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ANNUAL REPORT

FISCAL YEAR 2003 - OCTOBER 1, 2002 - SEPTEMBER 30, 2003

Center for Veterinary Medicine

Using Science and Law to Protect Public and Animal Health

CENTER FOR VETERINARY MEDICINE

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES - Food and Drug Administration

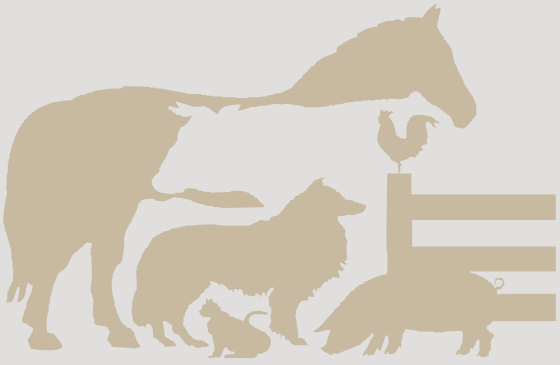
U.S. Department of Health and Human Services

Food and Drug Administration

Center for Veterinary Medicine

ANNUAL REPORT - FISCAL YEAR 2003

October 1, 2002 - September 30, 2003



CENTER FOR VETERINARY MEDICINE

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A Message From the Director...

Progress in Our Efforts To Meet Health Needs

Dr. Stephen F. Sundlof, D.V.M., Ph.D.
Director, Center for Veterinary Medicine

We present this, our first annual report, in an effort to reach out to our stakeholders with a summary of our activities and accomplishments during Fiscal Year 2003 to protect human and animal health.

This has been a watershed year for the Center for Veterinary Medicine – an appropriate year for our first annual report. Some of the most important accomplishments during FY 2003 laid the foundation for collecting animal drug user fees in 2004 and beyond. Building on our "Back to Basics" strategic plan, we aligned our business processes with results-oriented management to expedite the review of animal drug applications while controlling costs.

The Animal Drug User Fee Act is now a reality. The new law will improve access to animal health care products, benefiting consumers, pet owners and food animal producers – as well as the animals to which drugs are administered. The user fees to be paid by the animal health industry will be dedicated to expediting the animal drug application review process, as we focus on performance goals developed in consultation with the industry.

We turned another corner this year in our efforts to address an important public health issue, antimicrobial resistance. For the first time, we have outlined a comprehensive, evidence-based approach to minimizing the emergence and spread of resistant bacteria that result from the use of antimicrobial drugs in food animals. Guidance for Industry #152 provides a scientific risk-based process for assessing the likelihood that an antimicrobial drug used to treat an animal may lead to infections in humans by bacteria resistant to treatment with antimicrobial drugs. This risk information will enable CVM to assess the likelihood that antimicrobial resistance might result from use of a drug in food animals, and to manage those risks to avoid resistance before it develops.

We reached historic milestones in the enforcement of our regulation that is intended to prevent the establishment and spread of Bovine Spongiform Encephalopathy (BSE). FDA adopted the BSE feed regulation in 1997 to avoid the public health risks and economic disasters that have resulted from BSE outbreaks in other countries. Due largely to the efforts of state regulatory agencies and FDA field offices, we reached two goals during the past year that represent unprecedented regulatory achievements: inspection of 100 percent of the firms that are at the top of the chain in feed manufacture and distribution – and greater than 99 percent compliance by those firms. What's more, we made significant strides during the year toward development of practical tests for detecting illicit ingredients in ruminant feed.

There is more. As part of our contribution to the nation's effort to counter bioterrorism, we took the first steps toward development of a comprehensive animal feed safety system. We also completed a lengthy administrative hearing as part of our effort to withdraw approval of the poultry drug enrofloxacin (a fluoroquinolone) on the grounds that its use results in an unacceptable level of antimicrobial resistance.

We approved 44 percent more original, supplemental and generic animal drug applications than in the previous fiscal year. As just one example, we approved a breakthrough drug for chemical sterilization of male puppies that will help control the growing dog population. And we made significant progress in the development of methods to detect illegal residues of the harmful drugs chloramphenicol and nitrofurans in imported seafood.

We continued to work closely with our international regulatory partners, particularly within the Veterinary International Conference on Harmonization (VICH) to harmonize safety and efficacy requirements to support drug approvals. We also worked within the Codex Committee on Residues of Veterinary Drugs in Food (CCRVDRF) to harmonize residue tolerances among more than 150 countries. We worked within other international fora, both bilaterally and multilaterally, to further our public health goals and our strategic plan goals, and to support U.S. Government trade agencies such as the Office of the U.S. Trade Representative.

We present more details on these and many other activities in this annual report. The following pages set out the challenges we face, the achievements accomplished during the past year, and our plans for the future. Where we reached our performance goals for FY 2003, we so indicate. Where we fell short of the goals, we indicate this also. We believe we best serve the public by reporting our shortcomings along with our accomplishments.

The achievements we report resulted from the hard work of a competent and dedicated staff. This report also documents continued expansion of collaborative activities with many of our stakeholders. These arrangements provide mutual benefit and allow us to fulfill our role in protecting the public health more effectively and efficiently. We are grateful for the support of our stakeholders as we work together for the public good.

With the passage of the Animal Drug User Fee Act, Congress passed the fourth major law for animal drugs during the past 15 years. We will work diligently during Fiscal Year 2004 to implement the latest law, just as we have worked hard to turn Congressional directives into results relating to generic drugs, extralabel use and drug availability. Above all, we value the trust the public bestows on us, and we will continue to earn that trust by upholding these and other laws for which we have responsibility.

A Message From the Deputy Director...

Internal Growth To Support External Benefit

Dr. Linda Tollefson, D.V.M., MPH

I have the privilege of following Dr. Sundlof's summary of our substantive FY 2003 achievements with a report on developments in the organization that is behind the accomplishments.

Our "Back to Basics" strategic plan commits us to take actions that enable us to accomplish our mission of protecting public and animal health through the efficient use of resources. During the past year, we took several major steps toward enhancing productivity through results-oriented initiatives. These include activity-based costing, project management and other measures intended to help us target limited resources for maximum public health benefit. We believe that these efforts will result in greater consumer safety, healthier animals and increased satisfaction on the part of our stakeholders. We describe these and related initiatives in detail in this report.

CVM's Senior Management Team* collaborates on day-to-day management and policy decisions facing the Center, as well as long-range planning, budgeting and policy development. In making its decisions, the team considers scientific, economic, international, and social issues and their impact on the Center. A project manager documents action items and decisions to assure that these actions and decisions are implemented.

The Senior Management Team members work to make CVM a high performance organization, modeling the values and behaviors of the organization, with an emphasis on continuous learning and 360 degree feedback to improve performance and behavior. In its quest for continued higher performance in CVM, the team works with the other members of the Center to develop the CVM strategic plan and prioritize important projects to better use resources to meet short and long term goals.

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*CVM's Senior Management Team members are as follows:

Dr. Stephen F. Sundlof, Director, Center for Veterinary Medicine
Dr. Linda Tollefson, Deputy Director, Center for Veterinary Medicine
Dr. Andrew J. Beaulieu, Associate Director for Animal Health Policy & Regulations
Ms. Catherine Beck, Associate Director for Executive Programs and Acting Associate Director for Policy and Regulations
Dr. David Grau, Senior Management Consultant
Dr. William Flynn, Deputy Associate Director for Policy and Regulations
Dr. Daniel G. McChesney, Director, Office of Surveillance and Compliance
Mr. Don Peterson, Director, Office of Management
Mr. David Wardrop, Director, Office of Management (replacing Mr. Peterson on December 8, 2003)
Dr. Steven D. Vaughn, Director, Office of New Animal Drug Evaluation
Dr. Linda Youngman, Director, Office of Research

We made some organizational changes that will facilitate implementation of the management initiatives. Building on the establishment of an Office of Executive Programs in FY 2002, we formalized a Project Management Staff to guide the application of the project management concept for improved organizational performance. And we established an Executive Secretariat to improve the quality and timeliness of our responses to inquiries from our stakeholders. We also reorganized the Office of Management, to accommodate FDA's consolidation of administrative services and to organize more efficiently around like functions.

Appointments of individuals to serve in key positions are essential to the success of any organization; we made several such selections during the year. These include the choice of Bill Flynn, D.V.M., M.S., as Deputy Associate Director for Policy and Regulations; Steve Vaughn, D.V.M., as Director, Office of New Animal Drug Evaluation; Linda Youngman, M.S., Ph.D., and Marlene Wekell, Ph.D., as Director and Deputy Director, respectively, of the Office of Research; Dan McChesney, Ph.D., as Director, Office of Surveillance and Compliance; Bernadette Dunham, D.V.M., Ph.D., as Deputy Director, Office of New Animal Drug Evaluation; and Al Montgomery, D.V.M., as our first Counterterrorism Coordinator.

The accomplishments of an organization are often reflected in the public recognition of its people. CVM and its people were recognized with a number of awards during the year. Dr. Andy Beaulieu received the 2003 Meritorious Presidential Rank Award for scientific and policy leadership during his 30 years with CVM. Several CVM staff members received the HHS Secretary's Award for Distinguished Service for the innovative program – organized in collaboration with the government of Mexico – to monitor resistance in pathogens that could contaminate food imported into the United States. Our Staff College was recognized as having the best practice government-wide for its Competency Model and Learning Management System. We have included a complete list of FY 2003 awards in Appendix A.

The professional productivity of our scientists is evidenced by the large number of articles they published during the year. We have included a complete list in Appendix B.

It's been a busy, productive year – made possible by our staff of motivated, talented people. Their contributions cause our Senior Management Team to be optimistic about the challenges of FY 2004 and beyond. And there will be plenty of challenges – for example, hiring a number of scientists as reviewers and otherwise implementing the requirements of the Animal Drug User Fee Act. We look forward to working with others in the FDA and our stakeholders as we face the tasks ahead of us.

ABOUT
The Center for Veterinary Medicine

Our Mission and Guiding Principles

OUR MISSION...

The Center for Veterinary Medicine is a consumer protection organization. We foster public and animal health by approving safe and effective products for animals and by enforcing other applicable provisions of the Federal Food, Drug and Cosmetic Act and other authorities.

OUR GUIDING PRINCIPLES...

We are committed to:

Health Protection. We honor our role in protecting the health of people and animals, and value the principles and spirit of the supporting laws and regulations.

Integrity. We conduct ourselves with honesty and integrity, recognizing that upholding the public trust requires the highest standards of moral and ethical conduct.

Quality. We achieve excellence through the ongoing development of our competencies and continuous quality improvement in all our processes. In particular, we recognize the value and importance of science and law in reaching quality and timely regulatory decisions.

Teamwork. Everyone's contribution is important. Working together, we place the mission of the Center first and align our contributions, whether individual or in teams, toward that end. We conduct ourselves in accordance with the principles of consultative and participative decision-making.

Communication. We communicate information, ideas, decisions, and provide feedback, internally and external to the organization, in a candid, timely, constructive, and clear manner.

Equity. We treat our customers and each other with fairness, courtesy, respect and compassion while fostering an atmosphere of mutual trust.

Diversity. We promote workforce diversity to strengthen and enrich the Center.

Innovation. We apply new concepts, ideas, and creative approaches to improve current operations and to meet the challenges of the future.

Safety and Health. We seek to ensure a safe and healthful workplace.

Quality of Worklife. We create and use programs that enhance our quality of worklife to improve our ability to carry out the mission of the organization.

Our Strategic Plan

CVM's strategic plan reflects the principles set forth in the President's Management Agenda, the "one HHS" initiative of the Secretary of Health and Human Services, and the Food and Drug Administration's Strategic Action Plan.

