

EFFICIENCY: The New Watchword in Kansas

Duane Boline assumed leadership at the Kansas Division of Health & Environmental Laboratories after 20 years in the private sector, managing environmental laboratories serving consulting engineering firms. Thus, it is no surprise that his five-year public health tenure has been marked by a common-sense, business perspective.

“It took me awhile to get used to the idea that I can’t turn a profit here,” said Boline, “but I can control costs. A lot of things that were successful in the private sector are applicable to the public health laboratory.”

Improving Quality Service by Eliminating Waste

A big focus has been efficiency. “When people look to gain efficiency,” he said, “they look at what they’re doing. And that’s the wrong place to look. You

need to look at what you’re *not* doing.” Boline explained, “Every time you’re doing something to a particular sample, it’s value-added time, and every instant you’re not doing something to that sample, that’s time out; that’s waste time.” So if a sample traveling through the laboratory experiences 10% value-added time and 90% waste time, a mere 1% reduction in waste time results in an automatic 10% increase in value-added time. Every small increase in value-added time is an increase in efficiency and productivity. The chal-

lenge, said Boline, “is to achieve efficiency while improving quality service.” After a process improvement training two or three years ago, Boline said people on his staff suddenly realized, “*Oh, I’m the one responsible for eliminating waste.*” The answer is, “Yes, you’re the only one who *can* do it.” Several changes ensued from that training program, including more formalized standard operating procedures and a tighter organizational structure.

Boline’s primary objective of the laboratory is “the production of accurate, defensible data in a timely manner. To achieve this objective, emphasis is placed on identifying the rate determining steps in each testing process.” One ubiquitous concern throughout the laboratory is data management.

ment has gone down, right along with the laboratory’s error rate.

Given Boline’s business perspective, it is perhaps ironic that the Kansas Health & Environmental Laboratories receives a scant 5% of its operating budget from fee-for-service testing, mostly for work performed for the state Division of Environment. Three quarters of the laboratory’s \$5.6 million annual budget comes from state general funds, and the remainder from federal grants.

Blending Two Disciplines Successfully

This budget supports both environmental and health-related testing on behalf of the 2.7 million Kansas residents. While the health focus has been new to Boline, he sees advantages to this dual focus. “I have found it beneficial to take an issue and look at it from the health side and the environmental side. They’re both health-related; one is acute and one is chronic... it gives us a unique perspective.”

Some issues—such as terrorism preparedness—are easier to address with a multi-disciplinary staff. “If we were to get some type of [terrorism-related] sample in,” said Boline, “we don’t have to worry where to take it; it could go to the biological labs or the chemistry labs.” Despite this distinction, Boline stressed that “we function as one unit to the best of our ability.” Managers from both sides of the disciplinary divide meet at least weekly for senior staff meetings. And some equipment, such as a microscope-mounted Fourier transfer infrared spectrophotometer, is being used by microbiologists as well as chemists.

Boline said his years of work in the private sector taught him that data management is “one of the keys to successful management and lowering costs.” To this end, he has overseen the automation of data entry using a software system developed in-house. Optical character recognition software is used for entry of demographic data and touch screens for test selection. A system to enable sentinel laboratories to submit testing requests online and matched, bar-coded specimens is in the process of being implemented. Already, staff time dedicated to data manage-

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From Mumps to Herbicide Testing in a Cold War Era Facility

In recent weeks, the Kansas Health & Environmental Laboratories have been

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heavily involved in work related to a regional mumps outbreak, with more than 400 cases confirmed in the state as of early May. Routine, high-volume work ranges from tuberculosis, parasitology and public water supply testing to heavy metal analyses and pesticide and herbicide testing. The laboratory is a LRN reference laboratory, a Level II laboratory for chemical terrorism testing, a Clinical Laboratory Improvement Amendment (CLIA) certifying agency for clinical laboratories and a National Environmental Laboratory Accreditation Conference (NELAC) accrediting body for environmental laboratories in Kansas.

Kansas is mainly an agricultural state, with most of the population clustered in Wichita and the Kansas City-Topeka corridor. Rolling hills dominate the eastern side of the state and high plains dominate the west. In between them lies the Flint Hill region of native prairie grass. This region, comprising a swath of land about 30 miles across, is considered some of the best pasture land in the country, where wheat, corn, soybeans and milo all thrive.

With agriculture being a prominent part of the state’s geography and economy, Boline said, “You would think that herbicides would be a problem in our streams. We do find them present in low concentrations, but there’s only one time a year when we find significant amounts. It happens in the metro areas when residents go

out in the spring and put herbicides on their grass.” Nonetheless, the laboratory regularly monitors streams in areas vulnerable to run-off from large

commercial feed lots and industrial sites. It also supports environmental monitoring in an area around a nuclear power plant.

The laboratory itself was established in 1885 as a health laboratory and destroyed by a tornado in 1966. In 1974, the state health and environmental laboratories were merged and relocated from temporary post-tornado quarters to a Cold War era structure built as a hospital for Forbes Air Force Base, about eight miles from the capital complex in downtown Topeka. Here it remains today. The air force campus is now an active base for the Kansas National Guard, but the surrounding fields and farmland haven’t changed much in the past half century.

Boline said the 40,000-square-foot laboratory is in serious need of upgrades. Since the cost of a new facility has been deemed too pricey, he said, “There’s a group looking at what could be done to this facility to get a more efficient and safe work environment. We’ll be here for a few years.”

Lab Staff Bring Unique Expertise

Perhaps the laboratory’s biggest challenge is also its biggest asset: staff. Boline praised his “can-do” staff noting that some long-timers have “almost encyclopedic” knowledge of their specialties. The problem is that more than a third of the laboratory’s 78 staff members are eligible for retirement

within the next five years. “My parasitologist was here in ’66 when the tornado hit,” said Boline “and the knowledge in that person’s head is just irreplaceable. It’s that kind of expertise that is being lost.”

In the past, Boline—who earned three chemistry degrees and a professorship at Kansas universities—has exploited his academic contacts to recruit replacement chemists. But that approach may be insufficient to fill the number of vacancies looming, especially with stiff salary competition from the private sector. Nonetheless, Boline averred, “It’s not that grim. We’ve got some very good people and they’re gaining the experience needed to become our future superstars. You’ve just got to look at the situation with a positive attitude and keep recruiting and retaining. There are some efforts being made to address the compensation challenge and hopefully that will help us make some inroads.”

The former secondary school teacher-cum-basketball coach also relies on his contact with fellow public health laboratory directors. Boline called APHL “one of the more progressive and active organizations that I’ve been a member of” and said APHL-facilitated activities bringing members together have been very helpful: “Being able to call other lab directors is something we take for granted and doesn’t get stated very often.”

Other than incremental work on the facility and recruiting for three current vacancies, Boline’s immediate goals for the laboratory come back to efficiency. “We would like to see the development of a more customer-focused service culture to optimize efficiency to achieve maximum value,” he said. “When you see a specimen come in the back door, you have to see more than a swab or a test tube. You have to see a person who has entrusted something to you sitting out there waiting for your answer. If you can just instill that attitude in each member of the staff, they will find a way to make good things happen.”