



Consumer Federation of America

Going Local: Initiatives to Reduce Antibiotics in the Food Supply

A Resource Guide for Consumer Advocates

Thomas Gremillion, Gabrielle Gurian

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Overview

Since their discovery in the 1930s, antibiotics have become a ubiquitous and critical component of modern medicine. With increased use, however, antibiotics are losing their effectiveness. At the same time, development of new antibiotics has largely stalled, with no new class of antibiotics discovered since 1987.¹ The implications are dire. Antibiotic-resistant infections now kill 23,000 Americans each year, according to the Centers for Disease Control and Prevention (CDC).² Public health authorities warn that we may soon find ourselves in a post-antibiotics era, in which minor injuries and medical procedures turn into life threatening events.³

In order to preserve the efficacy of antibiotics, experts agree that we should use less of them.⁴ At times, no good alternative exists to treating a person or an animal with antibiotics, but without dramatically curtailing their use, antibiotics soon may not work when they are truly needed. This means doctors prescribing antibiotics less frequently, hospitals improving hygienic procedures to prevent infections from occurring in the first place, and crucially, eliminating routine antibiotic use from agriculture.⁵ In the United States, livestock consume approximately 70% of medically important antibiotics.⁶ Farmers often feed animals antibiotics on a routine basis to compensate for crowded, unsanitary conditions,⁷ and to “improve production efficiency” by stimulating animals to grow faster than they otherwise would.⁸ In other words, much if not most of antibiotic use in the United States serves to enable large-scale animal agriculture operations that require antibiotic interventions by design.

Scientists have long recognized the resistance threat posed by rampant overuse of antibiotics in agriculture.⁹ Indeed, the U.S. Food and Drug Administration first proposed a blanket ban on subtherapeutic antibiotic use in animals in 1975.¹⁰ Industry opposition, however, has stymied efforts to impose meaningful controls. Under President Barack Obama, the U.S. Food and Drug Administration (FDA) made some progress towards curbing the most egregious overuse of antibiotics in animals—in particular, for growth promotion—but the most recent data indicates that antibiotics use in food animals continues to rise.¹¹ The lack of progress points to the need for more aggressive efforts to reduce usage, including simply collecting data on which drugs are going to which animals. Unfortunately, the prospects for more effective federal policy on animal antibiotic use have dimmed recently as the Trump Administration has pledged to cut regulations indiscriminately,¹² and proposed drastic funding cuts for federal programs that address antibiotic resistance, including reducing by almost a third the budget of FDA’s Center for Veterinary Medicine, the agency with primary responsibility over antibiotics in agriculture.¹³

Fortunately, communities around the country are mounting efforts to combat antibiotic use in food production. From local school boards to state legislatures, public health and consumer advocates are promoting policies to reduce the amount of antibiotics entering the food supply. Two states—California and Maryland—have already passed legislation to reduce antibiotics in agriculture, and many others appear likely to soon follow suit. San Francisco has just passed a far-reaching labeling and data collection ordinance, and many others municipalities have passed resolutions in support of better antibiotics policies. Several school districts and public medical and educational institutions now have fully implemented procurement policies that favor producers who use fewer antibiotics, and consumer awareness campaigns are helping individual consumers to harness the power of the marketplace to influence major food retailers. This report gives a brief survey of these initiatives, with the aim of giving advocates a roadmap to advance similar legislation and initiatives across the United States.

Federal Policy on Antibiotics in Animal Agriculture: Major Reforms Still Needed

The U.S. Food and Drug Administration (FDA) is the federal agency with primary responsibility for regulating animal use of antibiotics. Despite early warning signs, FDA has been slow to act. The agency first authorized the use of antibiotics in animal feed in the 1950s. In the early 1970s, FDA convened a taskforce to examine whether animal antibiotic use—“especially in growth promotant and subtherapeutic amounts”—contributed to antibiotic resistance in human infections. The taskforce found that it did, and in line with its recommendations, FDA proposed revoking its earlier authorizations of antibiotics in animal feed.¹⁴ Political opposition, however, squashed the proposal.¹⁵

In the decades to follow, FDA took some modest steps, such as withdrawing approval for use in poultry of fluoroquinolones—a group that includes drugs such as Cipro and Levaquin commonly prescribed in human medicine.¹⁶ Despite mounting evidence of animal agriculture’s ties to antibiotic resistance, however, the agency rejected calls to impose major restrictions on antibiotic use in farm animals. Meanwhile, countries in Europe and elsewhere ratcheted up their protections. After the entire European Union banned the use of antibiotics in animal feed for growth promotion in 2006,¹⁷ countries like Denmark and the Netherlands went even further, phasing out animal antibiotic use in the absence of disease and creating strong incentives for farmers to adopt best practices.¹⁸

In recent years, FDA implemented reforms to eliminate antibiotic use for growth promotion and to otherwise advance the “judicious use” of antibiotics in livestock. The essential components of FDA’s “judicious use” policy are referred to as Guidance #209 and Guidance #213. Published in 2010, Guidance #209 advises farmers to stop using antibiotics for growth promotion, and presents a framework for farmers to use medically important antibiotics only when necessary for animal health and with veterinary oversight.¹⁹ Published in 2013, Guidance #213 advises drug companies to voluntarily remove growth promotion labeling claims and to require veterinary oversight for all medically important antibiotics.²⁰

FDA’s “judicious use” initiatives are a step in the right direction. Insofar as pharmaceutical companies revise their drug labels as recommended, farmers cannot legally use medically important antibiotics for growth promotion, and they must seek out a veterinarian before using them for preventive or therapeutic uses. However, the initiatives’ reliance on voluntary compliance, expansive definition of “judicious use,” and permissive posture towards veterinary oversight raise serious concerns as to how much these actions will actually reduce antibiotic use in animal agriculture.

At first blush, reliance on voluntary compliance may not seem problematic. Nominally, pharmaceutical companies have complied with Guidance #213’s directives to remove growth promotion claims and require veterinary oversight.²¹ But nettlesome issues remain, including the persistence of some “preventive” label claims—e.g. maintenance of weight gain—that look a lot like growth promotion.²² Similarly, many drug labels continue to fail to define any duration of use. These labels are inconsistent with the “judicious use” principles outlined in FDA’s Guidance #209.²³ When FDA rolled out its initiative to reduce animal antibiotic use, public health advocates excoriated the Obama Administration for asking, rather than telling, industry to make changes. At the very least, they said, FDA should have outlined contingency measures to apply in the event that industry failed to voluntarily comply.²⁴ Now, the persistence of drug labels at odds with FDA recommendations points to the limitations of a voluntary approach.

FDA’s broad definition of “judicious use” also raises concerns. Even assuming that pharmaceutical companies voluntarily rescind labeling indications like “maintenance of weight gain” and “control of early mortality” that would seem to conflict with FDA’s standard, a broad range of other “disease prevention” uses are expressly permitted. Guidance #209, for example, refers to animal transport as a grounds for “preventively treating” with antibiotics that “would be considered a judicious use.” This “prevention”

loophole signifies that most antibiotic use in animal agriculture will be allowed to continue unfettered. Indeed, FDA itself has estimated that now prohibited “growth promotion” has only ever accounted for around 10-15% of animal antibiotic sales.²⁵

Finally, while requiring veterinary oversight will undoubtedly help to address some instances of overuse, FDA has “no policies or tools in place to monitor and track how well veterinarians oversee or prescribe the use of these antibiotics in livestock production.”²⁶ Many antibiotics administered to livestock are overseen by veterinarians employed by large meat processors, whose incentives to address the root causes of problems requiring antibiotic interventions may be weak.²⁷ Other veterinarians that insist on actually examining animals or visiting farms to verify whether a given prescription is necessary may find themselves undercut by less fastidious peers.

Fortunately, we know what federal policy reforms are needed to reduce food animals’ contribution to antibiotic resistance in humans. Widespread consensus among public health authorities has emerged in favor of common sense policies like collecting reliable data on actual animal antibiotic use, improving pathogen surveillance capabilities, improving veterinary oversight, phasing out routine use, and restricting therapeutic uses of antibiotics deemed “critically important” to human medicine by the World Health Organization.²⁸

These policies have already succeeded in reducing animal antibiotic use and its contribution to the resistance crisis in other industrialized countries. For now, however, the absence of federal leadership on antibiotic resistance is generating heightened interest in state and local efforts to tackle the problem.



Leaving the Feds Behind: Curbing Animal Antibiotic Use with State and Local Legislation

Given the inadequacies in existing federal policy, and no sign that major reforms are forthcoming, state and local actions to reduce animal antibiotic use is critical. Fortunately, advocates across the country are finding ways around the federal government to influence how antibiotics are used in livestock production. These range from state laws, to municipal resolutions, to procurement policies at public institutions, to publicity campaigns to sway individual consumers. The policy reforms achieved thus far have helped to transform large parts of the animal agriculture industry, and they provide a model for similar actions in neighboring jurisdictions. A recent California state law, in particular, offers hope that necessary large-scale reforms may take place despite a lack of federal action.

State Legislation: The Californication of Antibiotic Policy?

State legislation may represent the most promising means of tackling antibiotic resistance in the absence of effective federal action. State laws can create value by shaping animal agriculture practices within state lines, and by generating new data on the drivers of antibiotic use in livestock and the costs associated with reducing that use.

Two states, Maryland and California, have successfully passed laws that limit routine antibiotic use and require data collection, although the California law is much stronger. Passed in 2015, California's SB 27 goes beyond FDA guidance by prohibiting "a regular pattern" of antibiotic use as a "prophylaxis."²⁹ In other words, use for "disease prevention" is allowed, but only in extraordinary circumstances. The law provides another important supplement to FDA guidance by requiring the California Department of Food and Agriculture to collect data on the sales and uses of medically important antibiotics from livestock producers in the state. As noted above, the limited data that federal agencies currently collect on animal antibiotic use frustrates efforts to understand the drivers of antibiotic overuse.³⁰ California boasts the third largest livestock industry in the country, and the sales and use data that authorities collect there under SB 27 will go a long way towards remedying that problem. Critically, that data will also show whether state officials and farmers are interpreting terms like "regular pattern" in a meaningful way that drives down use. The law also directs state officials to work with veterinarians and producers to provide stewardship guidelines and best management practices.

California's SB 27 will not go into full effect until January 1, 2018, but at least one state has already followed with legislation to reduce animal antibiotic use. In May 2017, Maryland passed Senate Bill 422; Keep Antibiotics Effective Act (SB 422).³¹ The Act contains language similar to that of California's SB 27 barring veterinarians from prescribing medically important antibiotics "for prophylaxis . . . in a regular pattern."³² However, while earlier versions of the law contained data collection provisions similar to those found in SB 27, the law that eventually passed omitted any mandate for Maryland state officials to collect information that would enable them to assess the law's effectiveness. Instead, SB 422 directs state officials to rely on "publicly available data from certain federal agencies and other appropriate entities," sources that offer little indication of how antibiotics are currently being used, or how that use may change once the Maryland law takes effect in January of 2018.

