIRONMENTAL HEALTH'S SCOPE OF ACTIVITIES SHOULD BE REVIEWED

The Office of Environmental Health's scope of activities is too broad. The Office performs numerous duties, ranging from licensing bedding manufacturers to responding to environmental emergencies, such as chemical spills. In addition, the Office performs several unmandated activities intended to protect public health. However, the Office is unable to perform all of these activities. Bureau management should review the Office's activities and propose recommendations to the Legislature regarding a revised scope of duties.

Background

Auditors identified over 40 activities for which the Office is responsible (see Table 3, page 30), all of which are apparently intended to protect the public from environmental health risks, such as poor sanitation, contaminated food, and exposure to pollutants. State law mandates most of the activities the Office of Environmental Health must perform. However, the Office performs other activities that are not mandated by statute, such as inspections of 88 produce warehouses in Nogales, Arizona, that handle approximately 75 percent of the nation's winter produce.

The Office has delegated significant functions to county health departments.

The Office has delegated nine of its activities to the county health departments, including the major functions, such as restaurant inspections. To carry out all of its discretionary activities, the Office has 20 professional staff, including 8 who are federally funded to complete specific tasks. Three positions are funded by the Agency for Toxic Substances and Disease Registry to conduct health assessments, three positions are funded by the United States Environmental Protection Agency for lead poisoning abatement programs, and the Centers for Disease Control and Prevention funds two positions to develop special lead poisoning prevention projects. The Office's 12 state-funded staff are responsible for all the remaining activities.

Table 3

Arizona Department of Health Services
Bureau of Epidemiology and Disease Control
Office of Environmental Health Activities
As of July 1999

Activities	Required Yes	Required No	Number of Facilities or Establishments	Delegated to Counties
Food Safety				
Inspect establishments, such as restaurants, to assure safe food handling	X		18,758	15 counties
Inspect food processors to assure safe food handling	X		5,572	14 counties
Inspect institutional kitchens, such as prisons, to assure food safety	X		174	
Inspect bottled water facilities to assure product safety	X		3	1 county
Inspect ice manufacturers to assure ice is safe to consume	X		3	
Assure food sold is not adulterated or misbranded	X			
Collect food samples during inspections and investigations for analysis	X			
Respond to complaints by inspecting food and bedding irregularities	X			
Evaluate county health department delegation programs	X		15	
Train Registered Sanitarians	X			
Enforce state food code	X			
Interpret state food code	X			
Review blueprints and retailer food plans	X			
Sponsor Sanitarians Council	X			
Assure that all bulked foods are dispensed, labeled, and maintained properly	X			
Inspect produce warehouses in Nogales to assure sanitary conditions		X	88	
Assure that foods sold as kosher are not fraudulently labeled	X			
General Sanitation				
License bedding manufacturers and investigate complaints	X			
Inspect Behavioral Health group home facilities to assure food safety principles	X		202	
License and inspect children's camps	X		75	
Inspect Department of Economic Security child welfare facilities	X		286	
Inspect sanitary condition of fertilizer manufacturers	X			
Inspect hotels and motels to assure sanitary conditions	X		1,276	15 counties
Investigate objectionable facilities and animals	X			15 counties
Inspect public pools and baths	X		10,742	15 counties
Inspect public buildings to assure sanitary conditions	X			
Inspect public schools to assure sanitary conditions	X		1,156	1 county
Inspect coach trailer parks to assure sanitary conditions	X		1,844	14 counties
Toxic Substances				
Provide public health perspective on environmental emergencies, such as spills, fires, etc.		X		
Prepare Health Assessment Report; supported by federal grant monies	X			

continued

Table 3

Department of Health Services
Bureau of Epidemiology and Disease Control
Office of Environmental Health Activities
As of July 1999
(Cont'd)

Activities	Required Yes	Required No	Number of Facilities or Establishments	Delegated to Counties
Toxic Substances (cont'd)				
Prepare Health Consultation Program; supported by federal grant monies	X			
Provide outreach program regarding air quality issues		X		
Provide outreach program regarding indoor air quality		X		
Administer certification program for lead paint abatement	X			
Investigate serious lead poisoning cases	X			
Maintain Lead Poisoning Registry	X			
Conduct pesticide poisoning investigation	X			
Maintain Pesticide Poisoning Registry	X			
Develop statewide lead screening policy; supported by federal grant monies	X			
Miscellaneous				
Conduct special projects, such as adopting new state food code		X		
Promulgate rules	X			
Review rules	X			
Plan and host training seminars		X		
Initiate and moderate task force committees		X		
Provide technical assistance / consultations	X			
Develop technical material, such as pamphlets and other documents	X			

Source: Auditor General staff analysis of information provided by the Office of Environmental Health Management and staff.

