

# Intensive livestock production and meat processing: The workers' fight for protection against antimicrobial resistance

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Although antimicrobial-resistant pathogens permeate the food chain and are an acknowledged risk to the health of consumers, it is rarely acknowledged that antimicrobial resistance (AMR) is also a major occupational health and safety risk affecting workers producing and processing food for consumption.

Workers on farms and in slaughtering houses are at high risk of exposure to multidrug-resistant superbugs. Contamination of these workers can then become a source of AMR infections in communities and in hospitals. Food chain contamination concerns everyone. This is why protection of meat and farm workers is essential as an integral part of protecting populations from AMR by national authorities.

The intensification of animal production and the intensification of work have combined to create the antimicrobial resistance (AMR) pathogen occupational hazard, but worker health and safety has almost been completely ignored in the global fight to contain AMR. Notably, occupational health and safety agencies around the world have yet to define diseases caused by pathogen exposures in agriculture, slaughter and processing plants as being work-related. AMR pathogens have been recognized as an occupational health hazard in healthcare settings for several decades and steps have been taken to protect healthcare workers from infection with varying degrees of success.

Employers, trade unions and regulators must get active in advocating for recognition of the hazard in the food chain and for measures that effectively manage the risk and ensure that workers are covered for the consequences, including medical treatment and lost earnings.

## The contaminated workplace

Much of the use of antibiotics in food animal production is considered inappropriate and a major cause of AMR in diseases which can infect humans.

Using less than the amount of antibiotics needed to kill microbes (sub-therapeutic) for the purpose of growth promotion or the routine application for the prevention of disease in intensive livestock, aquaculture and poultry raising, has contributed to the emergence of multidrug-resistant

pathogens in the food chain. As a result, drug-resistant bacteria are present from farm to table. Workers on farms and in slaughtering houses are at high risk of exposure to multidrug-resistant superbugs.

Infections can be caused by cuts or abrasions on farms and in slaughter and processing plants, and by breathing contaminated

air in confined spaces where animals and birds are raised. Workers may carry these dangerous microbes home to family and community. The consequences for workers and their families are significant and can result in ongoing morbidity or mortality. In many cases, the only effective treatment for a worker who contracts an antibiotic-resistant infection is to stop working in the contaminated workplace.

Workers are often blamed for spreading infection through sickness, unwashed hands, open cuts and contaminated clothing. However, exposure and spread is more likely to be due to an unsafe and unsanitary working environment. While regular handwashing and prompt attention to cuts and lacerations is important, blame should not be directed at the perceived lack of personal hygiene in an environment of unsanitary working conditions. In meat and poultry processing plants there are seldom enough bathroom and shower facilities,



access can be restricted and there is little time allocated for personal hygiene. It is generally the workplace that contaminates the worker, not the worker who contaminates the workplace.

In 2016, Professor Ellen Silbergeld wrote the authoritative and accessible, *Chickenizing Farms and Food - How Industrial Meat Production Endangers Workers, Animals and Consumers* (1), which describes the way in which AMR has infected the entire food chain. She moves beyond an analysis of the risk to consumers to describe the occupational health hazard posed by antimicrobial pathogen contamination.

Professor Silbergeld writes an account of her participation in the first epidemiological study in the United States on pathogen exposures among workers in animal slaughter and processing. The study was conducted at the world's largest pig slaughter and processing plant at Tar Heel, North Carolina, where 32,000 pigs are processed every day. Silbergeld was able to conduct her study at the plant in cooperation with the unionized workforce represented by the United Food and Commercial Workers Union (UFCW) Local 1208.

She found that workers were slaughtering and processing meat in an unprotected workplace and that the critical control points established by the HACCP (Hazard Assessment and Critical Control Point) system were ineffective in preventing exposure to zoonotic pathogens. Workers were routinely exposed to pathogens without medical surveillance and then carried these pathogens on their work clothing into often crowded living conditions to spread disease (1).