Our plan, "CVM's Back to Basics Approach for Carrying Out Our Public and Animal Health Mission," commits us to focus on our core functions of:

- Animal drug review (premarket activities)
- Compliance-related actions
- Post-approval monitoring
- Animal feed safety

To help us focus on the basics, our plan establishes the following goals. We will:

- Set priorities (reviewed annually) and say "no" to lower priority items.
- Improve, and bring discipline to and through, our business practices.
- Support and use good science in establishing solid regulatory policy.
- Improve the capacity of the organization to meet current and future demands on the Center.
- Develop revenue enhancing programs for core services.

Our Organization and Responsibilities

We carry out our mission through the efforts of people who are organized into five offices: the Office of the Director; the Office of New Animal Drug Evaluation; the Office of Surveillance and Compliance; the Office of Research; and the Office of Management. All of our offices are located in Rockville, Maryland, except the Office of Research, whose facilities are located in Laurel, Maryland.

OFFICE OF THE DIRECTOR (OD)

The Office of the Director directs overall Center activities, coordinates and establishes Centerwide policy, and provides guidance for the implementation of the Center's "Back to Basics" strategic plan. The Center Director serves as CVM's representative and spokesperson concerning our activities, interacting with the general public, industry, the media, other government agencies, and national and international organizations.

The Director approves animal drug applications and exercises other statutory authority that has been delegated to him. Other functions are performed through a Deputy Director and associate directors for executive programs, policy and regulations, and animal health policy and operations. The office conducts communication and education programs, provides project management support for the Center, offers the services of the CVM Ombudsman, manages a program to promote drugs for minor uses and minor species, manages the Veterinary Medicine Advisory Committee, and coordinates international activities in the Center.

OFFICE OF NEW ANIMAL DRUG EVALUATION (ONADE)

ONADE's mission is to protect the public health by ensuring the availability of an adequate number of safe and effective animal drugs to meet the therapeutic and production needs of animals. ONADE administers the core function of drug review – it directs the approval process for animal drugs. FDA must review an animal drug for safety, effectiveness and quality before the drug can be legally marketed in interstate commerce. CVM approves drugs intended to benefit the health and productivity of food animals, and the health of companion animals.

Drug sponsors must submit clinical tests to establish drug safety and effectiveness. Sponsors of drugs intended for food animals must also prove that food products derived from treated animals do not contain unsafe drug residues, and that the food products are acceptable with respect to microbial safety. The sponsors must develop analytical methods to detect and measure drug residues in edible animal products. The Federal Food, Drug and Cosmetic Act provides for approval of both pioneer and generic animal drugs, and for FDA-granted authority to use investigational animal drugs. CVM classifies the animal drugs it approves, for distribution and use purposes, as over-the-counter, prescription, or veterinary feed directive.

OFFICE OF SURVEILLANCE AND COMPLIANCE (OS&C)

This office has primary responsibility for three of CVM's core functions: compliance-related actions, post-approval monitoring and animal feed safety. OS&C monitors the safety and effectiveness of approved drugs after they enter the market. This includes surveillance for development of antibiotic resistance that could compromise human and animal therapy, and for adverse reactions in treated animals. Working with the U.S. Department of Agriculture and state agencies, OS&C monitors the occurrence of unsafe drug residues in meat and poultry products, and guides efforts to protect consumers through educational and enforcement activities related to drug residues. The office coordinates enforcement actions against unapproved drugs that are on the market and that threaten public and animal health, and we utilize epidemiological skills to protect public and animal health.

OS&C conducts surveillance and compliance programs to protect animal feed from contamination by toxic materials such as mycotoxins, pesticides, heavy metals and industrial chemicals. The office administers the feed mill licensing program, approves feed additives and coordinates biennial inspections of feed manufacturers. OS&C coordinates the Center's counterterrorism efforts. The office's Bioresearch Monitoring staff oversees inspections of both nonclinical (laboratory) and clinical studies, to provide assurance of

the integrity of data submitted in support of animal drug applications. OS&C also coordinates the Center's administrative actions involving approved drugs, such as actions to withdraw drug approvals.

OFFICE OF RESEARCH (OR)

The Office of Research conducts applied research in support of regulatory decision-making related to each of CVM's core functions. OR operates from a state-of-the-art research complex containing offices, laboratories, animal buildings and pastures.

In support of the drug review function, OR conducts studies in animal drug safety and efficacy, antimicrobial resistance mechanisms, metabolism, standardization of test methods, and pharmcokinetics/pharmacodynamics. The goal of these efforts is to provide a science base for guideline development. OR supports the compliance program of the Center through the development of analytical methods and evaluation of screening tests for detection of drug residues in imported and domestic food products. The office is responsible for the post-approval monitoring of retail meats for drug resistant foodborne pathogens under the National Antimicrobial Resistance Monitoring System, and molecular typing of those pathogens as part of the national PulseNet program. OR conducts research to understand the microbiology of animal feeds, and the dissemination of resistant organisms via livestock feeds. The office is also developing methods to detect material, prohibited by the BSE feed regulation, that could compromise animal feed safety.

OR prepares a detailed annual report; for a copy, write to Center for Veterinary Medicine, Office of Research, 8401 Muirkirk Road, Laurel, MD 20708, attention Denise Strekal.

OFFICE OF MANAGEMENT (OM)

The Office of Management has primary responsibility in four program areas: budget and finance; management services; planning, procurement and facilities; and information resources management. OM plans, develops and implements Center management policies.

OM provides leadership and direction for the planning, development and execution of the CVM budget. This includes analysis, formulation and presentation of budget issues. The office serves as the focal point for management and administrative interaction with other FDA offices to assist in the efficient delivery of administrative services to the Center's employees. OM provides liaison services for activities that include space and workplace planning, facilities management and operations, and workplace safety. OM represents management on Center issues that involve the National Treasury Employees' Union and

the implementation of the FDA/NTEU Collective Bargaining Agreement. OM also serves as liaison with the Agency's Office of Information Technology Shared Services to ensure efficient and effective IT development management, and website development. OM also manages the financial activities associated with the Center's user fee program.

OM directs the development and implementation of the competency-based Staff College and accompanying curriculum. OM sets the Center's expectations with regard to required competencies through the Staff College Knowledge Center.

Our Sphere of Influence

CVM's efforts to help assure that domestic and imported animal food products are safe affect millions of consumers. American consumers eat – on the average – 115 pounds of meat, 67 pounds of poultry, 15 pounds of fish, 595 pounds of dairy products and 30 pounds of eggs each year. Besides protecting the health of consumers, CVM works to safeguard the health of food-producing animals in the United States: 97 million cattle, 59 million pigs, 8.8 billion chickens, 272 million turkeys and 7 million sheep. The U.S. produces about $100 billion worth of livestock and livestock products each year.

CVM approvals are now in effect for 727 drugs for use in food-producing animals. We have approved many of these drugs for administration through animal feed. CVM has licensed approximately 1,200 firms that manufacture medicated feeds, under a law passed by Congress several years ago. And we have published regulations that authorize use of more than 50 food (feed) additives.

More than 600 currently approved drugs are available to maintain the health of our nation's growing pet population, which now numbers 60 million dogs and 70 million cats, in addition to 5.5 million horses.

Altogether, we regulate activities of some 6,600 feed manufacturers and related firms, more than 150 animal drug manufacturers and other sponsors of animal drug applications, many thousands of livestock and poultry producers, and firms in a variety of specialized industry groups. The drugs we approve help the nation's 69,000 veterinarians accomplish their task of maintaining the health of the nation's animals.

Our Stakeholders and Partners

A key goal in our strategic action plan is better information to empower consumers.

From the FDA Strategic Action Plan

We communicate information, ideas, decisions, and provide feedback, internally and external to the organization, in a candid, timely, constructive and clear manner. We treat our customers and each other with fairness, courtesy, respect and compassion while fostering an atmosphere of mutual trust.

From CVM's Guiding Principles

OUR STAKEHOLDERS

Many organizations, and millions of individuals, have a stake in the outcome of CVM's work. They include consumers, animal owners, veterinarians, and firms in the regulated industries – companies that market the drugs, feeds and other products that we regulate. Our stakeholders also include trade associations; consumer organizations; state, federal and foreign regulatory agencies; international standard-setting organizations; and others.

We use a variety of methods to keep stakeholders informed, and to seek their advice and opinions about our policies and programs. These methods include public meetings; requests for comment on proposed regulations and guidance documents; the CVM website; and a variety of informal means such as letters, phone calls and e-mails.

OUR PARTNERS

Our success in promoting and protecting the public health depends not only on the active involvement of our stakeholders, but also on the formation of partnerships with those whose goals align with ours. Government downsizing, a changing economy, technical advances and other factors have prompted FDA and CVM increasingly to seek out partnering opportunities to maximize the use of our resources.

It makes good business sense to engage in relationships where collaborators work synergistically to achieve goals that neither party could achieve on its own.

From the FDA Veterinarian July/August 2002

The concept of collaboration and partnership is generally known as leveraging, and we are working to make it one of the foundations of our day-to-day operations. Our partners include:

- Other federal agencies with whom we share related regulatory responsibilities, such as the U.S. Department of Agriculture's Food Safety and Inspection Service (e.g., surveillance for animal drug residue and antimicrobial resistance) and Animal and Plant Health Inspection Service (e.g., BSE), and the U.S. Environmental Protection Agency (e.g., pesticides). For example, the Interagency Residue Control Group, with members from FDA, USDA and EPA, coordinates information on residues of animal drugs, pesticides and environmental contaminants in animal food products.

- Centers for Disease Control and Prevention, National Center for Infectious Diseases (e.g., surveillance for antimicrobial resistance).

- USDA's Agricultural Research Service and Cooperative State Research, Education and Extension Service.

- State agencies, who partner with us to conduct inspections for compliance with the BSE feed regulation and other feed inspections, and to carry out other regulatory and surveillance functions.

- Veterinarians, who share with us numerous public and animal health goals such as testing and surveillance of animal drugs for safety and effectiveness, avoiding drug residues in food products, minimizing the development of antimicrobial resistance through prudent drug use practices, and educating producers and related industries as to their public health responsibilities.

- Foreign regulatory agencies who have responsibility and authority for controlling animal drugs and feeds in their countries; we leverage such international work through our participation and leadership in VICH, CCRVDF and other multilateral organizations.

We partner through cooperative agreements, cost-sharing contracts, cooperative research and development agreements (CRADAs), interagency agreements (IAGs), cosponsorship agreements and informal agreements. We hold joint workshops, cosponsor training sessions, work with scientists on mission-related research, and cooperate with others in many ways.

We include a number of examples of current partnership arrangements in this annual report.

FISCAL YEAR 2003
Challenges and Accomplishments

Introduction

Although we are organized into five separate offices, our Guiding Principles call for the staff of the Center for Veterinary Medicine to work together, placing the mission of the Center first. In fact, most of our significant accomplishments involve the efforts of people from two or more offices, through teams, committees and day-to-day coordination.

Thus, we organize our presentation of FY 2003 accomplishments not according to office structure, but according to crosscutting topics. These topics reflect issues of significant public interest. We introduce each of these areas of concern with a statement of the challenges that we face as we attempt to meet our "Back to Basics" goals.

To help us achieve our strategic goals in FY 2003, we established targets for the year – a number of specific *performance goals*. Individual offices have primary responsibility for achieving some of the performance goals, but two or more offices share many of the performance goals because the goals relate to activities that require collaborative efforts.

We highlight our performance goals in the appropriate sections and mark them with a ✓ for goal accomplished, and an ✗ for goal not accomplished.

We have worked during the past year to focus on the priorities stated in FDA's Strategic Action Plan: efficient risk management, empowering consumers, improving patient and consumer safety, protecting America from terrorism, and more effective regulation through a stronger workforce. We have indicated below some examples of how our FY 2003 accomplishments responded to the agency's priorities.

Increasing the Availability of Safe and Effective Animal Drugs

THE CHALLENGE

Statutory standards and the needs of our stakeholders – and especially the needs of the billions of animals whose health we seek to protect – require that we make the right preapproval decisions, and do so efficiently and expeditiously.

CVM's challenge is to protect the public health by assuring that there is an adequate supply of animal drugs to meet therapeutic and production needs.

