

18-06

STATEMENT OF POLICY

Concentrated Animal Feeding Operations

Policy

The National Association of County and City Health Officials (NACCHO) advises federal, state, and local governments and related agencies to continue research initiatives and enact legislation to manage the human and environmental health risks of concentrated animal feeding operations (CAFOs).

NACCHO supports the following:

- Advancing local, state, and national policies to address CAFO-related pollution (e.g., air, ground water, surface water, and land); particularly those that prevent, mitigate, or eliminate burdens that disproportionately affect the health of vulnerable populations.
- Limiting the use of medically important antimicrobials by CAFO owners.
- Amending the Clean Air Act to regulate CAFO emissions within nationwide emission standards.
- Creating incentives at the local, state, and national levels for CAFO owners to implement measures that mitigate the risk posed by large volumes of manure.¹
- Funding research and developing metrics to identify and monitor the adverse impacts CAFOs present to the local community.
- Encouraging national cooperation among federal, state, local, and tribal governments to freely share data and analyses regarding the public health exposure risk of CAFOs.
- Promulgating regulations to mitigate impacts of CAFO operations on greenhouse gas emissions and reduce risks of severe weather related to climate change.

Justification

The U.S. Environmental Protection Agency (EPA) defines concentrated animal feeding operations as "an AFO [Animal Feeding Operation] with more than 1,000 animal units [...] confined on site for more than 45 days during the year."² Just under 20,000 AFOs (approximately 10%) meet CAFO criteria.² The large number of CAFOs is partially attributed to a consumer demand for larger stocks and lower costs of animal products, incentivizing farmers to increase animal yields on smaller plots of land. CAFOs are regulated under the Clean Water Act (CWA) and require, in most cases, obtaining a National Pollutant Discharge Elimination System (NPDES) permit, which limits what pollutants (i.e., manure) from a point source (i.e., CAFO) can be discharged into the U.S. water system and includes monitoring and reporting requirements.³ NPDES permits also require the adoption of a nutrient management plan to manage the timely and regulated discharge of waste onto a field so as to not release excess pollutants.⁴ While all operations may have a chance to discharge water, only those that "discharge or propose to discharge" require the NPDES permit,⁵ potentially offering a loophole for some operations to escape local permitting powers and avoid abiding by regulatory guidelines. Despite scientific research examining concentrations of air pollutants due to CAFOs, there is no federal regulation to monitor or mitigate air pollutants coming from said operations. In December 2017, then-EPA Administrator Scott Pruitt



announced that CAFOs would not be regulated under the Clean Air Act (CAA) because air quality indicators are heavily influenced by external factors and one national aggregate was an unreliable measure.⁶⁻⁷

CAFOs generate a large amount of waste byproducts (i.e., manure) in addition to meat and dairy products for human consumption. The annual byproducts of the farming industry, as determined by the U.S. Department of Agriculture (USDA), equal 335 million tons of dry matter waste.⁸ While manure is a valuable fertilizer in the farming industry, the quantities produced on CAFOs can quickly surpass demand. When excess manure is stored in lagoons or pits, it decomposes in the absence of oxygen, which intensifies methane production, a potent greenhouse gas, and contributes to climate change. Further, CAFO manure contains various contaminants, including plant nutrients, pathogens, growth hormones, antibiotics, animal blood, and other chemicals. Livestock waste is not processed by sewage treatment plants like human waste. Instead, CAFO waste is collected and stored until it can be used as fertilizer (e.g., liquefied to spray onto fields), trucked off-site, or treated. Under current EPA regulation, CAFO waste lagoons and lots are regulated under the CWA as a point-source pollutant.² However, should a storm surge wash through a CAFO waste site, there are no permit regulations in place to hold the facility liable because it is then excluded from the definition of a “point source.”⁵ Other regulatory gaps, including a lack of co-permits for farms contracted by larger corporations and third-party waste management, may jeopardize the health of communities. Once the waste is transferred, CWA regulations on CAFO waste management cease to apply.⁹

Research has begun to link CAFO byproducts to increased public health and environmental health risks, yet there likely remain additional indicators to identify and measure to ensure public safety. The waste produced on CAFOs is known for contaminating nearby water systems through fecal matter deposits and adding excess nutrients that harm the aquatic ecosystem.¹⁰ CAFO manure storage and processing practices further endanger neighboring communities due to the pollutants they release into the air—particulate matter, ammonia, hydrogen sulfide, methane, and nitrates—all of which have been shown to adversely impact human health, in varying concentrations.¹¹ In addition to calculable pollutant concentrations, CAFOs impact the livability of an area due to the intense odor disbursement. Prolonged exposures to such odors have shown a correlation to headaches, depression, and neurophysical abnormalities.¹² Climate change is likely to lead to increased storm events that can cause loss of containment of manure, animal mortalities, and other sources of pollution, leading to negative health impacts to communities hosting CAFO operations, detailed below.¹³