Noting the institutional and regulatory blindness over more than a century, Silbergeld states that one of the goals of her book is to re-establish the connections between the safety of food and the health and safety of workers in food animal production: what is unsafe for the worker is unsafe for our food and what is unsafe for food is unsafe for the workers" (2). She recalls Upton Sinclair's comment following the publication of his novel, *The Jungle*, a fictional but accurate exposé of the terrible conditions of worker health and safety in slaughter and processing plants in Chicago at the turn of the twentieth century; he "aimed at the public's heart and by accident hit its stomach" (3). The rapid passage of legislation on food safety that followed was prompted by public concern for self, while ignoring the abysmal plight of the worker. To this day, there is little concern from the public or regulators about the state of worker health and safety in animal production. The neglect is callous and is also an impediment in overcoming AMR.

### Health and safety systems

Sustained efforts should be made to contain this serious occupational health hazard and minimize its potential impact

on worker health through local practices, supported and mandated by targeted policy and legislation.

#### *Local health and safety practices*

The availability and appropriate use of personal protective equipment, changes in work processes and the reduction in line speeds in meat and poultry processing plants are among the measures that can reduce the risk of AMR infections. Behaviour Based Safety (BBS) models, favoured by many employers are an attempt to shift risk and avoid responsibility and are a further impediment to controlling the AMR pathogen hazard and protecting workers from infection. Such models focus on worker behaviour and while protective clothing and personal hygiene can reduce the risk, the hazard remains. Good health and safety systems that have strong worker participation in learning and sharing knowledge and include workers' rights to negotiate over the safety of the work, are likely to be more effective.

#### *The legislative and policy framework*

When designing a system to protect workers' health, good prevention strategies are necessary, but the primary objective in fighting for a safe workplace is to remove the hazard. The IUF strongly supports the demand for governments to ban sub-therapeutic use of antibiotics in livestock and poultry rearing. Such drugs should only be used sparingly on sick individual animals under the direct supervision of a veterinarian.

The regulatory framework is not completely lacking. The International Labour Organization (ILO) has adopted international conventions on safety and health which are relevant for the fight against AMR in workplaces. Occupational Safety and Health Convention 155 requires employers to ensure that, so far as is reasonably practicable, the workplaces, machinery, equipment and processes under their control are safe and without risk to health. Furthermore, the chemical, physical and biological substances and agents under employers' control should be without risk to health when the appropriate measures of protection are taken. Adequate protective clothing and protective equipment should be provided (4).

The ILO has also provided guidance for national governments to address occupational health hazards, such as AMR pathogens. Promotional Framework for Occupational Safety and Health Convention 187 calls on each Member State to promote a safe and healthy working environment by formulating a national policy in consultation with representative organizations of employers and workers. Such policy shall promote basic principles, such as assessing occupational risks or hazards; combating occupational risks or hazards at source; and developing a national preventative

safety and health culture that includes information, consultation and training (5).

National policy should contribute to the protection of workers by eliminating or minimizing, so far as is reasonably practicable, work-related hazards and risks, in accordance with national law and practice, in order to prevent occupational injuries, diseases and deaths and promote safety and health in the workplace (6).

The first step in compliance with ILO Safety and Health Conventions is for regulatory agencies in each country to recognize antimicrobial-resistant pathogens as a work-related disease that requires access to appropriate medical care and protection of earnings. However, recognition is not enough. Workers must be equipped with the knowledge, confidence and power to protect themselves and to join the fight to overcome global AMR. At the workplace level, active management of the AMR risk is required. Full workforce participation in designing health and safety systems and eliminating and managing hazards is fulfilled in conjunction with workers' ability to access their right to freedom of association.