To accomplish this challenge, CVM must consider the public health, including human, animal and environmental health; employ applicable science to make high quality decisions; understand the economics of the animal health industry; and conduct quality reviews efficiently to help keep unsafe and ineffective drugs off of the market.

FY 2003 Performance Goals

Goal Achieved ✓ **Complete review and action on 90 percent of all animal drug applications and supplements received in FY 2003 within 275 days, and complete review and action on 90 percent of all investigational animal drug submissions received in FY 2003 within 325 days.**

Goal Achieved ✓ **Reduce pending overdue animal drug submissions by 15 percent.**

FY 2003 ACCOMPLISHMENTS

We responded to the challenges in a number of ways, as described below. In general, these actions were directed toward achieving the FDA strategic plan priority of increased productivity in new drug development, and the strategic plan's objective of providing a timely, high quality and cost-effective process for review of pre-market submissions.

PRODUCTIVITY ACCOMPLISHMENTS IN THE ANIMAL DRUG EVALUATION PROCESS

We improved productivity in the pre-market review of animal drugs without the addition of new resources. The Office of New Animal Drug Evaluation approved 44 percent more original, supplemental and generic animal drug applications during FY 2003 than in the previous fiscal year:

Application	FY 2002	FY 2003
Animal Drug Applications	**16**	**18**
Supplemental Animal Drug Applications	**312**	**450**
Abbreviated Animal Drug Applications (generic)	**14**	**26**
Supplemental Abbreviated Animal Drug Applications	**67**	**95**
Total Applications	**409**	**589**

During the year, we completed review of 95 percent of all animal drug applications within 275 days, and 99 percent of all investigational animal drug submissions within 325 days. This exceeded our goals of completing 90 percent of the reviews within the indicated time frames.

In addition, we had a performance goal to reduce the number of pending overdue submissions by 15 percent. CVM exceeded the goal by reducing the number of overdue submissions by 38 percent.

SIGNIFICANT NEW APPROVALS

We considered 63 of the FY 2003 approvals to be significant. These significant approvals included:

New chemical entities. These are chemical substances that we have not previously approved for use in animals. We approved original animal drug applications for four new chemical entities during the year:

Neutersol Injectable Solution, for chemical castration of young male dogs. This product is the first FDA-approved alternative to surgical castration of young dogs. The drug may prove to be a valuable aid in efforts to control the growing dog population; animal shelters are likely to have a veterinarian administer the product to dogs on site rather than relying on owners to take adopted dogs to a veterinarians for surgical sterilization.

Zubrin Rapidly-Disintegrating Tablets
Metacam Oral Suspension
Both products are nonsteroidal anti-inflammatory drugs for treatment of osteoarthritis in dogs.

CelerinTM, a microencapsulated product for increased weight gain and improved feed efficiency in steers and heifers fed in confinement.

Supplemental applications for new species. These included approvals for Neo-Sol in turkeys; Optaflexx (the first non-hormonal, non-antimicrobial growth promoter) for increased rate of weight gain and improved feed efficiency in cattle fed in confinement; Matrix, for synchronization of estrus in gilts; and several drug products for treatment of osteoarthritis, post-operative pain, dermatitis and pruritus in dogs.

New combinations. These approvals included Zimectrin Gold and Equimax, and Quest Plus, for anthelmintic use in horses; and an approval for concurrent uses of Program and Capstar for flea management in dogs.

New Strength/Concentration. We approved new strengths of Naxcel XT Sterile Suspension and Tetradure 300 for treatment of Bovine Respiratory Disease.

ACTIONS TO INCREASE THE EFFICIENCY AND REDUCE THE COST OF THE REVIEW PROCESS

The Office of New Animal Drug Evaluation achieved significant progress on a number of strategic initiatives designed to improve the effectiveness of the pre-market review process, including:

- Establishing a working group, in collaboration with the Animal Health Institute, whose goal is to improve the quality of data submissions so that the number of review cycles can be reduced.

- Publishing guidance documents in connection with the FDA's Drug Quality Initiative, as part of the agency's Strategic Action Plan. This included guidance to sponsors for electronic records, dispute resolution, protocols, sterile drug products, and a framework for innovative pharmaceutical manufacturing and quality assurance.

- Completing about 90 percent of the scope of the Veterinary Establishment and Production Formulation sections of our Submission Tracking and Reporting System (STARS). The benefits of these sections will include, for example, expediting the search for formulation information, and associating manufacturing facilities with approved applications.

- Developing and implementing a robust project management system for work assignments that are not included in STARS, and developing standardized procedures for final actions that have STARS controls.

- Developing strategies for planning work by predicting incoming submissions.

- Developing guidance on drug application regulatory and quality assurance requirements, including "Refuse to File" and "Refuse to Review" policies.

- Developing guidance and other proactive strategies designed to better educate sponsors during the pre-submission stage

Working with industry and international regulatory partners within VICH to harmonize preapproval guidance to further assure the submission of adequate studies, and to support the efficient use of industry resources. This included progress in completing guidance documents on toxicity testing and microbial safety.

RESEARCH TO SUPPORT ANIMAL DRUG APPROVALS

Drug sponsors are responsible for submitting studies to prove that their drugs are safe and effective. Complementary work – accomplished by CVM, its contractors and collaborators – may alter the type and number of studies required for approvals, thus improving the efficiency of the drug approval process. During FY 2003, CVM conducted or sponsored research with aquatic and terrestrial animals to develop models for conducting safety and effectiveness studies. Studies with aquatic species are described in the next section. Other work included studies involving drug metabolism in swine and induction of rumen function in calves.

Immunopharmacology studies identify factors affecting drug safety and efficacy in target animals, and human food safety. One such study involved the kinetics of a prostaglandin in cattle. Pharmacokinetics/pharmacodynamics help assess the effects of drugs in diseased animals, an important contribution because most data submitted to CVM are generated in healthy animals. An example is a study involving the use of enrofloxacin in both healthy and diseased cattle.

ASSISTANCE IN THE PASSAGE OF USER FEE LEGISLATION

We provided leadership and technical support for legislative efforts that resulted in the passage of the Animal Drug User Fee Act of 2003. Many of our efforts during FY 2003 to improve efficiency, cost-effectiveness and accountability in the drug approval process were undertaken to facilitate implementation of ADUFA.

Increasing Drug Availability for Aquaculture and Other Minor Uses/ Minor Species

THE CHALLENGE

Because the potential sales volume is low, animal drug manufacturers lack economic incentive to seek animal drug approvals for minor uses (diseases that are rare) or minor species (any animal species other than cattle, horses, pigs, chickens, turkeys, dogs or cats). The problem is particularly acute in aquaculture.

The harvest of wild-caught fish is declining rapidly. As a result, aquaculture is becoming an increasingly important source of fish for human consumption. The U.S. aquaculture industry is expanding – approaching $1 billion in annual sales – and the need for therapeutic and production drugs is growing as well. For example, aquaculture producers and veterinarians need drugs to treat fungal infections in trout, several bacterial and mycobacterial infections in fish, internal parasitic infections in fish, and diseases in shrimp and abalone.

FY 2003 ACCOMPLISHMENTS

We continued our efforts to increase the availability and diversity of drugs for use in aquaculture, including the following actions.

RESEARCH TO SUPPORT DRUG APPROVALS

Office of Research scientists conducted research on several aquatic animal diseases for which no drugs are currently approved. These included a study on the effectiveness of formalin for treating fungal infections, a serious disease of rainbow trout and other fish species, particularly those raised in aquaculture facilities. We also made progress in the development of a model internal parasite infection in largemouth bass for studying the effectiveness of antiparasitic drugs.

We continued studies to determine whether it is possible to group fish species (based on criteria such as salt vs. freshwater, warm vs. cold water species) so that drugs can be approved for groups of fish species after being tested in one representative species. For example, we completed a study of the metabolism and depletion of albendazole, an anthelmintic drug, in rainbow trout, tilapia and Atlantic salmon. The results suggest that there is a potential for species grouping of cold and warm water fish for drugs of this type. These studies are a good example of how we are working to achieve the FDA strategic plan priority of greater productivity in new drug development.

ACTIONS TO ENHANCE OUR AUTHORITY TO APPROVE DRUGS FOR AQUACULTURE AND OTHER USES

The specific challenge to increase the availability and diversity of drugs for use in aquaculture is part of the larger challenge of meeting the need for animal drug approvals for minor uses and minor species. Some of these needs include drugs that can be administered in feed to control parasitic infections and other diseases in farm-raised pheasants; a more concentrated formulation of a drug used in darts to tranquilize zoo animals so veterinarians do not have to dart animals multiple times; an effective drug for treatment of liver flukes in elk; and products for manipulation of reproduction in sheep, goats and other small ruminants to allow U.S. producers to compete with foreign producers who are allowed to use such products.

This situation parallels the need for "orphan drugs" in human medicine, a need that Congress has responded to through legislation. Recognizing the similar problem in animal medicine, Congress included a provision in the Animal Drug Availability Act of 1996 that required the Secretary of Health and Human Services to develop proposals to facilitate the approval of animal drugs intended for minor uses and minor species. The FDA published the proposals in 1998. During FY 2003 we provided technical assistance and briefings related to legislative proposals concerning minor uses and minor species. Very similar bills have been approved by a committee in the Senate and will be considered by the House of Representatives during its 2004 session – major milestones in the passage of this much-needed legislation.

Reducing Risk From Antimicrobial Resistance

THE CHALLENGE

Scientific evidence demonstrates that the use of antimicrobial drugs in food-producing animals can result in the development of resistant bacteria. The resistant bacteria can then be transferred to humans through food. These bacteria may not be pathogenic to the animals, but may cause illness in humans. Two examples are *Salmonella* and *Campylobacter*, which can cause severe, even fatal, foodborne illness in humans.

If the resistant bacteria cause an illness in a consumer who needs drug treatment, that treatment may be compromised because the drugs of choice may be ineffective. Resistance to the antimicrobial drugs needed to treat human illness is a serious public health threat, whether the resistance develops from inappropriate use of antibiotics in people, use of antimicrobials in food-producing animals, or other sources.

FY 2003 Performance Goals

Goal Achieved

✓ **Publish final guidance for industry (GFI # 152) that outlines the strategy for assuring the safety of antimicrobial animal drugs with regard to their microbiological effects on bacteria of human health concern.**

Goal Achieved

✓ **Participate in the cooperative agreement with four sites in Mexico to determine prevalence of *Salmonella, E. coli,* and *Campylobacter* in symptomatic and asymptomatic humans.**

Goal Achieved

✓ **Continue to enhance the National Antimicrobial Resistance Monitoring System (NARMS) on an international basis through support of an advanced WHO training course in Mexico and a beginning course in Central Asia.**

FY 2003 ACCOMPLISHMENTS

In cooperation with other agencies, CVM has undertaken proactive risk assessment and risk management, surveillance, research and education programs to reduce the risk to human health that can result from the use of antimicrobials in food-producing animals. We reached significant milestones in this effort during the past year, as described in the following paragraphs. These efforts respond to the FDA strategic plan priority of reducing foodborne illness, a major public health threat.

Goal Achieved

✓ Continue to support the WHO global *Salmonella* surveillance program with funding and trainers. *(ongoing)*

Goal Achieved

✓ Expand the human arm of NARMS to include all 50 states.

Goal Achieved

✓ Hold a hearing on our proposal to remove fluoroquinolone from use in poultry.

Goal Achieved

✓ Continue to review penicillin and tetracycline approvals for microbial food safety concerns, to be supplemented by external research literature review and analysis.

NOT Achieved

✗ Complete the data collection from the field and laboratory studies related to Virginiamycin. Complete the draft Virginiamycin risk assessment.

The risk assessment could not be completed until the data had been generated from the extramural research, and this was not done in time to finish the report during the fiscal year.

Goal Achieved

✓ Conduct research to identify food animal species causing human drug resistance.