Scope of Activities Should Be Reviewed

With responsibility for a wide variety of activities, and a limited number of staff to perform those activities, the Office of Environmental Health needs to review and determine which activities are most crucial to the public health. Currently, the Office cannot perform all of its mandated duties; however, some duties

are more important to the public health than others. Therefore, the Office should prepare recommendations for the Legislature regarding which of its duties can be eliminated, delegated, or transferred to other agencies.

Office cannot perform all duties—The Office cannot perform all of its duties, even though most are mandated by statute. For example, the Office is required to inspect public and semi-public buildings to ensure sanitary conditions are maintained, but because staff have limited time, the Office does not perform any of these inspections. The Office is also required to inspect Child Welfare Facilities to support licensure by the Department of Economic Security. In fiscal year 1998, the Office inspected 231 of 286 facilities (81 percent). Similarly, given travel time and staff constraints, the Office inspected 45 of 75 children's camps in fiscal year 1998.

In fiscal year 1998 the Office inspected only 81 percent of Child Welfare Facilities.

The Office is also unable to monitor the performance of county health departments in carrying out the duties the Office has delegated to them. County health departments have been delegated responsibility for inspecting over 38,000 different facilities and establishments in the State, including 18,700 restaurants; 10,700 public pools and baths; 5,600 food processors; 1,800 trailer parks; and 1,100 school grounds. However, the Office does not monitor the counties' performance of these duties.

Some duties more critical than others—Although there are more duties than can be performed by existing Office staff, not all of these duties are equally important in terms of their potential impact on public health. For example, the Office does not inspect licensed bedding manufacturers, even though such inspections are mandated, because bedding represents a minimal public health risk. However, the Office considers revising the State's food code an important public health activity. The Office also considers inspections of produce warehouses, which are not mandated, an important public health activity because of the possible use of contaminated well water to process the produce.

Some Office duties have minimal impact on public health.

The Office has identified duties for which the public health impact is not clearly established. For example, the duty to inspect kosher foods to ensure authenticity is an issue of consumer fraud

rather than public health. The Office also believes trailer park inspections, in the absence of a complaint, represent a minimal public health impact.

Office needs to review and prioritize all duties—Although the Office has identified some activities as a low priority, the Office has not systematically prioritized its various duties nor sought to have less critical mandates removed by eliminating, delegating or transferring them to other agencies. The Office should assess the relative public health impact for all of its duties. It should then prepare a proposal for legislative consideration to eliminate those mandated duties with little or no public health impact. This would allow the Office to focus its limited resources on the most important duties and remove regulatory requirements from statute.

Recommendation

1) The Office should determine those duties that have the greatest impact on public health, and present the Legislature with a proposal outlining those mandated activities that could be eliminated, delegated, or transferred to other agencies.

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AGENCY RESPONSE

Arizona Department of Health Services

Office of the Director

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JANE DEE HULL, GOVERNOR
JAMES R. ALLEN, MD, MPH, DIRECTOR

September 3, 1999

Ms. Debbie Davenport
Acting Auditor General
Office of the Auditor General
2910 North 44th Street, Suite 410
Phoenix, Arizona 85004

Dear Ms. Davenport:

Thank you for the opportunity to review the Performance Audit of the Tobacco Education and Prevention Program (TEPP) that was conducted as part of the Sunset review of the Arizona Department of Health Services (ADHS) as provided in A.R.S. 41-2951 through 41-2957.

The findings and recommendations contained in your report have been carefully reviewed by the staff of the ADHS and, in accordance with the instructions outlined in your letter of July 29, 1999, the enclosed response is provided.

The ADHS greatly appreciates the hard work and professionalism shown by your staff during the conduct of their audit. We also appreciate the insights provided by your staff during the audit process through the audit's findings and recommendations. From the knowledge gained as a result of your efforts, we will be able to improve our work processes. The TEPP staff has already begun to implement significant policy changes that we believe will address many of the findings and recommendations contained in the audit report.

Sincerely,

James R. Allen, M.D., M.P.H.
Director

JRA:RLH:ah

Response to the Performance Audit of the
Arizona Department of Health Services
Bureau of Epidemiology and Disease Control Services

Overview:

The Arizona Department of Health Services (ADHS) agrees in general with the findings of the audit team.