In recognition of the inherent power imbalance in the workplace, the UN Special Rapporteur on hazardous substances and wastes, Baskut Tuncak, proposed 15 principles (7) intended to help governments, businesses and others respect and protect workers from toxic exposures in and around the workplace and to provide remedies for violations of their rights. He found that protection from exposure to hazardous substances is inextricably linked to the rights to freedom of association and collective bargaining.

"The rights to information, participation and freedom of expression and association, as well as the rights to unionize and collective bargaining, enable the prevention of violations and abuses of human rights arising from toxic exposures of workers. Furthermore, the full realization of the right to information is necessary to realize the right of workers to an effective remedy for the adverse impacts of such exposures".

The rights to information, participation and freedom of expression and association equally apply to workers who may be exposed to AMR pathogens.

We cannot protect the integrity of the food we eat without enabling the protection of the workers who produce it. The right of workers to freely join unions of their choosing enables participation in and negotiation for strong health and safety systems which include provisions for diagnosis and treatment of occupational diseases.

### A guide to immediate action in the workplace

Enterprises should use health and safety experts in conjunction with elected health and safety representatives and committees

to assess the risk of AMR pathogens in workplaces. Any risk requires the adoption of best management practices to protect workers:

- ➔ Workers must be encouraged to notify management and their union promptly of all cuts and lacerations which must be treated and covered to prevent further risk of infection.
- ➔ Workers' outer clothing should be washed at a temperature of at least 70 degrees Celsius after every shift and through a laundry service.
- ➔ Personal protective equipment should not only be provided but it should also be regularly inspected and workers must be appropriately trained in its use during paid working time.
- ➔ Workers and their families should be regularly screened by appropriate health personnel for drug-resistant diseases and any necessary treatment should be at the expense of the employer or state agency responsible for work-related illnesses.
- ➔ Governments need to make notification to regulatory agencies compulsory when AMR pathogens are discovered in processing plants and on farms.
- ➔ General training should be provided to industry workers on bacterial infections and AMR diseases so that workers can help protect themselves and all who eat the food they produce.

Some measures to reduce risk are specific to intensive livestock farms where mass doses of antibiotics are still routinely administered. Before leaving the farm, boots should be cleaned and disinfected and any shoe covers disposed of. Work clothes should be removed and laundered as described above. Clean clothes to wear after work should be kept in an enclosed space. Workers should shower before changing and going home and they should pay particular attention to hand washing, followed by the use of a sanitizer.

Personal items such as mobile phones, should not be placed in livestock or poultry raising areas.

Handwashing and showering should apply also in meat and poultry processing plants and in these environments excessive line speeds contribute to lacerations and increased risk of AMR infections. Processors must improve their ability to keep surfaces clean of contaminated matter – blood and other animal fluids. Contaminated sharp tools and edges and animal bones can all infect the worker. The HACCP approach to pathogen control cannot be relied upon as it does not identify all points of contamination.

### Conclusion

The time for appropriate recognition by governments and their

regulatory agencies of the hazard of exposure of food workers to AMR pathogens is long overdue.

ILO Conventions provide guidance to governments, workers and employers in the establishment of health and safety systems which can monitor, minimize and protect against the hazard. The goal should be the eventual removal of the hazard by eliminating mass dosing of birds, fish and animals with antibiotics. The imperative to take action is to ensure the integrity of “farm to table” food supply and to minimize the prevalence of AMR in the community. Workers can most effectively fight AMR in the food chain in safe workplaces where their rights are observed and protected. ■

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Figure 1: Food workers can be at risk of contracting and spreading AMR



## References

1. Silbergeld, EK *Chickenizing Farms and Food How Industrial Meat Production Endangers Workers, Animals and Consumers* Johns Hopkins University Press Baltimore 2016
2. *Ibid* p185
3. *Ibid* p161
4. *Ibid* p164
5. ILO. Promotional Framework for Occupational Safety and Health Convention. Article 16
6. *Ibid* Article 3
7. *Ibid* Article 5
8. Report of the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes. Human Rights Council Thirty-ninth session 10–28 September 2018