ASSESSING RISK AND TAKING APPROPRIATE RISK MANAGEMENT ACTION

Guidance for assessing risk. Following publication of a draft for comment and a public meeting, the Center has issued guidance that for the first time outlines a comprehensive evidence-based approach to preventing antimicrobial resistance resulting from the use of antimicrobial drugs in animals. The guidance, designated Guidance for Industry (GFI) #152,[1] provides a scientific risk-based process for assessing the likelihood that an antimicrobial drug used to treat an animal may cause an antimicrobial resistance problem in humans. The guidance is intended to avoid the problem before it can develop, since it applies in the drug approval process. However, its principles will also be applied in determining whether to remove approved products from the market.

Revocation of obsolete regulations. Consistent with the development of GFI #152, the FDA in August 2003 proposed removal of regulations that required drug sponsors to submit safety and effectiveness data related to subtherapeutic feed uses of certain antibiotics, nitrofuran and sulfonamide drugs. This includes 21 C.F.R. § 558.15, published in 1973 to provide a framework for the now obsolete requirements. The August publication also announced the effective conditions of use for certain drug products and use combinations listed in the regulations that are to be revoked.

Penicillin and tetracycline review. As a follow-up to long-standing proposals to withdraw approvals of subtherapeutic feed uses of penicillin and tetracycline, CVM during FY 2003 completed microbiological food safety reviews for five out of seven approved penicillin and penicillin combination products, and the first of several tetracycline products. These reviews are using GFI #152 to develop an overall estimate of the risk to humans from the continued use of these drugs.

Proposed withdrawal of fluoroquinolone approval. In 2000, CVM took the first steps toward withdrawing the approval for the use of the fluoroquinolone enrofloxacin in poultry. We based this initiative on several findings. First, the use of fluoroquinolones causes the development of fluoroquinolone-resistant *Campylobacter* in poultry. Second, the resistant *Campylobacter* is transferred to humans and is a significant cause of the development of resistant *Campylobacter* infections in humans. Third, resistant *Campylobacter* infections are a human health hazard. We accompanied our proposal to withdraw the enrofloxacin approval with a risk assessment focused on the resistance-developing properties of fluoroquinolones used in poultry.

[1] Guidance for Industry (GFI) #152, "Evaluating the Safety of Antimicrobial New Animal Drugs With Regard to Their Microbiological Effects on Bacteria of Human Health Concern."

Enrofloxacin is comparable to ciprofloxacin, a fluoroquinolone used widely in human medicine. Fluoroquinolones are one of the most valuable antimicrobial drug classes available to treat human infections. They are effective against a wide range of human diseases that have major public health impacts in the United States. Therefore the public would benefit if we remove from the market any drug that causes the development of organisms that resist fluoroquinolone treatment in humans.

The law specifies certain procedures that are to be followed before an approved animal drug can be withdrawn from the market. CVM completed one of those processes, a lengthy administrative hearing concerning enrofloxacin, during FY 2003. We provided scientific expertise for the hearing, based on extensive literature reviews and expert testimony.

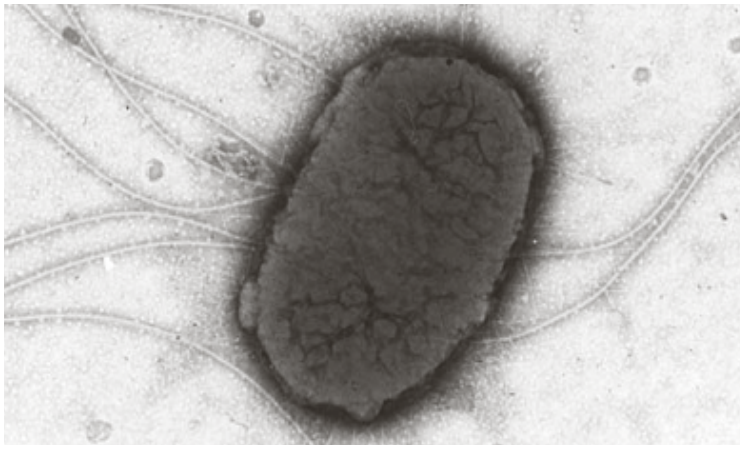
Virginiamycin risk assessment. In accordance with a plan to evaluate risks associated with use of approved antimicrobials, we initiated a risk assessment for Virginiamycin use in animals. We will use information from the risk assessment to determine what risk management measures we should take, if any. The Center continued to develop the risk assessment during FY 2003.

MONITORING FOR THE DEVELOPMENT OF RESISTANCE

Federal/state monitoring program. We collaborate with the U.S. Department of Agriculture (USDA) and the Centers for Disease Control and Prevention (CDC) in the operation of the National Antibiotic Resistance Monitoring System (NARMS). This program tracks changes in susceptibilities to a number of antimicrobial drugs of animal pathogens that can cause disease in humans. NARMS monitors for resistance using three testing sites (or arms): humans (CDC), animal (USDA), and retail meat (FDA/CVM). Data from the program provides timely information to veterinarians and physicians, prolonging the useful lives of approved drugs by promoting prudent use.

During FY 2003, our partners in the human data arm of NARMS expanded to include public health laboratories in all 50 states and local health departments in three major cities. The retail meat arm of NARMS completed plans to expand from eight to ten the number of states included in data collection. Integration of the data from the NARMS segments (human, animal, retail meat) continued, so that we can track changes in susceptibility among isolates from all three arms. In addition, each NARMS testing site now has the expertise of a molecular biologist to facilitate analytical microbiological research associated with the surveillance activities.

During the year, CVM completed collection of data on the prevalence and antimicrobial drug susceptibility of foodborne bacteria in retail meat. We also completed a slaughterhouse survey, which compared bacterial samples from slaughterhouse workers with samples from a human control group. The study's purpose was to assess the extent of transfer of antibiotic resistance to humans from food animals.



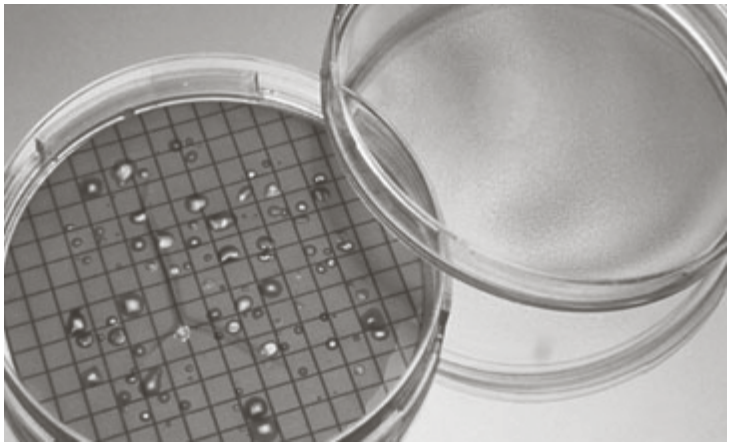
Mexican resistance surveillance. CVM collaborated with the Mexican government to establish a novel surveillance initiative, ResistVet, in January 2002. The surveillance system is designed to identify outbreaks of foodborne illness, especially those that are resistant to more than one drug, in time to take steps to stop the spread of resistant pathogens. The initiative responds to increases in U.S. importation of meat and poultry from Mexico after passage of the North American Free Trade Agreement.

During FY 2003, we completed the determination of the prevalence of *Salmonella* and quinolone-resistant *E. coli* in humans, animals and food products, and continued the same work with regard to *Campylobacter*. Work on the identification and comparison of susceptibility profiles for *Salmonella*, *Campylobacter* and *E. coli* continued during the year. Genetic analysis showed a link between *Salmonella* and *E. coli* strains in humans and retail food. The data quantified resistance levels and identified virulence factors, including those associated with traveler's diarrhea.

The first report from these efforts was published in *Antimicrobial Agents and Chemotherapy* in June 2003. The Secretary of HHS recognized the innovation and achievements in this program with his Award for Distinguished Service in 2003.

RESEARCH TO SUPPORT ANTIMICROBIAL RESISTANCE SURVEILLANCE AND REGULATION

CVM collaborates on – and has initiated a number of – research studies designed to provide greater understanding of antibiotic resistance mechanisms, so that the prevalence of antibiotic-resistant bacteria might be reduced throughout the food production continuum. During FY 2003, CVM made progress in a project to investigate molecular typing tools to help determine the animal origin of foodborne bacterial pathogens. In a study done in collaboration with state veterinary diagnostic laboratories, we determined that cattle and swine are major reservoirs for *Salmonella Newport*. Another study generated data on the impact of tetracycline and fluoroquinolone exposure on the evolution of resistance in the important foodborne pathogen *Campylobacter*. Still another study provided important data on the transfer of resistant *Campylobacter jejuni*.



Other research provided information on the role that livestock feed plays in the introduction of resistant pathogens into the animal production environment. One study provided information on the establishment of *E. coli* in calves through feed. A second study provided information on the prevalence of *Salmonella* and *E. coli*, and the antibiotic susceptibilities of the bacterial isolates.

FY 2003 Performance Goals

Goal Achieved

✓ ***(With the FDA Office of Regulatory Affairs)*** **Conduct targeted BSE inspections of all known renderers and feed mills processing products containing prohibited material.**

Goal Achieved

✓ **Develop web-based, dynamic reports summarizing the most current information concerning the results of inspections involving all firms subject to BSE inspections.**

Goal Achieved

✓ **Continue to develop and provide educational outreach and training to FDA District and State investigators, regulated industry, and the public.**

Controlling Risk from Bovine Spongiform Encephalopathy (BSE)

THE CHALLENGE

BSE, commonly known as "mad cow disease," is a chronic, degenerative, always fatal neurological disease affecting the central nervous system of cattle. BSE belongs to a family of diseases known as transmissible spongiform encephalopathies (TSEs) that include several ruminant and nonruminant animal diseases. Laboratory and epidemiological evidence strongly suggests that people can contract a human TSE, variant Cruetzfeldt-Jakob disease (vCJD), by consuming food from BSE-infected cattle. In the absence of adequate controls, BSE could be spread among the cattle population through feed ingredients derived from infected cattle.

FY 2003 ACCOMPLISHMENTS

Here are some of our achievements during the year just ended:

STRENGTHENING THE BSE FEED REGULATION

FDA acted in 1997 to prevent the establishment and amplification of BSE in the United States through feed, and thereby minimize any risk to animals and humans. We did so by adopting our BSE feed regulation, which prohibits the feeding of mammalian protein (with exceptions) – known as "prohibited material" – to cattle and other ruminants.

Goal Achieved

Validate DNA-based detection methods. Consult with FDA's Office of Regulatory Affairs laboratories to optimize their usage of the DNA-based detection methods as regulatory methods.

NOT Achieved

Develop and validate an Enzyme Linked Immunosorbent Assay (ELISA)-type assay that will permit detection of prohibited material.

While researchers at the Office of Research made significant progress toward this goal, they were slowed in isolating adequate supplies of the target protein that will be used to develop antibodies needed for the ELISA test. The researchers have concluded that they must extract the proteins from rendered material, where the target protein is far less prevalent, so that the ELISA will work properly with processed feed.

During FY 2003, FDA published an advanced notice of proposed rulemaking to solicit information and views on some potential changes to the regulation. We identified measures that could further reduce the already small risk that BSE will become established in the United States. Prohibiting the rendering (processing for animal feed) of the animal parts that are most likely to carry the BSE agent is one example. CVM is reviewing the comments as it considers what changes, if any, to make in the regulation.

ACHIEVING COMPLIANCE WITH THE FEED REGULATION

By the end of FY 2003, we had achieved our goal of inspecting 100 percent of the nation's renderers, protein blenders and feed manufacturers – more than 6,600 firms – for compliance with the regulation. We had also inspected an additional 6,900 firms including ruminant feeders, on-farm mixers, pet food manufacturers, animal feed salvagers and animal feed transporters. We issued seven Warning Letters and instituted 14 recalls for violations of the regulation during the year.

By the end of FY 2003, we had nearly reached our goal of 100 percent compliance with the regulation's requirements; less than 1 percent of the firms known to handle prohibited material had violations serious enough to require official action at their last inspection.