Finding I - "Bureau's Disease Surveillance System Needs Improvement"

The Bureau generally agrees with Finding I and recognizes the deficiencies of the current infectious disease surveillance system. The reasons behind the problems are complex. It is important to note that during the period from 1993 through 1998 the state's population has increased 21%; the number of annual communicable disease reports has increased by 77%; the number of laboratory reportable conditions has increased by 230%; but the number of surveillance staff has remained the same. Compounding this issue is the fact that in none of the 15 county health departments have their communicable disease surveillance and control staff increased to be able to meet these needs at the local level. The growing spectrum of diseases of public health importance, Arizona's rapid population growth, and the changing demographics in the State have overwhelmed the Bureau's ability to address adequately the current disease surveillance needs. These resource constraints increasingly limit the Bureau's capabilities in the areas of disease surveillance.

In addition to the need for appropriate resources and adequate staffing, an effective disease surveillance system is closely interwoven with laboratory support, county health departments' ability to investigate and follow-up on case reports, health care providers' willingness to comply with reporting requirements, and the ability of large health care institutions to detect changes in infection rates and to report them to the Bureau. For example, on page 12, the observation is made that "While reviewing cases through hospital laboratory databases, the Bureau discovered that an outbreak of the same disease had occurred ten years earlier. The failure to identify the first outbreak could have exposed the public to unnecessary risk of infections." In this instance, the hospital's infection control program did not recognize the increased rate in their hospital infections, and consequently, the hospital did not report the cases to the Bureau. Not only is it physically impossible for the Bureau to monitor the databases of all health care providers, this would be perceived as a significant intrusion by the state into the internal operations of the health care provider.

It is noted on page 17 that existing Bureau technology limitations are compounded by inadequate support from the Department's Division of Information and Technology Services (DITS). We would like to point out that the data registries that form the foundation of the Bureau's disease surveillance systems were developed by the federal Centers for Disease Control and Prevention (CDC) and their use is mandated by CDC reporting requirements. Unfortunately, the data registries cannot be

supported by DITS because DITS did not develop the computer software for the data registries and does not have the source code.

With regard to vacancies in the Bureau, we have found, as have others, that the state's salary structure is not highly competitive nationally, leading to difficulties in recruiting and retaining qualified staff.

Finding I Recommendations

1. To ensure the completeness and timeliness of disease reporting, the Bureau should:

    a. Develop a system to evaluate the State's surveillance system and identify noncompliant laboratories and physicians;

        The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

    b. Expand the practice of contacting physicians and laboratories by letter when a communicable disease report is late or missing;

        The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

    c. Report to the appropriate state licensing board, such as the Board of Medical Examiners, those physicians who are chronically noncompliant with reporting requirements; and

        The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

    d. Strengthen relationships with other reporting sources.

        The finding of the Auditor General is agreed to, and the audit recommendation will be implemented.

2. The Bureau should more widely and regularly disseminate surveillance information. Specifically, the Bureau should:

a. Provide greater feedback in the form of regular surveillance reports, publications, and case updates to physicians, laboratories, and county health departments;

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

b. Consider conducting a survey to determine the kind of feedback desired by physicians, laboratories, and county health departments;

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

c. Evaluate the *Prevention Bulletin's* contents and distribution to ensure that it meets public health professionals' needs for disease information from the Bureau; and

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

d. Improve its Internet Web site by providing online access to a wider selection of surveillance reports, reporting forms, and important, time-sensitive, public health information.

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

3. The Bureau should address deficiencies in its information management systems. Specifically, the Bureau should:

a. Explore more advanced information technology for the State's disease surveillance system, such as electronic reporting of disease data by laboratories and physicians; and

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Comment: A major barrier to electronic reporting is the fact that no single commercial software is available to interface with the various laboratory reporting systems. Additionally, each laboratory is likely to have a different computer data system. Some state health departments have received CDC funds to explore the feasibility of such electronic reporting; however, it does not appear that any major progress has been made to date on this issue by CDC. Another concern associated with electronic reporting that first must be addressed is the maintenance

of patient confidentiality.

b. Explore system enhancements such as automatically generating surveillance data reports.

