UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

GOVERNMENT ACCOUNTABILITY PROJECT,	)	
Plaintiff,	)	
v.	)	Civ. No. 1:12-cv-01954 (KBJ)
FOOD AND DRUG ADMINISTRATION U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES,	)	
Defendant.	)	

DECLARATION OF MICHAEL J. BLACKWELL, D.V.M., M.P.H.

I, Michael J. Blackwell, D.V.M., M.P.H., declare as follows:

1. I am legally competent to make this declaration.

2. I am currently President of Blackwell Consulting LLC in Knoxville, Tennessee. I have held this position since September 2002.

3. Previously, I was also Dean of the College of Veterinary Medicine at the University of Tennessee in Knoxville, Tennessee. I held this position from August 2000 to March 2008.

4. Before my appointment at the University of Tennessee, I served with the United States Food and Drug Administration ("FDA") in Rockville, Maryland for a total of 20 years, during the period from 1977 to 1999. I was the Deputy Director of the Center for Veterinary Medicine ("CVM") at FDA from June 1994 to February 1999. As Deputy Director of CVM, I was responsible for the day-to-day operations in all mission areas, including animal drug product

approvals. Concomitantly, I served as Chief Veterinarian of the United States Public Health Service from June 1994 to July 1998, being the chief advisor to the Surgeon General regarding veterinary medicine as it relates to public health.

5. I served in the Office of the Surgeon General of the United States in Washington, DC as Chief of Staff from February 1999 to August 2000. As Chief of Staff, I managed the Office of the Surgeon General, directing the duties of all staff and operations.

6. I hold a Doctor of Veterinary Medicine degree from Tuskegee University in Tuskegee, Alabama, and a Master of Public Health degree from Loma Linda University in Loma Linda, California. I operated veterinary practices in Oklahoma and Maryland.

7. The statements made in this declaration are based upon my personal knowledge and my clinical and scientific training and expertise, especially as they relate to antimicrobial resistance, antimicrobial use in food animal production, and the regulation of animal drug products by FDA.

8. I am submitting this declaration in support of Plaintiff's motion for summary judgment. I understand that the Government Accountability Project has sued the Food and Drug Administration under the Freedom of Information Act, seeking the disclosure of information concerning the 2009 sales volume of various antimicrobial drugs contained in a document referred to as "Document 2." The purpose of this declaration is to explain how antimicrobial use in food animal production impacts public health, describe how animal drugs sponsors have opposed regulation of antimicrobial use, and provide an analysis of certain arguments presented by FDA concerning the potential effects of disclosure of the 2009 sales volume data in Document 2.

ANTIMICROBIAL USE IN FOOD ANIMALS IMPACTS PUBLIC HEALTH

9. The use of antimicrobial drugs in humans and food animals promotes the development of antimicrobial resistance. While many types of antimicrobial use contribute to the development of antimicrobial resistance, certain uses that are widespread in food animal production contribute more than others. Specifically, antimicrobials are administered to food animals for purposes like growth promotion and to increase weight gain, and to prevent animal diseases associated with poor hygiene, overcrowding, and unnatural diets. In these cases, antimicrobials are administered to large groups of animals (typically via feed or water) for long durations and at low doses. This manner of use is especially effective at increasing selective pressure for antimicrobial-resistant bacteria and thereby promoting the evolution of antimicrobial resistance in bacterial populations. These bacteria may infect humans or transfer genes that encode resistance to other bacteria that may infect humans.

10. While clear and compelling scientific evidence now links these uses to the development of antimicrobial resistance, scientists who investigate this link face a major obstacle: the lack of detailed data on antimicrobial use in food animal production. In the United States, comprehensive data on food-animal use are not collected. This makes it difficult to analyze and explain patterns of antimicrobial resistance, as these patterns are shaped largely by antimicrobial use. It also hinders the development and evaluation of appropriate public policies to combat antimicrobial resistance.

11. The best indicators of antimicrobial use are antimicrobial sales data reported by animal drug sponsors under ADUFA. Unfortunately, FDA does not release the bulk of the data that sponsors are required to submit. FDA only publishes annual summaries that contain broad

aggregations of reported data. These summaries are of limited value to scientists and other stakeholders.

ANIMAL DRUG SPONSORS OPPOSE REGULATION OF ANTIMICROBIAL USE

12. Under the Federal Food, Drug, and Cosmetic Act ("FDCA"), 21 U.S.C. § 301 *et seq.*, FDA is charged with regulating animal drugs, including drugs used in food animals. The agency must approve new animal drug products before they may be marketed. It must also approve new uses of existing animal drug products before they may be marketed for those uses. Under the FDCA, it is illegal to market an unapproved animal drug product or to market an approved product for an unapproved use. FDA approval requires the sponsor of that product demonstrate that the product is safe and effective for its intended use. Following FDA approval, if the agency finds that an approved use of the product is unsafe or "not shown to be safe," the agency will move to withdraw its approval.

13. During the 20 years that I served at FDA, animal drugs sponsors frequently opposed regulatory requirements related to their products. I continued to observe opposition to such requirements after I left the agency to serve as Dean of the College of Veterinary Medicine at the University of Tennessee, as well as in subsequent positions. In particular, I noted that sponsors oppose restrictions on products even when use of the products is detrimental to public health.