These achievements were possible only because of partnerships with state regulatory agencies, which have conducted the majority of the inspections, and through "piggy-backing" onto existing surveillance, sampling and enforcement programs for efficient enforcement of the regulation. These efficiencies reflected the FDA strategic plan priority of efficient risk management.

We have now made detailed information from the feed rule inspections available on the CVM website, in the newly designed FDA BSE/Ruminant Feed Inspection Database. The website contains a variety of other information related to our BSE activities.

DEVELOPING ANALYTICAL METHODS FOR DETECTING PROHIBITED MATERIAL

The availability of practical, validated methods to detect protein from different animal species could improve the effectiveness and efficiency of the enforcement of the BSE feed regulation. The use of such methods would be consistent with the FDA strategic plan priority of targeting limited resources for maximum protection. Although methods to detect mammalian protein are available, methods are needed to identify protein from individual species so that the presence of prohibited material can be detected.

The Office of Research has validated a DNA-based method for detection of bovine-derived material, and has made the method available for routine use by FDA field offices. OR made progress during FY 2003 in validating a second DNA-based method that will permit identification of proteins from either cattle or swine, and proteins from deer, elk, sheep or goats. Work on an Enzyme Linked Immunosorbent Assay (ELISA)-type assay that will permit detection of prohibited material proceeded far enough in FY 2003 to permit identification of four unique heat-stable proteins in bovine meat and bonemeal. Once purified, the proteins will be used to produce antibodies, an important step in the development of an ELISA assay.

TESTING IMPORTED AND DOMESTIC FEED SAMPLES

CVM has requested the collection and analysis of samples of feed imported from countries known to have BSE, and countries that are at risk for BSE. The purpose is to test for the presence of mammalian protein, which is prohibited in feed material imported from those countries. We have also issued an assignment for domestic sample collection, to test for animal protein as a basis for further investigation.

CONTROL OF CHRONIC WASTING DISEASE (CWD)

CVM issued a guidance document, "Use of Material From Deer and Elk in Animal Feed," in May 2003. The document sets out our recommendations regarding the use in the feed for all animals (ruminants and non-ruminants) of all material from deer and elk that have Chronic Wasting Disease (CWD), or are considered at high risk for CWD. This guidance should help avoid uncertainty about how to handle carcasses during the hunting season.

GUIDANCE AND TRAINING FOR INSPECTORS

We have drafted a BSE Compliance Program Guidance document with the assistance of a wide range of FDA and state officials, and have held two national meetings to introduce the guide. The guidance has two purposes: to provide complete instructions to FDA and state investigators as they conduct domestic BSE inspections, and to assist in evaluating animal feed products imported from BSE and BSE-at-risk countries. CVM also conducted five training sessions on the compliance program for federal and state investigators

Avoiding Unsafe Drug Residues in Human Food

FY 2003 Performance Goals

Modify Compliance Program Guidance Manual 7371.006 Illegal Residues in Meat and Poultry to include residues in domestic seafood. The program's name will be changed to Illegal Residues in Meat, Poultry and Seafood.

The Compliance Program is in the progress of being updated and is almost complete. Competing priorities (Monkeypox and prairie dogs) have delayed completion.

THE CHALLENGE

The FDA strategic plan emphasizes the need for safety oversight to catch up with the rapid growth in the volume of imports of products that are under FDA's jurisdiction. An example is the importation of seafood; aquaculture is increasing in foreign countries, and the U.S. is a major market for products from these operations. Approximately half of the seafood consumed in the U.S. is obtained abroad. Some foreign aquaculture operations use drugs, such as chloramphenicol and nitrofurans, that are not approved for use in the U.S. As a result, imported seafood may contain unsafe drug residues. Similarly, improper use of drugs in domestic animals can result in unsafe residues in meat and milk.

FY 2003 ACCOMPLISHMENTS

The following summarizes our FY 2003 efforts to avoid unsafe residues in seafood, meat and milk.

CONTROLLING UNSAFE DRUG RESIDUE IN IMPORTED SEAFOOD

During the past year we collected information on drugs being used in foreign aquaculture, and assessed the data to identify possible hazardous drug residues in food. We used this information to develop a Center position on chloramphenicol residue in imported shrimp, which was discovered through FDA sampling. We also provided evidence that Southeast Asia was the source of the production of shrimp with chloramphenicol residues being imported into the United States

We are using available data to help prioritize drugs for analytical method development and drug residue monitoring in seafood. For example, we worked on the development of an analytical method that would be capable of screening for multiple classes of drugs in shrimp. The method, which uses generic extraction techniques and mass spectrometry, would greatly increase the number of drugs that could be detected in imported seafood. This responds to the FDA priority of efficient use of limited enforcement resources, especially with respect to imported food products.

The Office of Research developed a validated, sensitive procedure for use by the FDA Northeast Regional Laboratory to detect illegal residues of chloramphenicol in imported shrimp and other seafoods. OR also evaluated a commercial screening test for state regulatory agencies to use for the same purpose, reaching the conclusion that the test is acceptable for regulatory use.

OR is now focused on adapting the shrimp method for other species, including channel catfish. We also developed a confirmatory procedure for the marker residue for chloramine-T, proposed for using in treating bacterial gill disease.

We provided fish tissues with intentionally added drug residues to scientists who are developing methods to detect residues of drugs such as gentian violet and erythromycin. This work will be helpful in preventing unsafe seafood from being imported into the United States, and in the effort to develop import tolerance levels for selected drugs.

ENFORCEMENT TO CONTROL DRUG RESIDUES IN MEAT

CVM's tissue residue program protects consumers from unsafe meat products. Under CVM's direction, FDA investigated 447 tissue residue violations during the year, and issued 65 tissue residue-related warning letters. Enforcement actions resulted in consent decrees of injunction against several dairy farms that had marketed cows and calves whose edible tissues contained illegal residues of penicillin, sulfonamides and other drugs. Six injunction actions and one criminal prosecution were initiated during the year.

We also provided training on drug residues in cooperation with USDA's Food Safety and Inspection Service, and collaborated with FSIS in the production of a video on residues in meat and poultry. We also initiated an outreach program to educate consumers, veterinarians and students on how to prevent drug residues in dairy animals.

DEVELOPMENT OF SCREENING TESTS FOR DRUG RESIDUES IN MILK

Our scientists played a key role in the development of two new screening tests for residue of beta-lactam drugs such as penicillin in milk. The National Conference on Interstate Milk Shipments approved these tests during the past year.

RESEARCH TO SUPPORT REGULATORY EFFORTS TO PREVENT UNSAFE RESIDUES IN MEAT AND MILK

Research conducted or funded by CVM supports the development and use of analytical methods for detecting drug residue in meat and milk. During FY 2003, USDA's Food Safety and Inspection Service implemented a procedure developed at the CVM Office of Research for the confirmation of aminoglycoside residues in edible products. Identification of residues of streptomycin, gentamicin and other drugs using this procedure has permitted regulatory enforcement action where such action was not possible in the past.

We also conducted a pilot study to investigate residue resulting from extralabel uses of florfenicol in lactating dairy cattle, and to assess analytical methods for measuring the parent compound in raw bovine milk as well as plasma. Another study, which determined renal clearance of gentamicin in steers, could result in a rapid test for use in decisions to slaughter antibiotic-treated steers or dairy cows.

CHANGE IN REGULATION OF CARCINOGENIC DRUGS

In December 2002, we proposed to revise the regulation that defines "no residue" for purpose of approval of carcinogenic animal drugs under the "DES proviso" to the Federal Food, Drug and Cosmetic Act's Delaney Clause. The current regulation provides that CVM may accept a finding that residue is present, but below the "no significant risk" level, as satisfying the statutory requirement of "no residue." The proposed revision would eliminate this definition of "no residue," replacing it with a standard that a substance can be approved if no residue can be detected by the approved regulatory method. However, the Center would continue to use the "no significant risk" level, determined through appropriate toxicological testing, as a benchmark for assessing the acceptability of a regulatory method.

Assuring Feed Safety: The Animal Feed Safety System (AFSS)

THE CHALLENGE

Threats to the safety of the nation's animal feed supply could come from several sources, including bioterrorism. Contaminants in animal feed can harm the animals, as well as humans who consume animal products – and adversely affect the nation's food and feed supplies.

The United States does not have a comprehensive system designed to protect the nation's animal feed supply. FDA's regulatory effort has targeted particular health issues, such as BSE and potentially unsafe drug residues in edible animal products (addressed by medicated feed Good Manufacturing Practices). We have also implemented measures directed toward particular aspects of feed or feed production, including evaluating food (feed) additive petitions and conducting surveillance and compliance programs regarding feed contaminants. Working with state regulatory authorities, we have responded on a case by case basis to incidents involving feed contamination with such substances as PCBs, dioxins, *Salmonella* and mycotoxins, including aflatoxin.

The Association of American Feed Control Officials has begun work on a model state regulation for process control, and the feed industry is considering development of a comprehensive risk-based system. For the most part, however, the current system emphasizes end-product sampling.

CVM is developing a comprehensive risk-based system that would be preventive – the Animal Feed Safety System. It would be designed to detect hazards before feed products are distributed and thus minimize detrimental animal and human health effects. AFSS would also reduce adverse economic impacts that could be heightened by the influence of today's global marketplace on the U.S. feed industry and allied industries.

FY 2003 ACCOMPLISHMENTS

In an effort to develop an umbrella preventive program for the manufacture and distribution of animal feed, we have organized an AFSS Work Group that includes representatives from state regulatory agencies and members from other parts of FDA. The Work Group sponsored a two-day public meeting in September 2003, and gathered input from representatives of the feed industry and others on the design of an effective preventive, risk-based program to help minimize risks associated with animal feeds.

The Work Group intends to use the information gathered in public meetings and written comments to prepare one or more regulations. We also expect to produce other documents, including guidance materials, education and training programs, enforcement strategies and compliance programs to assure the safety of the animal feed supply.

Protecting Against Bioterrorism

THE CHALLENGE

There is widespread concern that naturally occurring pathogens that could spread easily through the food chain could be used as bioterrorist weapons to harm human and animal health. There is also concern that common foodborne pathogens could be genetically altered to make it more difficult to solve potential problems. Bioterrorism against the human food and animal feed supplies would also harm the U.S. economy. FDA-regulated products such as animal drugs would play a central role in countering the effects of such terrorism.

FY 2003 Performance Goals

Goal Achieved

✓ **Implement a contract with the European Union to develop analytical methods to detect substances that are prohibited from ruminant feed by the BSE feed rule and that could be introduced into the U.S. animal feed supplies by bioterrorists.**

Goal Achieved

✓ **Review, assess and take appropriate enforcement action as a result of inspections conducted/samples collected. This includes follow-up actions as well as a result of intentional contamination.**

Goal Achieved

✓ **Develop a database containing a comprehensive inventory of registered animal drug establishments and listed animal drug products. Use this database to assess the availability or anticipated shortage of animal drug products that would be needed to deal with terrorist attacks.**

Goal Achieved

✓ **Conduct a threat analysis of possible terrorist actions that could be taken to contaminate animal feed.**

FY 2003 ACCOMPLISHMENTS

We are in the early stages of defining our role and goals with respect to bioterrorism. However, we are already working with other federal agencies to help the United States prepare for a biological emergency, natural disaster or terrorist attack by making sure there are safe and adequate supplies of animal drug products and animal feeds. We have developed an Emergency Operations Plan for this purpose. Specific accomplishments during the year, in addition to the preliminary work on the Animal Feed Safety System, included:

- Continued funding of a contract for a database of available veterinary diagnostic and laboratory capabilities throughout the nation. The database will improve the abilities of state diagnostic laboratories to provide timely information about animal diseases and chemical poisonings to emergency operations personnel. The contract is with Iowa State University and also involves the U.S. Department of Energy.

- Preparing a substantial portion of a draft preliminary assessment of vulnerabilities in the feed industry using the CARVER/SHOCK process, a method used to evaluate potential threats to regulated products.