While Maryland's law falls short of the standard set by California, proposed state legislation in many other states could go even further. In Oregon, legislators introduced Senate Bill 785, Relating to Protecting Antibiotics for Human Health, Declaring an Emergency in February 2017.³³ The Oregon State Public Interest Research Group and other public health advocates, many of whom played a key role in getting the Maryland and California laws passed, suffered a narrow defeat in the most recent legislative session.³⁴ Should it eventually succeed, however, the Oregon legislation would add important protections to the California model.

In addition to language similar to the California legislation that restricts the use of medically important antibiotics in food producing animals, it sets the stage for a robust data collection system, specifying that feeding operations would have to file an annual report disclosing any medically important drugs prescribed, along with information on the species and number of animals treated, the types and amounts of drugs used, the dosage administered, and the treatment's purpose.³⁵ The law would also provide a safeguard against ongoing, preventive uses by requiring a specified end date for all antibiotic prescriptions.

In other states, persistent legislators are continuing longstanding efforts to champion antibiotics reform. Pennsylvania state Senator Daylin Leach reintroduced Senate Bill 246; the Safe Families and Safe Food Act,³⁶ legislation first proposed in 2007. The bill would prohibit the administration of an enumerated list of antibiotics for “nontherapeutic” purposes. Restricted drugs would include Penicillin, Tetracycline, Erythromycin, Lincomycin, Bacitracin, and Virginiamycin, as well as others designated by state health



officials. Agricultural operations would have to file affidavits to demonstrate compliance, and report on the types and volumes of antibiotics used. State officials would compile this information into a public available annual report, and conduct regular inspections and testing to verify compliance. Currently, this bill is still pending review with the Department of Agriculture and Rural Affairs.³⁷

In North Carolina, Representative Pricey Harrison this year reintroduced a bill to study the use of antibiotics in food-producing animals in the state. House Bill 722: Hog Lagoon Sunset/Livestock

Treatment, would not restrict animal antibiotic use. Rather, it would require state public health officials to examine the supply chain of antibiotic use in livestock in the state and make a determination of which sources—e.g. antibiotic manufacturer, producer, feed mill or farm operator—can provide the best estimate of types, amounts and reasons for antibiotic use. The bill further directs state officials to conduct a survey in the three counties with highest density of hog, poultry, dairy and beef operations, and to examine trends over the last decade of antibiotic resistance in livestock production.³⁸

In New York, Assemblyman Brian Kavanagh this year reintroduced AB 8575, “an Act to amend the agriculture and markets law, in relation to non-therapeutic use of antimicrobial agents in animals.”³⁹ The bill would prohibit use of antibiotics in animals for “routine disease prevention, or other routine purpose.” Even more significantly, it would ban the sale or transport within New York of any food product from animals that received non-therapeutic use of antimicrobials. This approach, reaching out to producers beyond state borders, has led to widespread changes in other policy contexts, particularly animal welfare.⁴⁰

In recent years, legislation in Minnesota,⁴¹ New Jersey,⁴² and West Virginia⁴³ has been proposed to reduce animal antibiotic use, and the list of state laws filling the gaps left by federal policy seems poised to grow. In 2018, California’s success in implementing its law, and the lessons gleaned from the data gathered by state authorities there, could serve as a catalyst for policymakers to revive past proposals, and to explore new ways of reducing animal antibiotic use through state legislation.

Municipal Legislation: Resolutions and Beyond

Municipal governments also have an important role to play in combatting antibiotic resistance. On October 3, 2017, the San Francisco Board of Supervisors passed an innovative regulatory proposal, Ordinance 170763, that will require the city's large grocers, with 25 or more outlets worldwide, to submit reports to city officials on suppliers' use of antibiotics, including the average number of days of antibiotic use per animal, the percentage of animals treated with antibiotics, and the different purposes for which antibiotics are used.⁴⁴ This first-of-a-kind legislation would affect some 122 stores in San Francisco—including Safeway, Walgreens, CVS, Grocery Outlet, Whole Foods and Bristol Farms—and their suppliers around the world.⁴⁵

The ordinance seeks to advance the principle that families and consumers have the right to know how antibiotics are used in the productions of the foods they buy. Toward that end, the law would direct city officials to post information collected from stores on the city's website. Such disclosures would have far-reaching implications, making available data on animal antibiotic use that until now has not been collected, or even recorded, in a consistent manner.⁴⁶ Indeed, critics of the ordinance have complained that the “vast majority” of producers affected by the ordinance would not know “whether their products will be sold in” San Francisco, but will nonetheless face new “recordkeeping obligations.”⁴⁷

As of this writing, San Francisco's ambitious Ordinance 170763 remains in a class of its own. Municipalities across the country, however, may soon follow suit. Indeed, from Seattle, WA to Santa Fe, NM to Arlington, VA, cities across the country have already passed resolutions in support of national and state wide legislation restricting animal antibiotic use. These resolutions focus on influencing the legislative process by raising awareness and demonstrating to elected officials that there is widespread support for change. Food & Water Watch, a non-profit focused on governmental and corporate accountability, has succeeded in passing at least 51 such city resolutions, providing templates, sample language and guides for building governmental support.⁴⁸

Most of the resolutions explain the threat of antibiotic resistance, the economic cost to society of not addressing the overuse in livestock production, the loopholes that the FDA guidance provides and the need for legislation to address these issues. Below is sample language from New Jersey Districts 18 (Middlesex) and 35 (Bergen and Passaic) resolution.

This resolution expresses support for the national ban of non-therapeutic uses of antibiotics in livestock. The development of antibiotics has provided life-saving remedies for many common ailments, but the indiscriminate utilization of these antibiotics for non-therapeutic uses in livestock is decreasing the efficacy of antibiotics and creating a tremendous health crisis.⁴⁹

Resolutions can act as important stepping stones, shoring up support for state legislation like the laws that passed in California and Maryland, and providing a foundation for further concrete municipal actions, such as San Francisco's new labeling law, or reforms to procurement policies.

The Power of Procurement: Leveraging Institutional Purchasing Power

Procurement describes how institutions find and acquire goods and services for use at their facilities. Local governments, as well as schools, hospitals, and other public institutions, typically engage in procurement through a bidding process to purchase food items. In recent years, many public institutions have implemented value based standards to prioritize bids on factors beyond price.⁵⁰ For example, many institutions use local procurement policies to prioritize locally produced goods and labor.⁵¹

Increasingly, procurement policies are prioritizing a vendor's capacity to supply meat and poultry raised without antibiotics, or raised with fewer antibiotics.⁵² Procurement is a powerful tool because it leverages public institutions' collective spending power to change the food system from the inside out.⁵³ By purchasing from producers who do not use antibiotics, or are certified as using them responsibly, cities, schools, hospitals and other public institutions are influencing industry to shift production practices in a way that ensures antibiotics are used less frequently.⁵⁴

City Wide Procurement and Value Based Purchasing

City departments often command large food budgets. Procurement rules that create incentives for reduced antibiotic use can exert a strong influence on producers to adjust their practices. This strategy is relatively new. One of the first major citywide procurement initiatives targeting antibiotic use emerged in Los Angeles in 2012. Since then, however, local leaders around the country have adopted similar practices. Cities adopting the L.A. model alone now account for 2.2 million meals per day.⁵⁵

Procurement programs are complex, and L.A.'s experience illustrates some of the hurdles that advocates and elected leaders must overcome to enlist public food budgets in the fight against antibiotic resistance. Years before Mayor Antonio Villaraigosa issued Executive Directive No. 24, establishing the city's "Good Food Purchasing Policy" for all city departments with annual food purchases greater than \$10,000, the city created a Food Policy Task Force that brought together labor, environmental, and animal welfare advocates with local farmers, processors and distributors.⁵⁶ The Los Angeles Food Policy Council grew out of these efforts, and developed the **Good Food Purchasing Program** that now guides L.A.'s and several other cities' food procurement decisions.⁵⁷

Five core values—developing local economies, maintaining nutrition, supporting a valued workforce, promoting environmental sustainability, and protecting animal welfare—drive food purchasing decisions under the Good Food Purchasing Program. The program uses a point scale to first establish a baseline for a city departments food purchases, and then to measure progress. Executive Directive No. 24 establishes a goal of all departments achieving full compliance within five years, and maintaining baseline performance is a requirement for continued participation in the Good Food Purchasing program,⁵⁸ as is scoring at least one point in each value category.

By buying meat and poultry raised without antibiotics, L.A. city departments receive a higher score in both the Environmental Sustainability and Animal Welfare categories. However, purchases can comply with the guidelines in other ways. They may opt instead to make "hormone-free" dairy or cage-free egg purchases, for example. In other cases, a department's vendor may not have the capacity to meet purchasing goals, but the department can earn a point if the vendor submits a plan for achieving compliance in the following year. This flexibility has made the Good Food Purchasing Program attractive to other cities, and its success in promoting better animal antibiotic use policies may attest to the feasibility of alternative production practices.⁵⁹ As of this writing, the Good Food Purchasing Program has spread to Austin, Chicago, Cincinnati, Oakland, San Francisco, and Minneapolis-Saint Paul.

Not all local government attempts to shape the food system through procurement policy have succeeded. In 2006, officials in Woodbury County, Iowa passed a set of policies aimed at reviving the local agricultural

economy, which included a mandate for county procurement officers to purchase local, organic food, when available and price competitive.⁶⁰ The initiative received a great deal of fanfare, and was even the subject of a documentary in 2007.⁶¹ A few years later, however, the results proved underwhelming. A follow-up analysis identified various constraints, including a dearth of local producers willing or able to supply organic foods to the county, which led some parts of the plan to fail.⁶²

More commonly, many local (and state) governments enact procurement policies that favor local foods, but not foods made from animals raised without antibiotics.^{63 64} These policies may indirectly support reduced animal antibiotic use, depending on the local market, but they may also pose an obstacle to purchasing “no antibiotics ever” or CRAU products. In this respect, the Good Food Purchasing Program, as well as Food Policy Councils (discussed below) illustrate how stakeholders with sometimes disparate interests can band together for mutually beneficial policies.