A 2007 literature review compiled results from the previous decade and found that there were increased rates of respiratory illness in individuals who lived near CAFOs compared to those who lived further from an operation.¹² These increased rates of respiratory diseases (e.g., asthma) are more common in vulnerable populations. For example, a study conducted in Iowa of 565 children revealed an increased prevalence of asthma in children with a larger relative environmental exposure to AFOs.¹³ Wind patterns can affect the spread of air pollutants from CAFO sites. One study monitored emissions and dispersions from a dairy manure application site and concluded that there are increased likelihoods of bioaerosols downwind from farms, which can carry increased risk of gastrointestinal infection.¹⁴

Historically, CAFOs have also jeopardized human health through excessive antibiotic use.¹⁵ (See NACCHO policy statement [Antimicrobials in Animals](#)) This norm has since been addressed through the Veterinary Feed Directive (VFD)—a measure put forth by the Food and Drug Administration (FDA) to combat excessive antibiotic use in farm animals. The VFD requires veterinary oversight when prescribing “medically important” antibiotics (antibiotics deemed important to human health).¹⁶ However, the VFD does not completely eliminate the allotment of all antibiotics from regular use. Antibiotics not used in humans, or “non-medically important,” may still be used for therapeutic and production purposes sans veterinary approval—namely bacitracin, carbadox, bambarmycin, ionophores, and tiamulin.¹⁷ Though not used in humans, the aforementioned antibiotics may still impact human health, prompting a greater need for research. For example, emergent studies have found that carbadox can harm the swine gut-microbiome and introduce drug-resistant microbes into

humans;¹⁸ it is banned in the European Union and Australia for being a potential carcinogen. The degradation of the human microbiome is only one medium by which CAFOs can impact health.

Modern animal husbandry innovations like CAFOs have also led to the spread of infectious diseases and pathogens that are able to take advantage of concentrated animal populations.¹⁵ Several factors contribute to this: the high concentration of animals increases the likelihood of rapid disease transmission throughout the population;¹¹ and the increased use of antibiotics contributes to the rise in drug-resistant bacteria. A regulated antibiotic regimen implemented by CAFOs can facilitate drug-resistant microbes that can go undetected before spreading to other animals or humans—including *Staphylococcus aureus* CC398 (a strain of MRSA).¹⁹ The impacts of the drug-resistant microbes are emboldened by the fact that high levels of antibiotics are also being ingested by humans which erode at the body's natural gut microbiome by killing off effective defense mechanisms. In 2013, the Centers for Disease Control and Prevention reported that the pervasion of antimicrobial resistance is the direct cause of 2 million serious infections every year in the United States.²⁰ (See NACCHO policy statement [Antimicrobial Stewardship and Resistance](#)) These 2 million infections, in turn, yield 23,000 deaths—the magnitude of which is compounded by the high complexity of combatting drug-resistant infections and the high cost of treatment.

The health risks of CAFOs are often felt disproportionately by already burdened communities. CAFOs are often established in low-income areas to capitalize on vulnerable municipalities by boasting economic incentives, but the economic benefits of CAFOs do not expunge the health risk burden placed on communities.²¹ A 2014 report cross-referenced census data with CAFO locations and determined that the proportion of people of color living within three miles of an industrial hog operation was 1.52 times greater than their white counterparts.²² CAFOs consolidate jobs—offering fewer employment opportunities than typical family-owned and operated farms—and put stress on public resources without adequately contributing to local economies. In the United States, two of the top five meat producing companies that contract with local farmers are from Brazil and China.²³ As such, the economic benefits of domestic production are outsourced and collected by foreign entities. These environmental justice issues will continue to persist and much of the adverse health impacts imposed by CAFOs will be dealt with by disenfranchised populations in rural communities.

The issues posed are not limited to poor, rural communities; damaging byproducts of CAFOs can be seen migrating into affluent and urban areas. Studies of the farming industry have shown crowding of animals in poorly ventilated and stressful environments facilitates the spread of zoonotic diseases.²⁴ The consequential biological processes leave the animals with an increased risk of exposure to disease agents and pathogens that will harm their health and increase the risk of exposure to other animals in the facility—as well as farm staff and neighboring communities. The risks are mitigated by systems currently in place designed to combat outbreaks including ventilation and hygiene best practices. However, with larger populations in a concentrated area, harm-reduction practices can be counteracted and a virulent disease strain can spread with ease as compared to a traditional, pasture farming system. Local health departments are on the front lines responding to public health threats, including CAFOs. Policies to regulate CAFOs and CAFO waste are critical to empower health departments to protect their communities from CAFO related illness, disease, and injury.

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Record of Action

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