- Working with animal feed trade associations to develop bio-security awareness guidelines for the feed manufacturing industry.

- Assisting in the updating of FDA's counterterrorism emergency response plan, including scenarios in which animal feed would transmit infectious organisms.

- Participating in nationwide bioterrorism exercises, in which CVM personnel had responsibility for coordinating responses relating to animal drug and feed issues. This included an "outside the box" component leading to the prevention of animal-to-human spread of the plague.

- Participating in interagency mock exercises on BSE introduction into the United States.

- Intensifying the review of products offered for import, and collaborating with the U.S. Customs Service and FDA field laboratories and offices on safety and security issues. This involved providing information on taking, preserving and shipping an appropriate feed or animal product sample to a laboratory for analysis, and on expediting the sharing of sensitive information with state officials and the feed and drug industries.

Assuring the Safety of Animals Produced by Biotechnology

THE CHALLENGE

The application of biotechnology to the production of animals and their products is expanding rapidly. Animal biotechnology includes both genetic engineering and cloning. Food-producing animals may be genetically engineered to optimize the nutritional value of derived food products, increase growth rate or enhance resistance to disease. Animals may also be genetically engineered to manufacture a human or veterinary drug, biologic, food additive, or other product of commercial value. There is much interest in cloning, the colloquial term used to describe the process of somatic cell nuclear transfer (SCNT) with the objective of producing near-identical copies of adult animals that possess superior production characteristics. Producing animals through biotechnology raises potential food and animal safety issues, and CVM needs to have a thorough understanding of the scientific and risk issues that the two kinds of animal biotechnology present.

FY 2003 Performance Goal

Complete risk assessment that will define the data needed to determine safety of food derived from cloned animals. If food derived from cloned animals is not comparable to food from conventionally bred animals, we will devise a risk management strategy (e.g. guidance) to reduce or avoid any risks. Secondarily, we will assess animal health risks, both for individual animals and populations of domesticated animals, for cloned animals this year.

Completion of the draft report was delayed to accommodate the analysis of a new data set. The team completed the analysis of the issue, including a significant new data set that arrived toward the end of the fiscal year, and concluded that food derived from animal clones posed no additional risks relative to comparable products from conventional animals. Completion of the draft report was delayed to accommodate the analysis of the new data set.

FY 2003 ACCOMPLISHMENTS

We are in the early stages of defining our role and goals in this area. Following is a summary of CVM's exploratory efforts in this area during FY 2003.

ANIMAL CLONES

CVM conducted a risk assessment to evaluate the safety of food derived from animal clones and the risk to animal health from cloning. The risk assessment concludes that the current weight of evidence suggests that there are no biological reasons to indicate that consumption of edible products from clones of cattle, pigs, sheep or goats poses a greater risk than consumption of those products from their non-cloned counterparts. Cloning can pose an increased frequency of health risks to animals involved in the cloning process, but these effects do not differ qualitatively from the effects observed in other animal reproductive technologies or natural breeding. The risk assessment built on the findings of a National Academy of Sciences report, which found that food products derived from animal clones and their offspring are likely to be as safe to eat as food from their non-clone counterparts.

DISPOSITION OF INVESTIGATIONAL ANIMALS

The Center has developed an outreach program to inform researchers engaged in producing genetically engineered animals of their responsibilities with regard to the disposition of investigational animals. As a first step, we contacted all land grant universities that are involved in research dealing with genetic engineering in animals to determine whether they require CVM authorization in the production and disposition of genetically engineered animals. The Center has been working closely with several university and private sector investigators to help them through the investigational animal drug process, including the appropriate disposition of investigational animals.

ANIMAL BIOTECHNOLOGY COMMERCIAL INVENTORY

Building on a project initiated in FY 2002, CVM has developed a database of 250 companies, research organizations and universities conducting animal biotechnology-derived product research and development. Maintaining the database is a dynamic process, so the activity will continue into the future.

Additional Surveillance and Compliance Actions To Protect Public and Animal Health

FY 2003 Performance Goals

(With ORA) **Maintain biennial inspection coverage by inspecting 50 percent of registered animal drug and feed establishments.**

Develop process control guidance to the feed industry and model regulations for state adoption.

The guidance was completed in conjunction with AAFCO, but the model regulations are still being developed.

THE CHALLENGE

Compliance and surveillance activities are key parts of our efforts with regard to antimicrobial resistance, BSE, drug residues, feed safety and other crosscutting issues described above. We have had challenges in other areas, related to our core functions of compliance-related actions, post-approval monitoring and animal feed safety. These challenges include surveillance to assess post-approval drug safety, taking steps to assure proper manufacture of approved drugs, regulation of the marketing of compounded drugs and other unapproved drugs, and acting against other threats to public and animal health. Accomplishments in these areas are described below.

FY 2003 ACCOMPLISHMENTS

Our FY 2003 accomplishments featured a blend of new and continuing activities. An example of the former is our involvement in the control of Monkeypox, a disease that provides evidence of a trend toward animal-to-human spread of infection through exotic animals. The Division of Compliance is now issuing permits to allow movement of animals (African rodents, North American prairie dogs and certain other animals) for reasons other than those identified in an FDA/CDC Joint Order on Monkeypox. We also coordinated follow-up to possible violations of the Order, which was issued under the authority of the Public Health Service Act.

We coordinated the investigation and subsequent recall of feed and feed ingredients containing high levels of *dioxin*. The dioxin came from a zinc oxide product, a byproduct of brass production, used in mineral mixes for incorporation into animal feed. The recall involved over 475 products from 17 firms. CVM worked with FDA field offices and state regulatory counterparts, as well as the USDA and EPA in the investigation and follow-up. The action was consistent with FDA's public health objective of reducing the level of exposure to dioxins in animal and human food. With cumulative exposure, dioxins are potential carcinogens and may cause reproductive or developmental health problems.

We issued a Compliance Policy Guide (CPG) on *animal drug compounding* in August 2003. The document provides guidance to drug compounders, veterinarians and FDA staff on how the agency intends to address compounding of drugs intended for use in animals. The CPG focuses on the manufacture and distribution of unapproved drugs that are clearly outside the bounds of traditional pharmacy practice. Consistent with the positions established in this policy, we helped obtain an injunction against a firm that manufactured sterile veterinary products from bulk antibiotics.

We also assisted in obtaining an injunction against a major drug manufacturer, based on continuing *violations of the current good manufacturing practice regulations*. As part of the consent decree, the firm agreed to pay $500 million to the U.S. Treasury, the largest monetary settlement in FDA history. This case involved both human and animal drugs.

One of the FDA strategic plan priorities calls for increased attention to detection of adverse events connected with drug use. In our continuing effort to *monitor experience with approved animal drugs*, we reviewed nearly 20,000 adverse drug experience reports, including 1,775 reports of products with manufacturing defects. We reviewed nearly 2,500 promotional labeling and advertising pieces prepared by drug manufacturers and distributors.

As a result of our pharmacovigilance program, sponsors of a number of drug products made *labeling revisions* reflecting post-approval adverse drug experience information, and notified veterinarians of the changes. The manufacturers of 15 euthanasia drug products containing pentobarbital added an environmental warning on their labeling, to minimize injury to wildlife that might feed on the carcasses of euthanized animals.

We also conducted *health hazard evaluations* for several marketed veterinary products and determined their recall classification based on their potential hazard to humans and animals.

In addition, we participated with FDA's Center for Drug Evaluation and Research in evaluating the Current Good Manufacturing Practice (CGMP) regulations for dosage form drugs. The goal of this initiative is to use a risk-based approach in evaluating the CGMPs, inspections and enforcement. This work supports the FDA strategic plan in that it emphasizes the need for greater flexibility and efficiency in drug manufacturing.

We issued nearly 600 *export certificates for animal drugs and feeds.* The actions certify that the products may be marketed in, and legally exported from, the United States.

Enhancing Productivity Through Results-Oriented Initiatives

THE CHALLENGE

The President's Management Agenda calls on federal agencies to focus on results and use their resources wisely. An expected outcome is that citizens will receive improved service and performance, and citizen satisfaction will increase.

FDA's Strategic Action Plan challenges us to use science-based efficient risk management, to obtain "the most public health bang for our regulatory buck." This includes targeting limited resources for maximum protection of the public health, and increased productivity in new drug development.

FY 2003 ACCOMPLISHMENTS

We believe that efficient, results-oriented management within the Center will meet the challenges of the President's Management Agenda and the FDA Strategic Action Plan. It will lead to enhanced consumer and animal health and increased satisfaction on the part of all of our stakeholders. Following are highlights of what we did this year in our efforts to achieve these outcomes.

REENGINEERING OUR BUSINESS PROCESSES

CVM's "Back to Basics" strategic plan goals call for reengineering many of our business processes to produce efficient results. This includes developing new ways to measure and improve the performance of our core functions.

To give us data to measure our performance, we implemented an *activity-based costing system*. This system relies on data from an *activity time reporting system*, which documents time spent by CVM staff on the major activities we perform each day. We developed and tested the time reporting plan during FY 2003, for implementation throughout the Center at the start of FY 2004.

When it is fully operational, the activity-based costing system will allow full time accounting for activities in program areas. This will, in turn, give CVM managers a key tool for planning and using their resources. It will enable the managers to better understand, manage, and assign true costs to our business processes, activities, services and products. In addition, it will communicate the Center's priorities to front line staff.

Activity-based costing directly supports the FDA Strategic Plan and our "Back to Basics" approach in several ways, including promoting business process improvement, prioritization and performance management. It promotes budgetary discipline and the efficient use of resources to facilitate decision-making.

In addition, CVM during FY 2003 introduced *project management* as a way of doing business. The application of project management to the Center's high priority projects has already resulted in improved organizational performance through increased accountability and a focus on results. The Project Management Staff is implementing an Action Plan for the use of project management Center-wide. Four pilot projects are under way, using project management principles, tools, processes and methodologies. The establishment of effective goals and objectives, strategies, assumptions and identification of project risks through project management resulted in a clearer vision of the project for the pilot teams, Center management and other stakeholders. The pilot teams received formal training in project management principles and use of CVM's standard web-based project management software.

We also established a formal *Executive Secretariat*, to improve the quality, timeliness and consistency of information the Center communicates to our stakeholders. The Executive Secretariat created a system to log and track correspondence, and a system to facilitate meetings between the Center and our stakeholders. During the Executive Secretariat's first year of operation, the Center eliminated a backlog of overdue correspondence and responded to 80 requests from associations, 34 from Congressional offices, 41 from consumers, 26 from members of the regulated industry, 24 from international correspondents and 36 from professionals.

APPLICATION OF STRATEGIC INITIATIVES

Here are two examples of changes we are making in line with the new results-oriented initiatives. First, during the past year our Office of Research revised its three-year plan and annual research report to better align research priorities with the "Back to Basics" initiative. As a result, the office's studies are now directly aligned with the four core functions in CVM's "Back to Basics" initiative: animal drug review (pre-market activities), compliance-related actions, post-approval monitoring and animal feed safety. Concurrently, the Office of New Animal Drug Evaluation integrated its research planning with that of the Office of Research.

Second, the Office of New Animal Drug Evaluation is applying the results-oriented, cost-effective management techniques in the following way. During FY 2002 activity-based costing exercises, the office mapped the processes it uses in its drug approval activities. During FY 2003, the office modified some of the processes and began to formalize them – through the preparation of guidelines and SOPs. Applying project management, ONADE is now identifying individual projects, assigning timeframes to each, and then tracking the projects.

Full implementation of activity-based costing will allow ONADE to assign costs to animal drug applications and supplements. Complete implementation of all the tools of results-oriented management will provide essential information for resource planning and other management decisions. One key goal is to reduce the cost of processing applications and supplements. These initiatives will be especially valuable as we begin to implement the Animal Drug User Fee Act.

STRATEGIC HUMAN CAPITAL MANAGEMENT

More effective regulation through a stronger workforce.