School Food Procurement

School districts across the country are transforming their procurement policies to reduce animal antibiotic use, helping to preserve a future with antibiotics that work for their young clientele. One of the leading organizations in the field, School Food FOCUS, now works with nearly 8,000 schools in 45 districts to design and implement procurement policies that disfavor routine antibiotic use in chicken.⁶⁵ Another organization, Urban School Food Alliance, leverages the purchasing power of over 3.1 million students in just seven of the country’s largest school districts to create demand for “no antibiotics ever” and CRAU products. For smaller schools districts, organizations like the Alliance for a Healthier Generation⁶⁶ and the The Lunch Box⁶⁷ are helping local cooperatives to operate food purchasing groups that can increase schools’ buying power to obtain better products, including those that support reduced animal antibiotic use.

Not surprisingly, researchers have identified budget constraints as a major barrier to more widespread procurement from producers that use fewer antibiotics.⁶⁸ Schools and school districts must also navigate a web of state and federal regulations and competitive bidding requirements, and confront complicated distribution channels that may operate to the disadvantage of smaller vendors that supply more local or sustainable products.⁶⁹

Procurement changes can also implicate other areas of a school’s food service. For example, a 2013

study of factors influencing school officials’ purchase of poultry raised without antibiotics noted that “antibiotic-free poultry is at this time most affordable for schools in a raw or frozen-raw form,” and a majority of surveyed school districts “indicated they were not equipped to prepare raw poultry.”⁷⁰ While rapid changes in the poultry industry have gone a long way towards addressing this particular concern, the dynamic continues to hold true for many “raised without antibiotics” products, which are more likely to be sold in a less processed form and thus may entail higher labor costs in connection with their preparation.⁷¹



Purchasing Pioneers: Lessons from Leading School Districts

Fortunately, many school districts have identified strategies to overcome the barriers to sustainable procurement, and several non-profit organizations are helping others to learn from these experiences and build on them. Foremost among them is School Food FOCUS.

An early leader, School Food FOCUS began as a group of representatives from 17 school districts and officially launched in 2008 with funding from W.K. Kellogg Foundation.⁷² The organization has since spread to 25 states across the country.⁷³ FOCUS targets large school districts with 40,000 students or more. It helps schools to leverage their purchasing power with food producers, and assists with research on possible supply chains. It also works to ensure that producers and schools understand specific requirements, budget constraints and relevant procurement regulations.⁷⁴ The first district-wide transition supported by FOCUS was Saint Paul Public Schools (SPPS), which later successfully implemented a pilot project to serve chicken raised without antibiotics in 2010.⁷⁵ Since then, FOCUS has followed a similar model to help other large school districts, creating lists of priorities, analyzing monthly menus and determining where districts can replace items with more sustainable products, facilitating school meetings with vendors to discuss new criteria, drafting “Requests for Proposals” (RFPs), and finally, helping districts to categorize vendor responses based upon the new criteria.

In the course of their work, FOCUS leaders realized that school districts needed a more viable way to hold producers accountable and to put poultry raised without antibiotics on their menus.⁷⁶ So with help from the Pew Charitable Trusts, FOCUS developed the ***Certified Responsible Antibiotic Use Standard (CRAU)***,⁷⁷ which in May 2015 became the first responsible antibiotic standard for poultry certified by USDA. This standard is significant since chicken is the number one protein used in school meals nationwide.⁷⁸ The CRAU standard allows producers to give animals antibiotics only after animals have been diagnosed with a bacterial disease or exposed to infection, and a veterinarian has determined that the antibiotic is necessary to control the spread of the disease. CRAU does not allow farmers to give animals antibiotics for disease prevention, growth promotion, feed efficiency or weight gain. USDA verifies compliance with the CRAU standard through audits of each establishment, and keeps an official listing of approved CRAU programs, which are periodically updated and available to the public. Tyson was the first major company to enter the certification program and enlist a subset of its farmers to be audited by USDA.⁷⁹ More recently, companies including Cargill, Jeannie-O, Keystone Foods, Perdue and Mountaire Farms have joined the ranks.⁸⁰

CRAU has been widely adopted by another organization focusing on large school districts, the **Urban School Food Alliance (USFA)**. USFA brings together the New York City, Los Angeles, Chicago, Miami-Dade, Dallas, and Orange County (Fla.) and Broward County (Fla) school districts. Founded in 2012, it operates as a non-profit coalition that coordinates menu creation, bulk purchases and food services based on shared values. Seeking to promote nutritious, ecologically sound, economically viable and socially responsible food, the Alliance has become a major purchaser of chicken from CRAU certified sources. For example, Chicago Public Schools purchased 1.2 million pounds of “raised without antibiotics” drum sticks for 473 schools in 2013 alone.⁸¹

Resources for Smaller School Districts

While the procurement strategies of larger school districts have received more media attention, organizations like the Alliance for a Healthier Generation are working to help districts of all sizes change their food purchasing priorities. In partnership with the Urban School Food Alliance, the Alliance for a Healthier Generation assists schools in procuring CRAU and “raised without antibiotics” meat and poultry products.⁸²

More specifically, through its *Healthy Schools Program* the Alliance provides schools with tools for self-assessment of current school policies and how to improve them, resources to understand competitive procurement and its implications for school purchasing, methods of purchasing to increase buying power, and the Smart Food Planner to more easily locate affordable, healthful foods,⁸³ including specific brands of meat and poultry products that are “raised without antibiotics.”⁸⁴ In other words, the Alliance provides a reference guide for small districts wanting to alter their procurement plans to include products from animal raised without antibiotics independently.

Another organization that provides resources to districts of varying sizes is The Lunch Box. An offshoot project of the Chef Ann Foundation, its mission is to provide school communities with tools to create healthier lunchrooms.⁸⁵ It provides procurement resources to help schools transition their purchasing methods towards more sustainable, healthy and local foods, and it promotes purchase of CRAU certified poultry, providing tools for schools to incorporate that preference into their procurement policies. Other resources include menu development, product selection criteria, vendor relationship guides, food standard guides, and food cost projection worksheets.⁸⁶



Developing new procurement standards and organizing new vendor relationships can be both time consuming and challenging for schools. To reduce administrative costs while still increasing buying power, schools sometimes join or form **cooperative food purchasing groups**.⁸⁷ Urban School Food Alliance is a large scale example of such a cooperative, but smaller groups, particularly in rural areas, take advantage of this organization arrangement as well.⁸⁸ Cooperative food purchasing groups often achieve benefits such as access to greater variety and higher quality products, reduced labor costs, opportunities to make direct purchases

from manufacturers, and shared expertise on topics like menu planning. On the other hand, cooperatives pose a number of challenges as well, including the need achieve consensus among members, logistical hurdles such as coordinating larger and less frequent deliveries and replacing distributor services, and increased food cost. The National Food Service Management Institute’s handbook *Procurement in the 21st Century* is a useful resource for school authorities interested in exploring a cooperative arrangement with neighboring schools or districts.⁸⁹

Cooperatives are already helping to reduce the antibiotic footprint of school lunches in rural and suburban districts across the country. For example, the Pittsburg **Unified School District** in California partners with Antioch, Brentwood Mt. Diablo, and Oakley school districts to purchase local foods, including “no antibiotics ever” poultry from nearby producers.⁹⁰ Another cooperative, the **Northwest Buyers Alliance**, in the Pacific Northwest, combines the purchasing power of school districts as well as hospitals, colleges and universities, assisted living centers, correctional institutions, and corporate campuses in California, Oregon, Washington, Idaho, to jointly build menus and purchase from sustainable producers, including purveyors of meat and poultry that do not use antibiotics.⁹¹

Accessing the Goods: When Schools Connect with Food Hubs

Buying cooperatives often team up with local food hubs to help connect schools with local vendors, particularly where a school's procurement values include local sourcing. Food hubs serve as an aggregation point to which smaller, regional farms can deliver produce, meat and dairy, which is then distributed to institutional customers. Non-profit food hubs help school districts by serving as intermediaries, connecting schools to producers at little or no cost to the school. Food hubs assist schools in identifying producers, provide infrastructure such as warehouse space and refrigerated transport for delivery, and help to assure adequate food safety controls among producers.⁹²

Examples abound of food hubs working with schools to source sustainable produce and meat, including meat raised without antibiotics.⁹³ Cherry Capital Foods, based in Okemos, Michigan, is a typical example. It sells food to pre-schools, K-12, colleges and universities, and helps them connect with local farmers that produce meat without antibiotics.⁹⁴ Like most other food hubs, it aggregates product to meet school's larger volume needs, and provides storage and delivery to schools. It also regularly visits producers' farms to ensure that they are adhering to their certification requirements and accurately marketing their products.⁹⁵ On the east coast, The Common Market works in the mid-Atlantic and Georgia, connecting institutions to sustainable farms,⁹⁶ and on the west coast, FoodHUB helps schools connect to producers that raise livestock without antibiotics in California, Washington, Oregon, Idaho and Montana.⁹⁷ Links to more information about hundreds of other food hubs is available on USDA's "Local Food Hub Directory," which can be searched by product category, such as poultry or meat products, and geographic area.⁹⁸

Procurement in Higher Education

College campuses are also promoting responsible antibiotic use via their procurement policies. This can take the form of individual, school wide policies, or by subscribing to a purchasing pledge like that of The Real Food Challenge. Schools that have already initiated campus wide policies dedicated to "no antibiotics ever" meat include Yale University, University of Massachusetts, and the University of Washington.⁹⁹ At Yale, for example, the school's sustainability criteria reads: *Yale Dining is committed to serving hormone- and antibiotic-free and vegetarian fed beef and pork, antibiotic free chicken, and hormone- and antibiotic-free dairy products.*¹⁰⁰ Similarly, in 2015, UMass partnered with NatureRaised Farms to procure "no antibiotics ever" chicken in all their facilities.¹⁰¹

Because colleges face similar budget and procedural constraints to sustainable procurement as other institutions, some opt for a more gradual approach, pledging to dedicate a portion of purchases to "antibiotic free."¹⁰² **The Real Food Challenge** works with colleges and universities to develop and implement these pledges. The organization supports campaigns on college campuses around the United States with the goal of shifting \$1 billion of existing university food budgets towards local or community-based, fair, ecologically sound and humane food sources by 2020.¹⁰³ By signing the Real Food Campus Commitment, colleges and universities pledge to buy at least 20% "real food" annually by 2020. "Real food" adheres to several sustainability principles, including "nutritious feed free of non-therapeutic antibiotics and hormones."¹⁰⁴ Forty schools around the nation have dedicated at least 20-40% of their purchases to the Challenge, while University of California and California State (33 campuses) have pledged a system wide change. The Real Food Challenge provides a guide on its website on how to start a campaign at schools that have not yet pledged.¹⁰⁵

Hospital Procurement, the Medical Sector's Influence on the Food Market

Thus far, the bulk of the effort to control antibiotic resistance in the United States has focused on healthcare settings. Tellingly, the U.S. National Action Plan for Combating Antibiotic-Resistant Bacteria proposes numerical targets for reducing antibiotic use in human medicine, while omitting similarly concrete goals for reducing antibiotic use in livestock.¹⁰⁶ Healthcare providers have begun reducing antibiotic use in human medicine through sometimes sweeping changes in treatment protocols.¹⁰⁷ At the same time, however, a consensus has emerged around the need for a “One Health” strategy to combat antibiotic resistance, which recognizes the interconnectedness of the bacterial ecosystem and the role that animal agriculture plays in breeding resistance.¹⁰⁸ Attentive to this reality, and the costs of both changing care protocols and treating patients with resistant infections, many healthcare providers have turned their attention to antibiotics in agriculture.