The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Finding II "Arizona Immunization Program Office Should Improve Efforts to Collect Data"

(A) Arizona's Immunization Rates Have Not Improved in Every Area

The Bureau agrees in general with the statements in this section, but certain clarifications should be made. For example, on page 23 it is stated that only 47 % of two-year-old children served by Maricopa County Department of Public Health (MCDPH) and only 43% of two-year-old children served by Pima County Health Department are fully immunized. It should be explained that every child who receives even a single immunization by a county health department is included in that county's immunization database. County health departments conduct numerous special immunization outreach activities at various locations, including shopping malls, Women, Infants and Children (WIC) offices, schools, day care centers, etc., and these events may be the one and only immunization contact that the child will have with the county's immunization program. The child's other immunizations may be given by the child's primary health care provider. Even if a child has received only one of a possible 16 immunizations from a county health department, that child must be included in the county's immunization database. Although the child may be fully immunized, the county's database will continue to list this child as receiving only one vaccination. Because of this reporting artifact, the Bureau believes the actual immunization coverage levels are significantly higher than the rates given in this report. Once the Arizona State Immunization Information System (ASIIS) becomes fully functional, we believe this issue can be resolved.

(B) Arizona State Immunization Information System (ASIIS) Needs Improvement

The Bureau generally agrees with the conclusions provided in this section.

(C) The Office Does Not Ensure That School Reporting is Accurate

The Bureau generally agrees with the recommendations of this section. However, it should be noted that a reliability and validity study on the 1998-1999 school immunization data was not conducted because the CDC grant that funds this activity requires a biennial study and does not provide funding to conduct annual studies. A reliability and validity study was conducted for the 1997-1998 school year and another study is scheduled for the 2000-2001 school year. As noted in the report, the school

1998 immunization data demonstrated coverage levels at an all-time high of 97% for Kindergartens (72,616 students), and 99% for 6th and 11th grades (121,865 students). The Bureau feels that these coverage results are excellent.

It should be noted that the Bureau has and will continue to coordinate activities with the Arizona Department of Education (ADE). However, it is the Bureau's understanding that funding is no longer available in ADE for immunization compliance activities and any assistance from ADE will be through ADE staff only as availability permits.

Finding II Recommendations

1. The Office should continue to improve the Arizona State Immunization Information System [ASIIS] by correcting design flaws and making it easier for county health departments to report information.

   The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

2. To ensure that the ASIIS registry is comprehensive and that all providers submit records to the system, the Office should:

   a. Continue providing technical assistance to counties;
   b Ensure that appropriate backup methods are in place; and
   c. Implement plans to systematically identify health care providers who fail to report vaccinations.

   The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

3. The Office should verify school immunization data reports from selected schools.

   The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

4. The Office should regularly coordinate with the Arizona Department of Education to develop strategies for promoting the importance of immunization objectives and reporting.

   The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

Finding III: "The Office of Environmental Health's Scope of Activities Should Be Reviewed."

The Bureau generally agrees with the findings of this section.

Finding III Recommendation

1. The Office should determine those duties that have the greatest impact on public health, and present the Legislature with a proposal outlining those mandated activities that could be eliminated, delegated, or transferred to other agencies.

   The finding of the Auditor General is agreed to and the audit recommendation will be implemented.

   Comment: The Bureau has requested as recently as last year statutory revisions that would have removed the mandate to license and inspect bedding manufacturers and would have repealed the statutory requirements for the sale of bulk foods. The Bureau hopes to be successful in repealing those and other mandates that have little or no impact on public health in the next legislative session.

Other Performance Audit Reports Issued Within the Last 12 Months

98-13	Private Enterprise Review Board
98-14	Adult Services
98-15	Podiatry Board
98-16	Board of Medical Examiners
98-17	Department of Health Services—Division of Assurance and Licensure
98-18	Governor's Council on Developmental Disabilities
98-19	Personnel Board
98-20	Department of Liquor
98-21	Department of Insurance
98-22	State Compensation Fund
99-1	Department of Administration, Human Resources Division
99-2	Arizona Air Pollution Control Commission
99-3	Home Health Care Regulation
99-4	Adult Probation
99-5	Department of Gaming
99-6	Department of Health Services—Emergency Medical Services
99-7	Arizona Drug and Gang Policy Council
99-8	Department of Water Resources
99-9	Department of Health Services—Arizona State Hospital
99-10	Residential Utility Consumer Office / Residential Utility Consumer Board
99-11	Department of Economic Security—Child Support Enforcement
99-12	Department of Health Services—Division of Behavioral Health Services
99-13	Board of Psychologist Examiners
99-14	Arizona Council for the Hearing Impaired
99-15	Arizona Board of Dental Examiners
99-16	Department of Building and Fire Safety
99-17	Department of Health Services' Tobacco Education and Prevention Program

Future Performance Audit Reports

Department of Health Services—Sunset Factors
Arizona State Board of Accountancy
Department of Environmental Quality