FDA Strategic Plan

We achieve excellence through the ongoing development of our competencies…

From CVM's Guiding Principles

This is the first of the government-wide initiatives listed in the President's Management Agenda. It is a vital part of CVM's results-oriented management emphasis. We did a number of things during FY 2003 that were directed toward development of our managerial, scientific and technical skills. For example, we have started a major workforce planning initiative, with the initial focus on the Office of New Animal Drug Evaluation. The ultimate goal is to identify ONADE's workforce needs through FY 2009, and determine recruitment and retention strategies.

FY 2003 Performance Goal

Goal Achieved

✓ Continue development, expansion and integration of the Staff College by expanding content of in-house program; research and development components and integration of competency based Learning Management System with Center and Agency information technology infrastructure.

We continued to develop and expand the CVM Staff College, which we established in FY 2002. The Staff College is intended to provide a framework to support development of the scientific, management, leadership and team competencies that enable our staff to more effectively carry out CVM's mission. During the past year the Staff College completed a Center-wide assessment of training needs, and prepared a curriculum development plan based on the assessment.

Staff from the Staff College and the Office of New Animal Drug Evaluation have begun to develop training plans for newly hired reviewers, with the objective of reducing the amount of time necessary for reviewers to achieve full performance.

INFORMATION TECHNOLOGY AND ELECTRONIC GOVERNMENT

We are continuing to enhance our management of information technology. This is consistent with the President's expanded electronic government initiative. For example, we extended the scope of electronic submissions by drug sponsors, improved and broadened several databases, and made more data and information available to the public through the CVM website. We expanded the accessibility of our website by launching a Spanish language page in March 2003.

The federal government can secure greater services at lower cost through electronic government.

From the President's Management Agenda

The work of the information technology staff in our Office of Management supported many of the year's accomplishments that we describe elsewhere in this report. Here are two more examples. The IT staff integrated the separate Bioresearch Monitoring (BIMO) database into the Center's existing Submission Tracking and Reporting System (STARS). This reduces the amount of data entry that the BIMO staff has to make and makes the bioresearch investigational data readily available to all throughout the Center. Similarly, the IT staff integrated the Division of Compliance database on consulting reviews into STARS, making the tracking of consulting reviews more efficient.

Leveraging Productivity Through Partnerships

We will develop revenue-enhancing programs for core services … by leveraged or otherwise enhanced CVM or stakeholder resources for achieving shared responsibilities.

CVM "Back to Basics" Goal

THE CHALLENGE

Budget tightening and other factors have prompted FDA and CVM to continuously seek out partnering opportunities to maximize the use of our resources. Our success in promoting and protecting the public health depends in large part not only on active involvement of our stakeholders, but also partnerships with those whose goals align with ours.

FY 2003 ACCOMPLISHMENTS

We initiated several partnering arrangements during the year and continued a number of others. These mutual-benefit arrangements have influenced CVM policies and practices, and have enhanced our research and epidemiological efforts. They are in line with the FDA strategic plan priority to ensure effective communication and working relationships with key external stakeholders.

We have highlighted a number of partnership agreements in this report. Examples include the collaborative effort with the U.S. Department of Agriculture and the Centers for Disease Control and Prevention in the National Antimicrobial Resistance Monitoring System; collaboration with the Mexican government to detect resistance in pathogens that may contaminate food imported into the U.S. and also pose a hazard to U.S. travelers; and arrangements with state regulatory agencies to conduct BSE feed rule inspections and medicated feed inspections.

There are many partnerships that we have not mentioned in this report. For example, we continued working with the Joint Institute for Food Safety and Applied Nutrition (JIFSAN) at the University of Maryland on antimicrobial resistance, aquatic species grouping and pharmacokinetic modeling. We collaborated with the World Health Organization on global surveillance for *Salmonella*, and training in the isolation, identification and susceptibility testing for *Salmonella* and *Campylobacter*. We participated in an interagency agreement with the Department of Veterans Affairs for the evaluation of *Mycobacterium marinum* virulence mutants in fish, a project that may lead to developing a DNA-vaccine against a major pathogen in aquaculture-raised fish.

These and other partnerships allow us to devote our scarce resources to those activities that we are uniquely qualified to perform. They provide a means to expand our capabilities by allowing us to use our intellects, time, money and other resources in a manner that maximizes their value.

OUR GOALS
For Fiscal Year 2004

Regulation of animal drugs and feeds present complex challenges. Assuring food safety, for example, requires expertise with regard to a diversity of issues including antimicrobial resistance, carcinogenic drugs and toxic residues. We regulate drugs and feeds that are used in a wide range of species, including companion animals and exotic animals, as well as food producing animals. New and emerging issues will be added to these ongoing challenges during FY 2004.

ANIMAL DRUG USER FEE ACT IMPLEMENTATION

We will place major emphasis during FY 2004 on the implementation of the Animal Drug User Fee Act. This includes hiring new personnel, and purchasing, installing and maintaining new technological management and information systems.

Our ADUFA goals, for FY 2004 and beyond, are to:

- Eliminate existing backlogs of animal drug applications within 2 years.
- Over a 5-year period, move toward the goal of completing the review of 90 percent of animal drug applications within 180 days.
- Resolve new and emerging scientific issues that affect CVM's ability to make approval decisions.
- Achieve an enhanced and predictable review performance.

OTHER MAJOR GOALS

Other major goals for 2004 include:

Implementing our new *guidance on antimicrobial resistance*, the risk-based system for assessing the likelihood that an antimicrobial drug used to treat animals may cause an antimicrobial resistance problem in humans.

Developing plans for the *animal feed safety system*. We will review the information presented during the public meeting in September 2003, analyze the strengths and weaknesses of the current system, and analyze other innovative programs. We will then begin to develop regulations, guidance documents and other materials as appropriate.

Continuing our efforts to increase the availability and diversity of drugs for *minor uses and minor species.*

Making appropriate decisions with regard to the scope of the *BSE feed regulation*, making progress in the development and implementation of analytical methods for detecting prohibited material, and exploring other alternatives to enhance the efficient enforcement of the regulation. We will continue the reinspections of the relatively few firms that were found to be out of compliance at their last inspections.

Expanding our capability to *regulate drug residues in imported seafood, and in meat and milk.*

Further defining CVM's role, goals and program activities with regard to *bioterrorism* and *animal biotechnology.*

Adapting our *compliance and surveillance activities* to meet the unexpected challenges in post-approval drug use and animal feed safety.

Further developing our initiatives for *enhancing productivity through results-oriented initiatives.* Among other things, we plan to integrate activity-based costing into our operational planning and budgeting.

Developing new *partnership arrangements* with our stakeholders, and enhancing existing partnerships.

STAFFING, SPACE and BUDGET

STAFF

As of the end of FY 2003, CVM had a total staff of 346. This included 86 administrative personnel, 85 regulatory personnel, 180 scientists and 5 others.

SPACE

CVM has received and begun to occupy an additional 5,600 square feet of space on the second floor of Metro Park North IV. With the passage of ADUFA, new space will be required for approximately 75 additional personnel over the next three years.

We now have offices in Metro Park North II**,** Metro Park North IV and Metro Park North V in Rockville, Maryland, in addition to the Office of Research facilities in Laurel, Maryland. CVM offices are scheduled to move to the FDA campus at White Oak in Silver Spring, Maryland, by the end of this decade, with Office of Research facilities remaining in Laurel, Maryland.

BUDGET

The FY 2003 enacted budget for the Animal Drugs and Feeds Program was $87,659,000, broken down as follows:

Center $57,115,000 with 341 full-time equivalent (FTE's)

Field $30,544,000 with 255 FTEs

Budget details are in Appendix C.

The CVM budget increased by 142 percent from 1996 to 2004. These increases were due to Food Safety increases from 1998 to 2001, and increases for BSE, Imports and Inspections, and Antibiotic Drugs. Additional increases are anticipated during FY 2004, due to passage of ADUFA.

AWARDS

CENTER FOR VETERINARY MEDICINE*
Honor Award Recipients

THE PRESIDENT OF THE UNITED STATES

2003 MERITORIOUS PRESIDENTIAL RANK AWARD

Andrew J. Beaulieu, D.V.M.
For scientific and policy leadership during 30 years with the Center for Veterinary Medicine.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

SECRETARY'S AWARD FOR DISTINGUISHED SERVICE

The Mexico-U.S. Antimicrobial Resistance Monitoring System Team
For establishing a program in Mexico to detect antimicrobial resistance in foodborne pathogens to better assure the safety of domestic and exported food to the U.S.

Sonya Bodeis
Marcia Headrick, D.V.M., M.P.H.
Patrick F. McDermott, Ph.D.
Linda Tollefson, D.V.M., M.P.H.
Robert Walker, Ph.D.
David G. White, Ph.D.

FDA Counter/Bioterrorism Preparedness Team
For demonstrating outstanding leadership in FDA's counter/bioterrorism preparedness efforts to protect the nation's public health and food supply from biological, chemical and radiological threats and to respond more effectively to threats following the tragic events of September 11, 2001.

Charles E. Eastin, II, D.V.M., Ph.D., M.P.H.

*In cases in which the award recipients included individuals from CVM and other organizations, only the CVM staff are mentioned.

Schering-Plough Corporation Injunction Team (FDA)
For outstanding performance in the development, negotiation and execution of the Schering-Plough Corporation consent decree of permanent injunction.

Jorge F. Christian
Gloria J. Dunnavan
Elizabeth A. Grove

FOOD AND DRUG ADMINISTRATION

FDA COMMISSIONER'S SPECIAL CITATION

Veterinary Compounding Injunction Litigation Group
For exceptional efforts in successfully litigating a complex, precedent-setting injunction case involving illegal compounding of veterinary drugs.

Gloria J. Dunnavan
Elizabeth A. Grove

AWARD OF MERIT

John C. Matheson III
For sustained, outstanding leadership of FDA's efforts in the area of animal biotechnology.

Elizabeth L. Parbuoni
For outstanding leadership among CVM reviewers and industry sponsors in the implementation of electronic submissions leading to improved response times and communication of review outcomes.

Reengineering Recalls Working Group
For outstanding performance in reengineering FDA recall procedures to achieve greater efficiency in processing, enhance customer service and increase availability of information to stakeholders.

Barbara A. Rodgers

EQUAL OPPORTUNITY ACHIEVEMENT AWARD

CVM Recruitment and Retention Team
For exemplary service and leadership in the area of recruitment and retention that promoted inclusion and diversity within the Center for Veterinary Medicine.

Sherry L. Ayers
Andrew J. Beaulieu, D.V.M.
Monica R. Brown Reid, D.V.M.
Bessie M. Cook
Stephanie W. Dove
Eric S. Dubbin, D.V.M.
Henry E. Ekperigin, D.V.M., Ph.D.
Lowell P. Fried
Kendrick T. Gibbs
Linda A. Grassie
Jo W. Gulley
Treava S. Hopkins
Gwendolyn Jones
Woodrow M. Knight, Ph.D.
Anna B. Nevius, Ph.D.
Isabel W. Pocurull
William D. Price, Ph.D.
Scheryl Y. Sledge-Gonzalez
Elaine A. Walker
Katherine P. Weld, Ph.D.

OUTSTANDING SERVICE AWARD

Amey L. Adams, Ph.D.
For outstanding service as a superior mentor in the area of biotechnology and for providing outstanding contributions to the Animal Biotechnology Working Group.

CVM Staff College Team
For outstanding leadership and service to the Center for Veterinary Medicine in development of its Staff College.

Stanice L. Cooper
Paula B. Searle
Melissa A. Starinsky
Sherri S. Washington
Faith S. Skordinski, Ed.D.

Export of U.S. Poultry to Russia Team
For providing both expert scientific knowledge and effective negotiation skills to resolve an important trade dispute related to the export of U.S. poultry to Russia.

Steven D. Brynes, Ph.D.
Nicholas E. Weber, Ph.D.

George K. Haibel, D.V.M.
In recognition of outstanding performance resulting in the timely preparation, processing and maintenance of regulations and Federal Register documents associated with new animal drug approvals.