Like cities and schools, medical facilities are leveraging their collective purchasing power to push producers towards more sustainable animal husbandry practices. In some cases, hospitals are teaming up to create a network of buyers or join campaigns that pledge to purchase meat and poultry from animals raised without antibiotics.¹⁰⁹ An influential organization in this sphere, working with hospitals and facilitating their procurement transitions, Health Care Without Harm (HCWH) has facilitated several major projects that encourage hospitals to purchase meat and poultry raised without routine antibiotics. Under HCWH's Healthy Food in Health Care program, hospitals participate in the *Less Meat, Better Meat* campaign, whereby they commit to purchasing 10% less meat per year and to increase purchases of meat raised without routine antibiotic by 5% each year, up to 20% overall.¹¹⁰ As the program's name suggests, hospitals save money by purchasing less meat, and invest those savings into purchase of meat raised without antibiotic.¹¹¹ HCWH



helps hospitals review menus to determine where certain meat purchases can be replaced with “no antibiotics ever” or CRAU products.¹¹² The challenge has led to dramatic changes in the food offered at many hospitals. For example, at Union Hospital of Cecil County in Elkton, Maryland, 60% of beef and 51% of poultry purchased in 2012 was produced without the routine use of antibiotics.¹¹³

Health Care Without Harm also works in partnership with **Practice Greenhealth**, another major player in hospital procurement, which assists hospitals committed to serving meat raised without antibiotics by helping them implement the *Less Meat, Better Meat* campaign.¹¹⁴ Practice

Greenhealth and Health Care Without Harm convene a joint working group called **Market Transformation Group**.¹¹⁵ That organization provides trainings and consultations to overcome procurement barriers hospitals face when transitioning to *Less Meat, Better Meat* policies.¹¹⁶ Market Transformation Group is exclusively for Practice Greenhealth member hospitals; however, they provide resources to non-members if contacted directly.

Currently, over 1,000 hospitals nationwide have committed to Health Care Without Harm and Practice Greenhealth programs.¹¹⁷ Participating hospitals gain access to a network of health care facilities and create regional meat alliances to help alleviate procurement barriers, such as supply chain challenges or budget restraints.¹¹⁸ For example, after encountering difficulties sourcing affordable meats from major suppliers like US Foods, University of California San Francisco Medical Center used Health Care Without Harm's network to connect with San Francisco General, UCLA, Stanford, Kaiser, John Muir Health, Washington Hospital and University of San Francisco hospitals. In 2013, the hospitals made a joint commitment to phase out meat raised with non-therapeutic antibiotics through their purchasing policies, and they began sourcing grass-fed beef raised without routine antibiotics from a supplier called Estancia beef. Soon after, in 2014, US Foods began carrying Estancia beef.¹¹⁹

These types of partnerships have allowed not only hospitals to access more sustainable products at lower costs, but also institutions like schools and correctional facilities, which are increasingly partnering with healthcare institutions on procurement. ProcureWorks, a joint initiative between Health Care Without Harm and School Food Focus, joins together six California school districts and eight California health care systems. Together, these entities control a collective food budget of \$100 million dollars.¹²⁰ Each member commits to incorporating value-based food guidelines into their procurement plans, and ProcureWorks helps to coordinate purchases of products like CRAU poultry.¹²¹ The North West Buyers Alliance, described above in the food hub section, operates a similar partnership – working between hospitals, schools, and correctional facilities to purchase local meats raised without antibiotics.¹²²

Conclusion

The prospect of a post-antibiotic future is perplexing, but solutions are emerging. Leaders across the country, from state legislatures to hospital boards of directors, are creating demand for better products and fostering awareness. As more people learn about how animal agriculture is contributing to antibiotic resistance, more opportunities for advocacy will arise. Already, industry is responding, with some of the largest poultry companies now phasing out all use of antibiotics in their operations. Credit for these changes is due in no small part to individual consumer demand. As described in the attached appendix, advocacy efforts have helped to convince private companies like McDonald's to purchase only chicken raised without antibiotics. More change is needed, however, and it will not come easy. Chickens are often alive just seven weeks before slaughter in modern industrial farming operations. Cattle and hogs live much longer, and raising them without antibiotics will entail more significant changes to prevailing industry models. Ultimately, both individual consumer demand and strong public policies are critical to an adequate response.

Appendix: How Personal Consumption Decisions Can Influence Animal Antibiotic Use

Advocates have tapped into the power of individual consumer demand, shining a light on restaurant, producer and grocer practices to help consumers channel their purchases away from businesses that support the overuse of antibiotics in animal agriculture. This appendix gives an overview of some of those efforts, with the goal of helping more consumers to demand meat, poultry and dairy products from animals raised without antibiotics, and to facilitate the transition of more food companies to antibiotic free practices.

Consumer pressure has already helped to usher in some dramatic transitions towards meat and poultry raised without antibiotics. Perdue, the fourth largest poultry producer in the country, recently adopted a “No Antibiotics Ever” protocol for all of its chickens.¹²³ Major restaurant chains, like Chick Fil A and Chipotle, have committed to buying meat and poultry from animals raised without antibiotics.¹²⁴ These changes are, in large part, due to increased consumer awareness and insistence. In 2009, consumers spent less than \$0.4 billion on poultry raised without antibiotics, but by 2013, this figure jumped to over \$1 billion.¹²⁵ The increase occurred in no small part due to organizational efforts to help consumers locate meat and poultry raised without antibiotics in grocery stores and restaurants. In particular, this appendix highlights two resources—*Chain Reaction* and *Crying Fowl*—that have helped consumers to focus their purchases.

Eating Out: Which Restaurants Support Responsible Antibiotic Use?

Since 2015, a collection of consumer and environmental advocacy groups—Natural Resources Defense Council, Friends of the Earth, Consumers Union, Food Animal Concerns Trust, and Center for Food Safety—have reviewed and rated 25 restaurant chains in the United States on their antibiotics use policies and practices, including an assessment of overall transparency in the restaurants’ meat and poultry supply chains. The groups publish their results each year in a report called *Chain Reaction*.¹²⁶

The *Chain Reaction* report assigns each restaurant a letter grade from A to F for meat and poultry antibiotic policies. One year after the first report issued, twice the number of companies rated received a passing grade. In the latest report, for 2017, more than half of the companies reported having taken steps to restrict the routine use of antibiotics in the production of the chicken they serve. The 2017 score card featured below provides a quick reference to help consumers make educated choices about the meat they eat and encourage large food chains to adjust their sourcing policies. Grade “A” is reserved for companies that have policies limiting routine antibiotic use across all meat categories, including poultry, beef and pork. Chipotle and Panera are the only two companies that received an “A.”¹²⁷ Six restaurants, all with strong antibiotics policies for chicken, received grades of “B+” to “C-”. Another six restaurants received a “D” grade for reasons that include having limited policies, lack of implementation, and insufficient auditing of suppliers to ensure compliance. The companies with “F” grades have either failed to adopt or to disclose effective antibiotics stewardship policies.

2017 Scorecard on Antibiotics Policies & Practices

A	 				
B+		B		B-	 
C+		C			
D+	 	D	   		
F	     				
	    				

Notably, no new commitments to limit antibiotic use in beef and pork were reported in the latest scorecard. This is partly due to the industry's production model. Since chickens have shorter life cycles, they have fewer chances to contract a disease or infection than cows or pigs.¹²⁸ A few companies have announced steps toward reducing antibiotic use in pork, beef and turkey production. For example, Tyson recently announced a new line of pork raised without antibiotics, and Cargill announced its intention to reduce the use of medically important antibiotics in beef by 20%.¹²⁹ For the foreseeable future, however, consumers are likely to find chicken products more accessible and affordable than other meats produced without antibiotics.

Shopping: Which Grocers Support Responsible Antibiotic Use?

In 2016, the Natural Resources Defense Council (NRDC) produced a report titled *Crying Fowl: Major Grocers Stumble in Promoting Antibiotic Stewardship* to study the antibiotic policies of the top five grocers in the country – Costco, Publix, Walmart, Albertsons/Safeway and Kroger.¹³⁰ These retailers represent more than 50 percent of the North American market.¹³¹ NRDC found that the five grocers lacked comprehensive antibiotic use policies and none publicly committed to eliminating routine antibiotic use.¹³² All five grocers, however, offered at least one brand choice that reflected responsible antibiotic use, and some offered many different choices. The NRDC study revealed that consumers sometimes find it difficult to identify products raised without antibiotics because of inadequate signage marking brands, producers and correlating policies. In response, to help consumers navigate the multiple brand options, NRDC's report provides a helpful snapshot of brand choices found on grocery store shelves, their labels, the supplier, and the antibiotic policy – whether it be conventional, raised without antibiotics, or certified organic.¹³³ Out of the five grocers, the report found that Walmart had the largest selection of chicken products sourced from producers using responsible antibiotic practices.¹³⁴ Walmart sources primarily from Perdue and Tyson, both of which have committed to phasing out routine antibiotic use in their chicken production.¹³⁵

Another retailer, Whole Foods, is not among the largest food retailers but nonetheless deserves attention for its leading role in sourcing sustainable meats. Whole Foods is the only major grocery chain that exclusively serves chicken, beef, swine and turkey raised without antibiotics.¹³⁶ The company uses the *Global Animal Partnership* (GAP) to certify that all of its producers meet baseline animal raising standards, and to indicate animal welfare ratings based on factors such as whether animals were pasture raised.¹³⁷ As a non-profit, third party certifier, GAP promotes animal welfare in part by certifying that farms do not use antibiotics.¹³⁸

Deciphering Meat Labels: What Does It All Really Mean?

Producers describe their antibiotic practices in a variety of ways. Consumers might notice “no growth promoting antibiotic,” “no antibiotics ever” or even “raised without medically important antibiotics” on meat or chicken. Each of these claims has a positive ring to them, but some end up being more reliable than others. For example, “natural” and “no growth promoting antibiotics” do not mean that the producer raised the animal without antibiotics. To help decipher these different standards, popular animal raising claims are explained below starting with the most reliable options.