14. A notable example of opposition is the use of fluoroquinolones in poultry. From 1995-1996, FDA approved three animal drug products that contained fluoroquinolones for use in chickens and turkeys. Two of the products contained a fluoroquinolone known as sarafloxacin hydrochloride and were sponsored by Abbott Laboratories ("Abbott"). The third product

contained a fluoroquinolone known as enrofloxacin and was sponsored by Bayer Corporation (Bayer"). The three products were approved for administration to poultry via water for preventative indications, such as "control of mortality associated with *Escherichia coli*." These approvals were examples *par excellence* of uses of antimicrobials in food animal production that threaten public health.

15. The public health risks posed by these products quickly became apparent. Most notably, fluoroquinolone resistance in *Campylobacter* bacterial isolated from retail poultry products rose sharply. *Campylobacter* bacteria are among the most common causes of diarrheal disease in the United States: the U.S. Centers for Disease Control and Prevention ("CDC") has estimated that *Campylobacter* infect more than 1.3 million people in this country each year. Fluoroquinolones are among the most important antimicrobial classes in human medicine. The World Health Organization ("WHO") has classified them as "critically important" to human medicine (the highest level of importance) and FDA, using different criteria, has classified fluoroquinolones as "critically important" (also the highest level of importance) as well. The resistance of *Campylobacter* bacteria to fluoroquinolones as a result of the preventative use of fluoroquinolones in poultry production was cause for concern and an impetus for action.

16. In October 2000, FDA published findings that the three fluoroquinolone products were no longer shown to be safe. Pursuant to the FDCA, the agency initiated proceedings to withdraw the approvals of these products. Abbott agreed to voluntarily withdraw approvals of the two sarafloxacin hydrochloride products but Bayer refused to voluntarily withdraw the approval of the enrofloxacin product. Bayer fiercely contested withdrawal over four years of administrative proceedings. FDA prevailed, however, and the enrofloxacin approval was withdrawn in 2005.

ADUFA SALES DATA COULD NOT IMPLY OVERUSE BY PARTICULAR CLIENTS

17. I understand that at least one sponsor has claimed that disclosure of the redacted information Document 2 could enable a competitor to encourage the sponsor's customers to switch to one of the competitor's products by implying that the sponsor's product is being over-used.

18. The only explanation for why over-use of a particular antimicrobial might encourage a customer to switch products that I can conceive of is the following one: over-use of an antimicrobial will, over time, promote the development of antimicrobial resistance in bacteria; the development of antimicrobial resistance will reduce the efficacy of the over-used antimicrobial; and, as a result, use of a different antimicrobial will be needed to achieve the desired effect. This replacement antimicrobial drug may then be supplied by a competitor.

19. The development of antimicrobial resistance is driven by local patterns of antimicrobial use. Antimicrobial resistance develops through evolution by natural selection: the exposure of bacterial populations to antimicrobial compounds selects for bacteria that are resistant to these compounds due to genetic mutation or horizontal gene transfer. The evolution of antimicrobial resistance is dependent on these exposures, which result from antimicrobial use in particular locales. So, for example, administering penicillin to a pig in North Carolina does not expose bacteria in a chicken in Arkansas or a dairy cow in Pennsylvania to that penicillin. Therefore, using the penicillin in North Carolina will not promote resistance in bacterial populations in the animals in Arkansas or Pennsylvania.

20. To my knowledge, no sales data that are reported under ADUFA refer to particular geographic locations where antimicrobials are purchased or used. Rather, sponsors

report data aggregated by national sales and overseas sales. It is therefore impossible to use ADUFA sales data to determine antimicrobial use in particular regions, states, or counties, let alone particular herds of animals. As a result, these data could be used to reveal overuse by particular clients of a sponsor only if antimicrobial use of that sponsor's drugs was identical across all of that sponsor's clients. In reality, different species of food animals are produced for different markets and in different regions of the country with different disease ecologies, resulting in a high degree of variability in antimicrobial use among sponsors' clients.

CHANGES IN SALES DUE TO DISEASE EVENTS ARE NOT PREDICTABLE

21. I understand that at least one declarant has suggested that while sales of these drugs have fluctuated since 2009, those fluctuations are often due to disease outbreaks, and so competitors could use publicly available information about disease outbreaks to derive more current estimates of drug sales from the 2009 data.

22. While some of these drugs have narrow indications, most have broad spectrums of activity. As a result, they are effective against a range of microorganisms, and are in fact used to treat a variety of infections well beyond those for which they are labeled. Moreover, there is considerable overlap in the purposes for which these drugs are used in practice, even among drugs in different classes and routes of administration.

23. Additionally, herd health demands varied approaches to treating outbreaks of disease, and veterinarians exercise considerable judgment and discretion in how they use these drugs. For example, in some cases, a veterinarian may determine that the most effective approach is to simply cull the sickened animals from the herd. Or the veterinarian may treat the unaffected animals with a preventative dose of a particular antimicrobial drug. Or the

veterinarian may treat the sick animals with a higher dose, or employ some combination of these different approaches. The approach used will be based on the particular circumstances, and the amount of a given drug used will vary depending on the severity of the outbreak and the approach used to treat it.

24. Thus, while it is reasonable to expect that an outbreak of a particular disease would cause a spike in sales of drugs used to treat that disease, I disagree with the claim that information about disease outbreaks could be used to derive useful estimates of current sales volume from the 2009 data. In fact, this variability illustrates why better reporting of how these drugs are actually used is still needed.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Michael J. Blackwell, D.V.M., M.P.H.
President
Blackwell Consulting LLC

Executed on this 19TH day of February, 2015 in Knoxville, TN.