Anita L. Heinrich
For sustained, exceptional service to CVM's employees in delivering major administrative management services, in addition to her many duties as the Center's Budget Officer.

Residue Chemistry Team
For elimination of the extensive backlog of methods submissions and development of a positive cooperative relationship between INAD sponsors and the CVM.

Steven D. Brynes, Ph.D.
Lynn G. Friedlander, Ph.D.
Wendelyn R. Jones-Warren, Ph.D.
David R. Newkirk, Ph.D.
Julia A. Oriani, Ph.D.
Valerie B. Reeves

Lisa M. Troutman, D.V.M.
For sustained excellence in regulatory review with significant contributions in the field of animal biotechnology.

Kimberly A. Worthington
For outstanding performance in managing administrative, personnel and budget activities during periods of severe staff shortages in the Office of Research.

GROUP RECOGNITION AWARD

BSE Feed Ban Compliance Program Team
For exceptional effort in enhancing communication and compliance efforts to ensure a high level of compliance with the BSE Feed Ban regulation.

Neal Bataller, D.V.M.
Kim E. Bell
Deborah A. Cera
Gloria J. Dunnavan
Mark H. Hackman
Dragan Momcilovic, D.V.M., Ph.D.
Frances M. Pell
Burt A. Pritchett, D.V.M.
Barbara A. Rodgers
Fredda C. Shere-Valenti
Francisca Stone
Toni V. Wooten
Kim R. Young

Division of Animal and Food Microbiology Support Team
For outstanding support of intramural and extramural training in microbiology and molecular biology methods while maintaining effective productivity in active research programs.

Sherry L. Ayers
Sonya M. Bodeis
Peggy J. Carter
Patti Cullen
Linda L. English
Sharon L. Friedman
Charles M. Gieseker
Althea Glenn
Susannah Hubert
Shawn D. McDermott
Sadaf Qaiyumi
Lisa E. Rojas
Stanley G. Serfling

Division of Manufacturing Technologies Group
For outstanding achievement in implementing the Center Strategic Plan by significantly lowering Division backlog and development of processes to monitor workload and increase review efficiency.

Laura A. Adam
Dennis M. Bensley, Ph.D.
Mary Beth Borsetti
Jean-Michel Campagne, Ph.D.
Xikui Chen, Ph.D.
Julie V. Conwell, Ph.D.
Anne D. Edelson
Raafat M. Fahmy, Ph.D.
Alem Ghiorghis, Ph.D.
Charles W. Gray, Ph.D.
Norman R. Gregory
Wei Guo, Ph.D.
Gregory W. Hunter, Ph.D.
Mai X. Huynh
Kalatu S. Kamara
Mary G. Leadbetter
June Liang, Ph.D.
William G. Marnane
Angel McLean
James K. Nitao, Ph.D.
Michael Popek
Robin M. Stone
Geoffrey K. Wong

Tissue Residues and Strategies for Case Development Organization and Training Team
For outstanding contributions and teamwork during the development and implementation of Federal/State training on investigations/case development of illegal residues in meat and poultry.

Deborah A. Cera
Eric S. Dubbin, D.V.M.
Gloria J. Dunnavan
Lynn G. Friedlander, Ph.D.
Joseph C. Paige, D.V.M., MPH
Frances M. Pell
Michael R. Talley, D.V.M.
Toni V. Wooten

GROUP RECOGNITION AWARD

1st International Conference on Microbiological Risk Assessment Foodborne Hazards
For planning and coordination efforts of the first International Conference on Microbiological Risk Assessment Foodborne Hazards, helping focus the world community of scientific priorities.
Mary J. Bartholomew, Ph.D.

Bioterrorism Act Downlink and Outreach Group
For your contributions to the successful satellite downlink meeting and the development and distribution of outreach materials communicating our messages and legislative proposals within the United States and worldwide.
Aleta M. Sindelar

FDA BSE Emergency Response Group
For exceptional performance and leadership in designing emergency exercise scenarios for three exercises testing the FDA BSE Response Plan, which resulted in development of a more comprehensive response plan for the Agency.
Gloria J. Dunnavan

Records Access Guidance Workgroup
For outstanding contributions in developing and writing the FDA Concept Paper, "Bioterrorism Act Proposed Guidance to Records Access."
Neal Bataller, D.V.M.

Research Involving Human Subjects Committee
For exceptional performance in assuring that all FDA-sponsored research complies with the Federal regulations and ethical principles for the protection of human research subjects.
Linda D. Youngman, Ph.D.

LEVERAGING/COLLABORATION AWARD

David B. Batson, Ph.D.
For sustained efforts in fostering leveraging and collaborations in the research program of the Center for Veterinary Medicine.

CVM Leveraging Education Series Team
For their initiative and perseverance in forming collaborations with and educating outside parties to more effectively carry out the mission of CVM.

David B. Batson, Ph.D.
Marilyn N. Martinez-Pelsor, Ph.D.
Melissa A. Starinsky

FDA/CVM Swine Mycoplasmal Pneumonia Workshop Team
For exceptional performance in organizing and participating in the FDA/CVM Swine Mycoplasmal Pneumonia Workshop, Kansas City, MO, March 6-7, 2002.

Nabil A. Anis, D.V.M.
Cindy L. Burnsteel, D.V.M.
Irma M. Carpenter
Gillian A. Comyn, D.V.M., MPH
Naba K. Das, D.V.M., Ph.D.
Janice A. Derr, Ph.D.
Janis R. Messenheimer, D.V.M.
Julia W. Punderson, VMD, DACT
Susan Storey, D.V.M.
Michelle L. Stull, D.V.M.

Toxicologic Pathology Training Team
For providing consultation and training in the discipline of toxicologic pathology to FDA scientific reviewers.

Donald Prater, D.V.M.

The University of Puerto Rico Memorandum of Understanding (MOU) Operating Committee
For enhancing the public health through training programs that improve the scientific and regulatory expertise for products in the Americas.

Merton V. Smith, II., Ph.D., J.D.

QUALITY OF WORK LIFE AWARD

Melanie R. Berson, D.V.M.
For creating a work environment that encourages participation, creativity and humor.

IT Productivity Team
For significant contributions to the productivity and quality of work life in FDA's Center for Veterinary Medicine.

Robert Bruce Craig
David Shawn Matheny

David L. Lynch
For leadership and innovation in providing an improved quality of work life for CVM employees.

PLAIN LANGUAGE AWARD

FDA 2003 Science Forum Organizing Committee
For embracing Plain Language goals and reaching out beyond the traditional scientific community to bring information about FDA science to a more diverse audience.

Sizhuang Stephen Yan, Ph.D.
Linda D. Youngman, Ph.D.

Registration Proposed Rule-Writing Group
For extraordinary contributions in drafting the registration proposed rule, writing a clear and understandable bioterrorism proposed rule to ensure the protection of the United States food supply.

Isabel W. Pocurull

COMMISSIONER'S SPECIAL RECOGNITION AWARD

Cancer Drug Development Patient Consultant Program
For exceptional performance with the Patient Consultant Telephone Lecture Series.

Tracey H. Forfa, Esq.

CBER GROUP RECOGNITION

Countering Bio Terrorism Recruitment Initiative Group (Swat Team)
For exceptional leadership and teamwork contributing to the successful completion of the CBER CT/BT hiring initiative.
Lisa M. Durphy

FDA SCIENTIFIC ACHIEVEMENT AWARD

Excellence In Laboratory Science CVM LABORATORY RESEARCH EXCELLENCE AWARD

Campylobacter Working Group
For the development of the NCCLS approved antimicrobial susceptibility testing method for the fastidious food borne bacterial pathogen Campylobacter jejuni.
Sonya M. Bodeis
Patrick F. McDermott, Ph.D.
Robert D. Walker, Ph.D.

Excellence in Review Science CVM REVIEW SCIENTIFIC EXCELLENCE AWARD

Harlan J. Howard, Ph.D.
For leadership in creating scientific standards, where none existed previously, in evaluating effectiveness and animal safety for reproductive agents used in food animals.

PHS COMMISSIONED CORPS HONOR AWARDS

PHS ACHIEVEMENT MEDAL (AM)

LCDR Minnis Tom Hendricks
For contribution toward the attainment of program objectives by directing and coordinating emergency support to CDC by assisting them in triaging relevant technical documents for FDA.

CVM AWARDS AND RECOGNITION

THE CVM DIRECTOR'S HONOR AWARD

First place recipient **– Margaret A. Klock**

For exemplary performance, outstanding service, dedication and commitment to the Center for Veterinary Medicine in all areas of administrative support.

Second place recipient **– William J. Burkholder, D.V.M., Ph.D.**

For exemplary work and leadership in Agency precedent setting policy issues concerning pet food.

CVM ADMINISTRATIVE/COMMUNICATIONS EXCELLENCE AWARD

Marilyn H. Broderick

For outstanding accomplishments in advising the Center and the Agency officials about three pivotal information disclosure issues.

Sherri S. Washington

For her commitment to excellence and outstanding performance in the development, administration and maintenance of the CVM Staff College Knowledge Center.

CVM SUPPORT STAFF EXCELLENCE AWARD

Jean D. Jackson

For your diligence, perseverance and dedication to your family and profession and the many long hours of service committed to the pursuit of excellence.

CVM TEAM EXCELLENCE AWARD

CVM Aquaculture Methods Priority Team
For extraordinary contributions to CVM's mission through the identification, transfer and validation of improved methods for the detection of chloramphenicol residues in seafood and honey.

Julia A. Oriani, Ph.D.
Kevin J. Greenlees, Ph.D.
Valerie Reeves
Merton V. Smith, II., Ph.D., J.D.
Frances M. Pell
Mary C. Carson, Ph.D.
Pak S. Chu, Ph.D.
David N. Heller
Philip J. Kijak, Ph.D.
Cristina B. Nochetto
Jurgen D. von Bredow, Ph.D.

CVM User Fee Working Group
For outstanding leadership in negotiating a mutually beneficial user fee program with the animal drug industry.

Andrew J. Beaulieu, D.V.M.
David L. Lynch
William G. Marnane
Jerome J. McDonald, Ph.D.
A. Robert Miller
Steven D. Vaughn, D.V.M.

Electronic Submissions Working Group (ESWG)
For outstanding achievement in facilitating the electronic submission of information, as a substitute for paper, and fostering the use and acceptance of electronic signatures.

Daniel A. Benz, Ph.D.
Lesley J. Groves
Mai Huynh
Thomas Letonja, D.V.M., Ph.D.
Jerome J. McDonald, Ph.D.
Julia A. Oriani, Ph.D.
Glenn A. Peterson, Ph.D.
Elizabeth L. Parbuoni
Jeffrey L. Punderson, D.V.M.
Margaret A. Zabriski, Ph.D.

PUBLICATIONS

Note: Names of CVM staff members are in bold type

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BUDGET

The FY 2003 budget for the Animal Drugs and Feeds Program follows:

	Pre-Mmarket	Post-Market	FY 2003 Total
Center	$27,100,000	$30,015,000	$57,115,000
Field	$ 2,237,000	$28,307,000	$30,544,000
Total	$29,337,000	$58,322,000	$87,659,000

The budget amount includes costs for personnel, figured in terms of "Full-Time Equivalents (FTE)," which is the budget nomenclature for one employee working full time. For FY 2003, the FTEs were:

Center 341	Field 255	Total 596

The following table provides the trend for the Animal Drugs and Feeds Program since 1996:

	1996	1997	1998	1999	2000	2001	2002	2003
Center	$25,418,000	$25,588,000	$28,612,000	$30,668,000	$36,471,000	$48,440,000	$55,727,000	$57,115,000
Field	$11,396,000	$10,628,000	$12,742,000	$12,585,000	$13,122,000	$15,630,000	$29,916,000	$30,544,000
Total	$36,814,000	$36,216,000	$41,354,000	$43,253,000	$49,593,000	$64,070,000	$85,643,000	$87,659,000