Organic: (*Certified by USDA – Reliable*) According to USDA, if meat or poultry is labeled “organic” than it was raised without antibiotics. A USDA accredited third party certifier verifies whether the facility is abiding by “organic” regulations by inspecting the farm or feed lot requesting to use the label. To maintain the certification, the facility goes through annual reviews and inspection processes. So, this is a reliable label consumers can count on.¹³⁹



Raised without Antibiotics: (*Certified by USDA – Reliable*)

Producers use many terms like:

“antibiotic free,” “raised without antibiotics,” “no antibiotics ever” or even “no antibiotics administered” on meat or poultry. According to USDA, these labels mean no antibiotics were used during production.¹⁴⁰ To make any of these claims on labeling, producers must submit documentation to USDA that shows that animals were not given antibiotics, including a written description of how the animals are raised and the controls used to ensure that animals that receive antibiotics are segregated.¹⁴¹ This report avoids use of the term “antibiotic free” because in the past some producers have used it to mean simply that a product contains no detectable antibiotic residue, a longstanding requirement under federal law. As indicated, USDA has since clarified that such claims are misleading. Notably, “raised without antibiotics” and similar claims differ from “organic” labels because they do not require that a third party certifier inspects the production facility. Instead, claims are certified by an official review of the documentation submitted by the company, unless the label is accompanied by a “USDA Verified” shield or another third-party certifier, like Global Animal Partnership (GAP). For more detailed information on accredited third party certifiers, Food Animal Concern Trust (FACT) provides a “*Pocket Label Guide*” explaining the numerous certification programs and what they do.¹⁴²

No Medically Important Antibiotics: *(Not Certified by USDA – Less reliable)* This means the producer did not use antibiotics that are ranked as important for treating human illnesses, like amoxicillin or tetracycline, in production.¹⁴³ Other antibiotics, however, may have been used instead. So, consumers should not rely on this when trying to buy meat and poultry raised without antibiotics. Consumers might also see “no medically important drugs for growth promotion.” This label is used at Jack in the Box and Starbucks for example. But, this too does not mean antibiotics were eliminated. This label simply restates FDA “judicious use” regulations, which already disallow routine use for growth promotion.¹⁴⁴ Therefore, antibiotics could still be used routinely for disease prevention under this standard.¹⁴⁵

No Growth Promoting Antibiotics: *(Not Certified by USDA -- Less reliable)* Similar to above, this label only means that antibiotics were not used to “promote growth,” but producers can easily work around this by allowing antibiotics routinely for disease prevention.¹⁴⁶ Consumers should not rely on this label.

Natural: *(Not Defined or Certified by USDA, Meaningless When It Comes to Antibiotic Use in Meat)* USDA has only stated “natural” means the final product contains no artificial ingredients or added color and is only minimally processed. So, this label has nothing to do with antibiotics and should not be relied upon by consumers wanting to buy meat without antibiotics.¹⁴⁷

Endnotes

¹ World Economic Forum. “The Dangers of Hubris on Human Health,” (2013) <http://reports.weforum.org/global-risks-2013/view/risk-case-1/the-dangers-of-hubris-on-human-health/#/view/fig-18>

² CDC, Antibiotic Resistance Threats in the United States (2013) available at:

<https://www.cdc.gov/drugresistance/pdf/ar-threats-2013-508.pdf>. More recently, in 2016, one leading researcher called the CDC’s 2013 estimate, which in turn was based on 2011 data, “a gross underestimate” with the actual toll “probably twice that number.” Madlen Davies. “Superbugs killing twice as many people as government says,” *The Bureau of Investigative Journalism*, (Dec. 11, 2016) <https://www.thebureauinvestigates.com/stories/2016-12-11/superbugs-killing-twice-as-many-people-as-government-says> (quoting Ramanan Laxminarayan, director of the Center for Disease Dynamics, Economics & Policy).

³ See, e.g. Remarks of Tom Frieden, CDC Director (9/16/13),

https://www.cdc.gov/media/releases/2013/t0916_health-threats.html:

If we’re not careful, we will soon be in a post antibiotic era. And, in fact, for some patients and some microbes, we are already there. Losing effective treatment will not only undermine our ability to fight routine infections, but also have serious complications, serious implications, for people who have other medical problems. For example, things like joint replacements and organ transplants, cancer chemotherapy and diabetes treatment, treatment of rheumatoid arthritis. All of these are dependent on our ability to fight infections that may be exacerbated by the treatments of these conditions. And if we lose our antibiotics, we’ll lose the ability to do that effectively.

⁴ See, e.g., Food and Agriculture Organization of the United Nations. “Drivers, dynamics and epidemiology of antimicrobial resistance in animal production.” (2016), <http://www.fao.org/3/a-i6209e.pdf>, (“It is now accepted that increased antimicrobial resistance (AMR) in bacteria affecting humans and animals in recent decades is primarily influenced by an increase in usage of antimicrobials for a variety of purposes, including therapeutic and non-therapeutic uses in animal production.”).

⁵ Common ways resistant bacteria is spread is through water or fertilizer on crops, which are then transferred to food humans eat. Bacteria may also remain on meat, which if not handled or cooked properly can spread to humans. For a full list see: CDC, National Summary Data, *Cycle of Resistance Infographics*, p. 14 (2013) available at: <https://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf#page=14>.

⁶ Landers TF, Cohen B, Wittum TE, Larson EL. A review of antibiotic use in food animals: perspective, policy, and potential. *Public Health Rep* 2012;127:4-22, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3234384/>; Pew Charitable Trusts, *Antibiotic Use in Food Animals*, Antibiotic Resistance Project available at:

<http://www.pewtrusts.org/en/projects/antibiotic-resistance-project/about/antibiotic-use-in-food-animals>. This estimate is subject to some uncertainty because the animal agriculture and pharmaceutical industries have succeeded in blocking not only efforts to curb animal antibiotic use, but also to collect data on that use.

⁷ For the purpose of this report, routine, non-therapeutic antibiotic use means that producers give antibiotics to healthy animals in low doses over extended periods of time. Pew, Issue Brief, *Did You Know? Get the Facts on Antibiotic Resistance* (May 08, 2011). available at: <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2011/05/08/did-you-know-get-the-facts-on-antibiotic-resistance>

⁸ See, e.g., Elanco. *Antibiotics-The Basics*, [https://www.elanco.com/news/press-](https://www.elanco.com/news/press-releases/2016/casset_upload_file72588_111948_e.pdf)

[releases/2016/casset_upload_file72588_111948_e.pdf](https://www.elanco.com/news/press-releases/2016/casset_upload_file72588_111948_e.pdf) (“Why do we need antibiotics? . . . To improve production efficiency through a better balance of good and bad bacteria for improved nutrition.”).

⁹ Over 40 years ago, researchers demonstrated “a direct link between antibiotic use on farms and the spread of antibiotic resistance to human populations,” and in the decades since, numerous peer-reviewed studies have provided additional evidence of the spread of antibiotic-resistant microbes from livestock animals into the food supply or to humans.

Spellberg, B., G. R. Hansen, A. Kar, C. D. Cordova, L. B. Price, and J. R. Johnson. 2016. *Antibiotic resistance in humans and animals*. Discussion Paper, National Academy of Medicine, Washington, DC. [http://www.nam.edu/antibiotic-resistance-](http://www.nam.edu/antibiotic-resistance-in-humans-and-animals)

[in-humans-and-animals](http://www.nam.edu/antibiotic-resistance-in-humans-and-animals). Industry continues to respond to this research by calling for more evidence, and by funding studies designed to cast doubt on the linkages between agricultural antibiotic use and public health. See, e.g., Adam Croglia. “New Research Examining Link Between Antibiotic Use in Farm Animals and Antibiotic Resistance in Humans Leads to More Questions,” Aug. 10, 2016 [http://www.ahi.org/archives/2016/08/new-research-examining-link-](http://www.ahi.org/archives/2016/08/new-research-examining-link-antibiotic-use-farm-animals-antibiotic-resistance-humans-leads-questions/)

[antibiotic-use-farm-animals-antibiotic-resistance-humans-leads-questions/](http://www.ahi.org/archives/2016/08/new-research-examining-link-antibiotic-use-farm-animals-antibiotic-resistance-humans-leads-questions/) (reporting that a meta-analysis study by researchers at the Medical University of South Carolina, funded by the Animal Health Institute, an industry trade group, “found no conclusive evidence of a definitive link between use of antibiotics in food animals and emergence of drug-

resistant *Campylobacter*.”). Notably, the “team of interdisciplinary scientists” did not include an epidemiologist. See K.L. Helke, M.A. McCrackin, A. M. Galloway, A. Z. Poole, C. D. Salgado & B. P. Marriott. “Effects of antimicrobial use in agricultural animals on drug-resistant foodborne salmonellosis in humans: A systematic literature review,” *Critical Reviews in Food Science and Nutrition* Vol. 57, Iss. 3, 2017.

¹⁰ See Jennifer Pomeranz. *Food Law for Public Health*. (2016), pp.96-100.

¹¹ FDA. “FDA Annual Summary Report on Antimicrobials Sold or Distributed in 2015 for Use in Food-Producing Animals.” (Dec. 22, 2016), <https://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm534244.htm>

¹² See, e.g. Dan Farber. “Courts should kill Trump's pricey '2-for-1' deregulation order” (Feb. 9, 2017), <http://thehill.com/blogs/pundits-blog/the-administration/318725-courts-should-kill-trumps-pricey-2-for-1-deregulation>

¹³ See Organization letter to Chairs and Ranking Members of the Labor-HHS-Education, Agriculture, and State-Foreign Ops Appropriations Subcommittees re President’s Fiscal Year 2018 (FY18) budget (June 28, 2017) available at: http://www.idsociety.org/uploadedFiles/IDSA/Policy_and_Advocacy/Current_Topics_and_Issues/Federal_Funding/Related_Links/Sign%20On%20Letter%20to%20Appropriators%20on%20AR%20FY18%20Funding%20in%20PBR%20062717%281%29.pdf

¹⁴ See Tetracycline *154 (Chlortetracycline and Oxytetracycline)-Containing Premixes: Opportunity for Hearing, 42 Fed.Reg. 56264, 56266 (Oct. 21, 1977).

¹⁵ See *NRDC, Inc. v. United States FDA*, 760 F.3d 151, 154 (2d Cir. 2014) (describing “thinly veiled suggestions” of House Appropriations Committee to FDA).

¹⁶ FDA. “Animal Drugs, Feeds, and Related Products; Enrofloxacin for Poultry; Withdrawal of Approval of New Animal Drug Application.” 70 Fed. Reg. 44048 (Aug. 1, 2005).

¹⁷ Pomeranz, *supra* note 9 at 97.

¹⁸ See Expert Commission on Addressing the Contribution of Livestock to the Antibiotic Resistance Crisis. *Combating Antibiotic Resistance: A Policy Roadmap to Reduce Use of Medically Important Antibiotics in Livestock*. 2017. Washington, D.C., <http://battlesuperbugs.com/sites/battlesuperbugs.com/files/Final%20Report%208.25.17.pdf#page=9> [hereinafter “2017 Expert Commission Report”], Appendix E.

¹⁹ FDA, Guidance #209, The Judicious Use of Medically Important Drugs in Food Producing Animals (2012): <https://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM216936.pdf>

²⁰ FDA, Guidance #213, Recommendations for Drug Sponsors for Voluntary Aligning Product Use Conditions with GFI #209, (2013) available at: <https://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM299624.pdf>

²¹ FDA, Press Release, “FDA Announces Implementation of GFI #213, Outlines Continuing Efforts to Address Antimicrobial Resistance” (Jan. 3, 2017), <https://www.fda.gov/animalveterinary/newsevents/cvmupdates/ucm535154.htm>

²² Pew. Issue Brief. Judicious Animal Antibiotic Use Requires Drug Label Refinements. Analysis shows more than 1 in 3 labels will not fully meet judicious use standards after implementation of FDA policy (Oct. 4, 2016), <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/10/judicious-animal-antibiotic-use-requires-drug-label-refinements>. (“Of the 389 labels for medically important antibiotics . . . more than 140 labels do not fully meet FDA’s judicious use standards . . . [and] over 100 lack adequate restrictions on the duration of use, several labels do not specify a narrowly defined dosage, and 80 labels raise concerns about whether the specified indication is judicious.”).

²³ *Id.*

²⁴ See, e.g. Sarah Borron, *Pretty Please is not Enough; Why the FDA Should Ban Subtherapeutic Use of Antibiotics in Livestock*, Food and Water Watch (April 13, 2012) available at: <https://www.foodandwaterwatch.org/insight/pretty-please-not-enough-why-fda-should-ban-subtherapeutic-use-antibiotics-livestock>; Leslie Brueckner, *FDA Wimps Out on New Antibiotic Guidelines*, Public Justice, (December 31, 2013), available at: <https://www.publicjustice.net/fda-wimps-out-on-new-antibiotic-guidelines-risk-from-superbugs-continues/>

²⁵ Hoffman H. “New FDA “Rules” Not Likely to Reduce Antibiotic Use on Farm.” *Forbes* (Dec. 13, 2013); Flynn, William. Statement to a hearing of the Maryland General Assembly. November 2, 2015.

²⁶ 2017 Expert Commission Report, *supra* note 19.

²⁷ GAO. Antibiotic Resistance: Agencies Have Made Limited Progress Addressing Antibiotic Use in Animals, GAO-11-801. Washington, D.C.: Sept. 7, 2011. <http://www.gao.gov/new.items/d11801.pdf>

²⁸ 2017 Expert Commission Report, *supra* note 19.

²⁹ *Id.*

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- ³⁰ Qiuzhi Chang et al., *Antibiotics in Agriculture and the Risk to Human Health: How Worried Should We Be?*, Evolutionary Application, (March 2015) (showing the lack of measures requiring data collection or tracking antibiotic use by the FDA)
- ³¹ *Maryland Bill to Keep Antibiotics Effective Clears Panel*, US News, (March 15, 2017) available at: <https://www.usnews.com/news/best-states/maryland/articles/2017-03-15/maryland-bill-to-keep-antibiotics-effective-clears-panel>
- ³² Keep Antibiotics Effective Act of 2017, Maryland, S.B 422, Art. II § 17(c) (2017) available at: <http://mgaleg.maryland.gov/webmga/frmMain.aspx?pid=billpage&stab=01&id=sb0422&tab=subject3&ys=2017RS>
- ³³ S.B. 785, Oregon (2017) available at: <https://olis.leg.state.or.us/liz/2017R1/Downloads/MeasureDocument/SB785/Introduced>
- ³⁴ OSPIRG, News Release, *Oregon Lawmakers Fail to Advance Bill to Protect Antibiotics*, (April 18, 2017) available at: <http://www.ospirg.org/news/orp/oregon-lawmakers-fail-advance-bill-protect-antibiotics>
- ³⁵ *Id.*
- ³⁶ S.B. 246, Pennsylvania, No. 228 available at: <http://www.legis.state.pa.us/cfdocs/legis/PN/Public/btCheck.cfm?txtType=PDF&sessYr=2017&sessInd=0&billBody=S&billTyp=B&billNbr=0246&pn=0228>
- ³⁷ *Id.*
- ³⁸ Hog Lagoon Sunset/Livestock Treatment, North Carolina, H.B. 722 (Session 2017) available at: <http://www.ncleg.net/Sessions/2017/Bills/House/PDF/H722v1.pdf>
- ³⁹ An Act to amend the agriculture and markets law, in relation to non-therapeutic use of antimicrobial agents in animals, A08575 (July 10, 2017) available at: http://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A08575&term=&Summary=Y&Actions=Y&Text=Y
- ⁴⁰ Following California and Massachusetts legislation banning the sale of “cage-free” eggs, for example, the prevalence of conforming products nationwide has risen dramatically, with major private buyers like MacDonald’s and Walmart following suit. *See* Vanessa Wong. “Egg makers are freaked out by the cage-free future” (Mar. 22, 2017), <https://www.cnn.com/2017/03/22/egg-makers-are-freaked-out-by-the-cage-free-future.html> Indeed, the effectiveness of such state legislation in curbing corporate abuses has led industry allies to line up behind Republican sponsored legislation that would revoke state authority to regulate sales of these products, although critics, including the National Conference of State Legislatures, have argued that the proposed laws would violate the Tenth Amendment of the U.S. Constitution. *See* National Conference of State Legislatures letter to Congress re “No Regulation Without Representation Act of 2017,” H.R. 2887, (June 13, 2017), http://www.ncsl.org/documents/statefed/NRWR_Act_Letter_NCSL_6-13.pdf
- ⁴¹ HF 1766 (March 12, 2015), <https://www.revisor.mn.gov/bills/bill.php?b=House&f=HF1766&ssn=0&y=2015>
- ⁴² Concurrent Resolution No. 37 (2016 Session), ftp://www.njleg.state.nj.us/20162017/ACR/37_I1.HTM
- ⁴³ H. B. 2112 (Feb. 13, 2013), http://www.legis.state.wv.us/bill_status/bills_text.cfm?billdoc=hb2112%20intr.htm&yr=2013&sesstype=RS&i=2112
- ⁴⁴ San Francisco, California Ordinance No. 17063 (2017), available at: <https://sfgov.legistar.com/View.ashx?M=F&ID=5277851&GUID=D681B1A8-0AEE-4E75-B6DF-146E65AA00AF>
- ⁴⁵ Joshua Sabatini, SF orders big grocers to disclose antibiotics used in meat, *San Francisco Examiner* (Oct. 3, 2017), available at: <http://www.sfoxaminer.com/sf-orders-big-grocers-disclose-antibiotics-used-meat/>
- ⁴⁶ More information on the data gap is available in the federal and state policy sections of this report. See also Pew, Report, Alternatives to Antibiotics in Agriculture (July 10, 2017) available at: <http://www.pewtrusts.org/en/research-and-analysis/reports/2017/07/alternatives-to-antibiotics-in-animal-agriculture>
- ⁴⁷ North American Meat Institute letter to San Francisco Board of Supervisors re Ordinance 170763 (Sept. 26, 2017) available at: <https://sfgov.legistar.com/LegislationDetail.aspx?ID=3087433&GUID=8FC199AC-F2AC-4184-BC6E-6312CCF28314>
- ⁴⁸ Food & Water Watch, Organizing Tools, Campaign Toolkit, available at: <https://www.foodandwaterwatch.org/about/organizing-tools/campaign-toolkit>; *see also* Andy Hobbs. “Olympia joins national fight against antibiotic-resistant bacteria in the food supply,” (Feb. 12, 2015), <http://www.theolympian.com/news/local/article26108113.html>
- ⁴⁹ Assembly Concurrent Resolution No. 37, State of New Jersey, 217th Legislature, (Session 2016) available at: ftp://www.njleg.state.nj.us/20162017/ACR/37_I1.HTM
- ⁵⁰ School Nutrition Association, *Solving the Procurement Puzzle; Managing Complexities of Doing Business in K-12 School Food Service*, (2016) available at: http://schoolnutrition.org/uploadedFiles/Resources_and_Research/Operations/WhitePaper-SolvingtheProcurementPuzzle.pdf

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- ⁵¹ Johns Hopkins, Bloomberg School of Public Health, Food Systems Change through Procurement Policy Webinar (April 27, 2016), available at: <https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-a-livable-future/center-for-a-livable-future-videos/food-systems-change-through-procurement-policy>
- ⁵² School Food Focus, Procurement Change Tools, *A Better Chicken* (as one example, explaining the certified responsible use standard and how it is used to procure chicken raised without routine antibiotics in schools) available at: <http://www.schoolfoodfocus.org/procurement-change-tools/craua-better-chicken/>
- ⁵³ Collectively, Urban School Food Alliance commands a budget of \$592 million in food and food supplies. See Urban School Food Alliance Press Release, *Broward County Joins Urban School Food Alliance* (February 2017) available at <https://www.urbanschoolfoodalliance.org/broward-county-public-schools-joins-urban-school-food-alliance/>
- ⁵⁴ Perdue began a transition to antibiotic free in 2007 and Tyson followed in 2015. Pilgrim most recently adopted antibiotic free policies. See Jacob Bunge, *Tyson to Adopt New Standard on Antibiotics in Poultry*, The Wall Street Journal (May 7, 2015) available at <https://www.wsj.com/articles/tyson-to-adopt-new-standard-on-antibiotics-use-in-poultry-1431007546>; Dan Charles, *Perdue Goes (Almost) Antibiotic Free*, The Salt: NPR, (October 7, 2016) <http://www.npr.org/sections/thesalt/2016/10/07/497033243/perdue-goes-almost-antibiotic-free>; See also Perdue, *No Antibiotics Policy* available at: <https://www.perdue.com/perdue-way/no-antibiotics/>; Jacob Bunge, *Pilgrim Expects 25% of its Chicken Will be Antibiotic Free by 2019*, The Wall Street Journal (April 20, 2015), available at: <https://www.wsj.com/articles/pilgrims-expects-25-of-its-chicken-will-be-antibiotic-free-by-2019-1429564675>
- ⁵⁵ See The Good Food Purchasing Program, “Projected Good Food Purchasing demand in active cities,” <http://goodfoodpurchasing.org/> (last visited Oct. 1, 2017).
- ⁵⁶ The Good Food Purchasing Pledge. A Case Study Evaluation & Year One Progress Update (June 2014), http://goodfoodla.org/wp-content/uploads/2014/06/Good-Food-Purchasing-Policy_Final_0614.pdf
- ⁵⁷ The Los Angeles Food Policy Council, Programs and Policy available at: <http://goodfoodpurchasing.org/program-overview/>
- ⁵⁸ LA Executive Directive No. 24 available at: http://lbfresh.org/wordpress/wp-content/uploads/2014/09/Executive-Directive-No.-24-Good-Food-Purchasing-Policy_Final1.pdf
- ⁵⁹ See Howard Blume. “Chicken nearly disappeared from L.A. school lunches. Now, it's making a comeback.” *L.A. Times*, (April 13, 2017), <http://www.latimes.com/local/lanow/la-me-edu-healthier-school-chicken-20170315-story.html> (describing the L.A. school district’s negotiations with chicken processors to supply \$50 million of “antibiotic-free” chicken.).
- ⁶⁰ See Resolution Woodbury County Policy for Rural Economic Revitalization “Local Food Purchase Policy” available at: <https://tinyurl.com/y8lctubx>
- ⁶¹ Organic Consumers Association, “Food for the Future,” https://www.organicconsumers.org/old_articles/HouseParty/fff.php (last visited Oct. 1, 2017).
- ⁶² Kathryn J.A. Colasanti et al. *School District’s Interests and Challenges in Buying Chicken Raised Without Antibiotics*, Food and Nutrition Sciences Journal, Vol. 4 (August 2013) available at: http://file.scirp.org/pdf/FNS_2013092008335576.pdf
- ⁶³ See Amy S. Ackerman, *Buy Healthy, Buy Local: An Analysis of Potential Legal Challenges to State and Local Government Local Purchase Preferences*, 43 Urb. Law. 1015 (2011) (citing 24 state laws for the proposition that a “number of states have procurement laws or standards that give a purchasing preference for food or agricultural goods that are grown or produced in-state.”).
- ⁶⁴ See, e.g. Denning et al. “Laws to require purchase of locally grown food and constitutional limits on state and local government: Suggestions for policymakers and advocates” (April 2010), available at: <https://tinyurl.com/ybmyse3w> (citing various local government “local food” procurement policies).
- ⁶⁵ See School Food Focus member districts available at <http://www.schoolfoodfocus.org>.
- ⁶⁶ Alliance for a Healthier Generation; Smart Food Planner; Product List, available at: <https://foodplanner.healthiergeneration.org/products/10-0-oz-hvl-bf-abf-hot-dog-fc-fz-8ct-10lb/>
- ⁶⁷ The Chef Ann Foundation supports schools through various grant programs focused on school food change. Boulder Valley School District is one such district. See The Chef Ann Foundation, *Our Story*, available at: <http://www.chefannfoundation.org/>
- ⁶⁸ Kathryn J.A. Colasanti et al. *School District’s Interests and Challenges in Buying Chicken Raised Without Antibiotics*, Food and Nutrition Sciences Journal, Vol. 4 (August 2013) available at: http://file.scirp.org/pdf/FNS_2013092008335576.pdf
- ⁶⁹ School Food Focus. “Geographic Preference. A primer on purchasing fresh local food for schools.” (July 2013), https://fns-prod.azureedge.net/sites/default/files/FOCUS_GP_Primer.pdf
- ⁷⁰ Colasanti et al., *supra* note 70.
- ⁷¹ See, e.g. Tyson Foods, “Product Categories: Whole Grain Breaded Golden Crispy Patties, 3.54 oz.,” <http://www.tysonfoodservice.com/products/70304-928>.
- ⁷² School Food Focus, an NFGN Webinar, available at: <http://ngfn.org/resources/ngfn-cluster-calls/school-food-focus>
- ⁷³ School Food Focus; Member Districts and Schools available at: <http://www.schoolfoodfocus.org/>

⁷⁴ *Id.*

⁷⁵ http://www.schoolfoodfocus.org/wp-content/uploads/dlm_uploads/2016/05/Childhood-Obesity_A-Real-Chicken-Revolution_082012.pdf

⁷⁶ School Food Focus, *Certified Responsible Use Standard* (September 29, 2016) available at: http://www.schoolfoodfocus.org/wp-content/uploads/dlm_uploads/2016/05/CRAU-Rationale-and-Standard_FIN.pdf

⁷⁷ USDA, Agricultural Marketing Service, Certified Responsible Antibiotic Use; Auditing Requirements available at <https://www.ams.usda.gov/services/auditing/crau>

⁷⁸ Laura Stanley et al. *A Real Chicken Revolution; How Two Large Districts are Shifting the Poultry Paradigm with Scratch Cooking*, *Childhood Obesity* Vol. 8 No. 4 (August 2012) available at: http://www.schoolfoodfocus.org/wp-content/uploads/dlm_uploads/2016/05/Childhood-Obesity_A-Real-Chicken-Revolution_082012.pdf

⁷⁹ Pew, School Food Focus Announces Antibiotic Standard for Poultry, (May 07, 2015) available at: <http://www.pewtrusts.org/en/about/news-room/press-releases/2015/05/07/pew-school-food-focus-announce-antibiotic-standard-for-poultry>

⁸⁰ USDA Official Listing of Approved Responsible Antibiotic Use Programs available at: <https://www.ams.usda.gov/sites/default/files/media/Official%20Listing%20of%20Approved%20Certified%20Responsible%20Antibiotic%20Use%20FOCUS.pdf>

⁸¹ Healthy Schools Campaign, *Chicago Public Schools Commits to Serving No Antibiotic Ever Chicken*, (July 12, 2013) available at: <https://healthyschoolscampaign.org/chicago-focus/school-food/pathway-procurement-5942/#https://healthyschoolscampaign.org/news/pathways-to-excellence-in-school-nutrition>

⁸² Urban School Food Alliance, Partnership Announcement, The Urban School Food Alliance and Alliance for a Healthier Generation Leverage \$3 Billion in Purchasing Power for Market-Driven Change in School Meals, (October 21, 2015) available at: <https://www.urbanschoolfoodalliance.org/wp-content/uploads/2015/10/USFA-AHG-Announce-Partnership-Oct.-21.pdf>

⁸³ Alliance for a Healthier Generation, Procurement Tools, available at: https://www.healthiergeneration.org/take_action/schools/nutrition_services/procurement/

⁸⁴ Alliance for a Healthier Generation; Smart Food Planner; Product List, available at: <https://foodplanner.healthiergeneration.org/products/10-0-oz-hvl-bf-abf-hot-dog-fc-fz-8ct-10lb/>

⁸⁵ The Chef Ann Foundation supports schools through various grant programs focused on school food change. Boulder Valley School District is one such district. See The Chef Ann Foundation, *Our Story*, available at: <http://www.chefannfoundation.org/>

⁸⁶ The Lunch Box, Procurement Tools, available at: <http://www.thelunchbox.org/procurement/procurement-tools-resources/>

⁸⁷ *Procurement in the 21st Century*; National Food Service Management Institute, University of Mississippi (2013) available at: <http://www.nfsmi.org/documentlibraryfiles/PDF/20130820034348.pdf>

⁸⁸ Alliance for a Healthier Generation, *Power in Numbers; Group Purchasing for Healthier School Meals* available at: https://www.healthiergeneration.org/_asset/mf82gr/13-6263_GroupPurchSM.pdf

⁸⁹ *Procurement in the 21st Century*; National Food Service Management Institute, University of Mississippi (2013) available at: <http://www.nfsmi.org/documentlibraryfiles/PDF/20130820034348.pdf>

⁹⁰ Pittsburg Unified School District – Local Purchasing available at <http://childhoodobesity2015.com/docs/uploads/WS3-Linking%20Farms%20to%20Schools-MBelasco.pdf>; Mary's Chicken, Animal Welfare Requirements available at: <http://www.maryschickens.com/animalwelfare.htm>.

⁹¹ Food Hub, North West Buyers Alliance, available at: <https://food-hub.org/nwfbfa>; Chris Schreiner, *Inside the NW Food Buyer's Alliance*, Oregon Tilth (April 5, 2016) available at: <https://igt.tilth.org/inside-the-nw-food-buyers-alliance/>

⁹² See, e.g., Vermont Agency of Agriculture, Food and Markets; *Using Food Hubs to Create Sustainable Food to School Programs* (March 2013) available at: http://agriculture.vermont.gov/sites/ag/files/FoodHubs_FTSPProgram%20Guide.pdf

⁹³ Cherry Capital Foods; Farm to Cafeteria Program, available at: <http://cherrycapitalfoods.com/farmtocafeteria>

⁹⁴ Animal Welfare Approved Standards: Antibiotics (May 6, 2013) available at: <https://animalwelfareapproved.us/glossary/antibiotics/>

⁹⁵ Cherry Capital Foods, Protein Requirements, available at <http://cherrycapitalfoods.com/protein>

⁹⁶ The Common Market, <https://www.thecommonmarket.org/locations/the-common-market-mid-atlantic/food>

⁹⁷ FoodHub, <http://food-hub.org/home>

⁹⁸ USDA, Agricultural Marketing Service, Local Food Hub Directory, available at: <https://www.ams.usda.gov/local-food-directories/foodhubs>

⁹⁹ University of Washington, *The Whole U; Antibiotic Free Meats, What Are They and Why do They Matter?* available at: <https://www.washington.edu/wholeu/2014/06/02/antibiotic-free-meats/>

-
- ¹⁰⁰ Yale University, Hospitality, *Sustainability is a Core Value For Yale Hospitality*, available at: <http://hospitality.yale.edu/sustainability-core-value-yale-dining>
- ¹⁰¹ Mike Bulzaka, *U-Mass Commits to all Antibiotic Free Chicken*, Food Management (August 13, 2015) available at: <http://www.food-management.com/news-trends/umass-commits-all-antibiotic-free-chicken>; see also, NatureRaised Farms, *Our Products; No Antibiotics Ever*, available at <http://www.natureraisedfarms.com/our-products>.
- ¹⁰² Emily Leib et al. *Increasing Local Food Procurement by Massachusetts State Colleges and Universities*, Harvard Food Law and Policy Clinic, (October 2012) available at: <http://www.farmtoinstitution.org/sites/default/files/imce/uploads/Increasing-Local-Food-Procurement-by-Mass-State-Colleges.pdf>
- ¹⁰³ Real Food Challenge, *Our Vision*, available at <http://www.realfoodchallenge.org/about-real-food-challenge>
- ¹⁰⁴ The Real Food Standards Package; Real Food Standards 2.0, available at <http://realfoodchallenge.org/sites/default/files/TheRealFoodStandardsPackage.pdf>
- ¹⁰⁵ *Id.*
- ¹⁰⁶ 2017 Expert Commission Report, *supra* note 19.
- ¹⁰⁷ Many antibiotics are prescribed unnecessarily (for example for the flu or cold). Medical facilities have been working to decrease unnecessary prescriptions in hospitals and outpatient settings. See Pew, Fact Sheet, *Unnecessary Antibiotic Use and Patient Safety, The Role of Antibiotic Stewardship*, (January 28, 2016) available at: <http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2016/01/unnecessary-antibiotic-use-and-patient-safety-the-role-of-antibiotic-stewardship>
- ¹⁰⁸ OIE. One Health at a Glance. <http://www.oie.int/en/for-the-media/onehealth/>.
- ¹⁰⁹ Healthier Hospitals, A Practice Greenhealth Program, available at: <http://healthierhospitals.org/hhi-challenges/healthier-food>
- ¹¹⁰ See Health Care Without Harm, *Antibiotics in Animal Agriculture, Purchasing*, available at: <https://noharm-uscanada.org/content/us-canada/purchasing>
- ¹¹¹ To do so, they provide a reference guide called *Balanced Menus* which lays out several approaches to increasing sustainable meat consumption. Health Care Without Harm, *Balanced Menus Booklet*, available at: https://noharm-uscanada.org/sites/default/files/documents-files/469/BalancedMenus_Hybrid_R8_Booklet_hiRes.pdf
- ¹¹² Hospitals can sign up at healthyfoodinhealthcare.org. See also Health Care Without Harm, *Less Meat, Better Meat* available at: <https://noharm-uscanada.org/content/us-canada/less-meat-better-meat>
- ¹¹³ Hospitals following this program pledge to buy meats produced without non-therapeutic antibiotics, meaning the animal are not given antibiotics unless diagnosed with a disease. Health Care Without Harm, *Healthy Food in Health Care Pledge*, available at: <https://noharm-uscanada.org/content/us-canada/healthy-food-health-care-pledge>. See also Union Hospital of Cecil County; A Healthiest Maryland Business Success Story (2013) available at: https://health.maryland.gov/healthiest/Shared%20Documents/Healthier%20Foods%20the%20Local%20Way_Union%20Hospital.pdf
- ¹¹⁴ Practice Greenhealth titles its program the Healthy Hospitals Initiative, available at: <http://healthierhospitals.org/hhi-challenges/healthier-food>
- ¹¹⁵ Practice Green Health, *The Market Transformation Group Overview* (members can contact jhoward@practicegreenhealth.org) available at: <https://practicegreenhealth.org/topics/epp/market-transformation-group>
- ¹¹⁶ *Id.*
- ¹¹⁷ Health Care Without Harm, “Antibiotics in Animal Agriculture,” <https://noharm-uscanada.org/issues/us-canada/antibiotics-animal-agriculture>
- ¹¹⁸ Deborah Fleischer, *Collaborating to Support Sustainable Food Practices* University of California San Francisco, UCSF Sustainability Stories (September 2014) available at: <http://sustainability.ucsf.edu/1.498>
- ¹¹⁹ See Sapna Thottathil et al, *Hospitals Say No to Meat Raised With Antibiotics*, Civil Eats (May 20, 2013) available at: <http://civileats.com/2013/05/20/hospitals-say-no-to-meat-raised-with-antibiotics/>
- ¹²⁰ School Food Focus, ProCureWorks, program information available at: <http://www.schoolfoodfocus.org/procureworks/>. Interested parties can contact Courtney Crenshaw, the CA Regional Procurement & Engagement Coordinator with questions, available at: <https://noharm-uscanada.org/procureworks>
- ¹²¹ ProCureWorks, 2017 Guidelines for Food Products, available at: <https://noharm-uscanada.org/sites/default/files/documents-files/4666/PCW-FoodGuidelines-Interactive.pdf>
- ¹²² Food Hub, North West Buyers Alliance, available at: <https://food-hub.org/nwfb>; Chris Schreiner, *Inside the NW Food Buyer's Alliance*, Oregon Tilth (April 5, 2016) available at: <https://igt.tilth.org/inside-the-nw-food-buyers-alliance/>
- ¹²³ Perdue Farms, “Commitments to Animals Care 2017 Highlights Report,” <http://www.perdufarm.com/responsibility/animal-care/2017-highlights-report/>
- ¹²⁴ Chipotle, Mexican Grill, Antibiotic Policy; Saying No to Antibiotics, available at: <https://www.chipotle.com/food-with-integrity#saying-no-to-drugs>

-
- ¹²⁵ David Kesmodel, *More Companies Go Antibiotic Free as More Consumers Demand It*, The Wall Street Journal (November 3, 2014) <https://www.wsj.com/articles/meat-companies-go-antibiotics-free-as-more-consumers-demand-it-1415071802>
- ¹²⁶ Friends of the Earth. Chain Reaction III: The Report, <https://foe.org/projects/food-and-technology/good-food-healthy-planet/chain-reaction/>
- ¹²⁷ *Id.*
- ¹²⁸ To bring a chicken to market weight takes less than two months. NPR, The Salt, What's on Your Plate: American's Want Antibiotic-Free Chicken and the Industry Is Listening (February 19, 2014) available at: <http://www.npr.org/sections/thesalt/2014/02/14/276976353/americans-want-antibiotic-free-chicken-and-the-industry-is-listening>
- ¹²⁹ Tyson Fresh Meats, Open Prairie Natural Pork (No antibiotics ever policy) available at: <http://www.tysonfreshmeats.com/branded-pork/open-prairie-natural-pork>; Cargill, Cargill Eliminates 20% of Shared-Class Antibiotics Used for Beef Cattle (March 8, 2016) available at: <https://www.cargill.com/news/releases/2016/NA31934263.jsp>
- ¹³⁰ NRDC Issue Paper: Crying Fowl: Major Grocers Stumble in Promoting Antibiotic Stewardship in Retail Chicken, (May 2017) available at: <https://www.nrdc.org/sites/default/files/antibiotic-stewardship-retail-chicken-ip.pdf>
- ¹³¹ National Retail Federation, "Top Retailers 2016," (2016) available at: <https://nrf.com/resources/annual-retailer-lists/top-100-retailers/stores-top-retailers-2016>
- ¹³² *Id.*
- ¹³³ *Supra* 151, to access the complete table for each store visit: <https://www.nrdc.org/sites/default/files/antibiotic-stewardship-retail-chicken-ip.pdf>
- ¹³⁴ *Supra* 152
- ¹³⁵ Perdue Farms, "Antibiotics Position Statement," 2016, available at: <https://www.perdufarm.com/news/statements/antibiotics-position-statement/>; Tyson Foods, Inc., "Antibiotic Use," 2016, <http://www.tysonfoods.com/Media/Position-Statements/Antibiotic-Use.aspx>.
- ¹³⁶ "Our Meat: No Antibiotics Ever" Whole Foods blog post, June 25, 2012, <http://www.wholefoodsmarket.com/blog/whole-story/our-meat-no-antibiotics-ever-0>.
- ¹³⁷ Whole Foods Market, Meat Department, "Animal Welfare," August 2012, <http://www.wholefoodsmarket.com/sites/default/files/media/Global/PDFs/5-step-meat-brochure.pdf>.
- ¹³⁸ Food Animal Concerns Trust, Examining Food Labels, *Food Labels F'ACT Recommends*, available at: <https://foodanimalconcernstrust.org/food-labels/>
- ¹³⁹ USDA Organic Livestock Requirements, available at: <https://www.ams.usda.gov/grades-standards/organic-standards>
- ¹⁴⁰ Food Safety Inspection Service, Labelling Guide on Documentation Needed To Substantiate Animal Raising Claims for Label Submissions (September 2016) available at: <https://www.fsis.usda.gov/wps/wcm/connect/6fe3cd56-6809-4239-b7a2-bccb82a30588/RaisingClaims.pdf?MOD=AJPERES>
- ¹⁴¹ *Id.* This includes ionophores which are recognized by FSIS as antibiotics. Ionophores (such as monensin, lasalocid, laidlomycin, salinomycin and narasin) are antimicrobial compounds that are commonly fed to animals to improve feed efficiency. See T.R. Callaway, *Ionophores: Their Uses as Ruminant Growth Promotants and the Impact on Food Safety*, Current Issues, Microbiology, USDA, (2003) available at: <https://pubag.nal.usda.gov/pubag/downloadPDF.xhtml?pid=15061&content=PDF>
- ¹⁴² Food Animal Concerns Trust, *Pocket Guide to Humane Food Labels*, available at: <https://static1.squarespace.com/static/57d30c09893fc08d22e87aaf/t/5919ebb2b8a79b2d6666f9c8/1494870964946/Pocket+guide+to+labels+5.15.2017.pdf>
- ¹⁴³ Trisha Calvo, *What those "No Antibiotic Claims Really Mean,"* Consumer Reports (April 12, 2017) available at: <https://www.consumerreports.org/overuse-of-antibiotics/what-no-antibiotic-claims-really-mean/>; USDA provides a list of medically important antibiotics in Appendix A of Guidance #152, Evaluating the Safety of Antimicrobial New Animal Drugs with Regard to Their Microbiological Effects on Bacteria of Human Health Concern, (2003), available at: <https://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM052519.pdf>
- ¹⁴⁴ *Supra* 10, See Federal Level Action section above, which explains how judicious use principles encourage all drug companies and production facilities to stop using antibiotics for growth promotion purposes.
- ¹⁴⁵ *Id.*
- ¹⁴⁶ *Id.* For more detailed information on antibiotic labels check out: Consumer Reports (*Supra* 146), Environmental Working Group *Meat Eaters Guide to Decoding Meat and Dairy Labels* available at: <http://www.ewg.org/meateatersguide/decoding-meat-dairy-product-labels/#antibioticspecific>; See also, George Washington University's Milken Institute of Public Health Antibiotic Resistance Action Center, Reel Talk with Dr. Lance Price, *Understanding Food Labels*, available at: <https://vimeo.com/154763722>

¹⁴⁷ USDA, Meat and Poultry Labeling Terms, available at: <https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/meat-and-poultry-labeling-terms/meat-and-poultry-labeling-terms/>