

Supplementary Table 1. **Correct answers for survey questions on knowledge regarding antibiotic use**

Question	Correct response
C4. In which of the following circumstances do you most frequently use antibiotics for your chickens?	1. Therapeutic use
C5. Do you know if commercial feed pellets contain antibiotics?	2. Some types of commercial feed pellets contain antibiotics
C6.1. Antibiotics can treat all diseases in livestock.	2. False
C6.2. Antibiotics can be used to treat diseases caused by bacteria in both humans and animals.	1. True
C6.3. It is necessary to use antibiotics for disease prevention in livestock farming.	2. False
C6.4. It is necessary to use antibiotics to treat all diseases in livestock.	2. False
C6.5. It is necessary to use antibiotics to promote the growth of livestock.	2. False
C6.6. Antibiotics have no side-effects.	2. False
C6.7. It is necessary to use antibiotics for livestock according to a prescription and professional instructions.	1. True
C6.8. Antibiotics can be used for livestock based on personal experience or the advice of friends and relatives. Only when the livestock is seriously ill is it necessary to consult a veterinarian.	2. False
C6.9. It is necessary to increase the dose and frequency of antibiotic use if the chicken's condition does not improve.	2. False
C6.10. After treatment with antibiotics for a few days and the chicken flock looks healthier, the use of antibiotics can be stopped.	2. False
C6.11. Inappropriate use of antibiotics will be costly for the farmer/livestock raiser.	1. True
C6.12. Antibiotics can protect animals from all types of diseases.	2. False
C6.13. Using antibiotics for livestock will affect the effectiveness of antibiotic use in humans.	1. True

Supplementary Table 2. **Appropriate responses for survey questions on attitudes regarding antibiotic use**

Question	Appropriate response
D3. If you are currently using antibiotics on your farm, would you be willing to use a non-antibiotic product as a replacement?	4. Willing; 5. Strongly willing
D4.1. Antibiotics help prevent and treat diseases in humans and animals.	4. Agree; 5. Strongly agree
D4.2. Antibiotics can treat all diseases in animals/ livestock.	1. Strongly disagree; 2. Disagree
D4.3. Using antibiotics is necessary to improve livestock productivity/efficiency.	1. Strongly disagree; 2. Disagree

D4.4. Using antibiotics to treat diseases is important in livestock farming/animal husbandry.	4. Agree; 5. Strongly agree
D4.5. Using antibiotics to promote growth is important in livestock farming/animal husbandry.	1. Strongly disagree; 2. Disagree
D4.6. It is necessary to change the type of antibiotic immediately when the animal does not get better.	1. Strongly disagree; 2. Disagree
D4.7. In order for the chicken to recover faster, one can arbitrarily increase the antibiotic dosage.	1. Strongly disagree; 2. Disagree
D4.8. When antibiotics are used correctly, there is little risk of antibiotic resistance.	1. Strongly disagree; 2. Disagree
D4.9. The use of antibiotics for chickens requires consultation with a veterinarian/animal health worker.	4. Agree; 5. Strongly agree
D4.10. The use of antibiotics for chickens requires a prescription from a veterinarian/animal health worker.	4. Agree; 5. Strongly agree
D4.11. When an animal contracts a disease that cannot be treated with antibiotics, it is considered extremely dangerous.	4. Agree; 5. Strongly agree
D4.12. Stopping the use of antibiotics before selling chickens (for slaughter) is necessary.	4. Agree; 5. Strongly agree

Supplementary Table 3. **Appropriate responses to survey questions on practices regarding antibiotic use**

Question	Appropriate response
E1. In your current flock OR most recent batch, when did you use antibiotics for chickens in your farm?	2. Chickens are sick 6. Do not use → Go to E2
E1.1. In this case, who advised you on the choice and use of antibiotics?	5. Veterinary officers
E1.2. Before purchasing antibiotics, did you have a prescription or receive professional advice?	1. Yes → Go to E1.4
E1.4. Where did you buy the antibiotics afterwards?	1. From a veterinary pharmacy 2. From a pharmaceutical company salesperson 3. From a veterinarian
E1.6. How did you use antibiotics to the chickens that time?	Based on the Circular No.21/2019/TT- BNNPTNT Guiding a number of articles of the Law on Animal Husbandry regarding animal feed (Article 21)
E2. Where do you usually keep your antibiotics?	2. In the animal medicine cabinet
E3. Do you usually check the expiration before using it on chickens?	1. Yes
E4. What would you do if your antibiotic had expired?	1. Stop using
E5. How many days before sale do you stop using antibiotics for your chickens?	7–10 days
E6. When buying antibiotics, what factor do you consider most important?	1. Expiration date
E7. What do you do with leftover antibiotics?	2. Burning

E8. Do you keep any records to manage your farm's livestock operations?	1. Vaccination records 2. Number of animals in the herd 3. Breeding stock 4. Feed 5. Antibiotic use/injection 6. Disinfection/sterilization 7. Sales information
E13.1. Ask for advice from others before using antibiotics.	4. Agree; 5. Strongly agree
E13.2. Use antibiotics on livestock during seasonal changes.	1. Strongly disagree; 2. Disagree
E13.3. If the animal does not recover after 2 days of antibiotic treatment, the dose should be increased or the type of antibiotic changed.	1. Strongly disagree; 2. Disagree
E13.4. Use antibiotics on animals during the incubation period.	1. Strongly disagree; 2. Disagree
E13.5. Use antibiotics for animals during the final stage (broiler chickens)/egg-laying stage (laying hens).	1. Strongly disagree; 2. Disagree
E13.6. Use the remaining antibiotics to treat other sick animals later.	1. Strongly disagree; 2. Disagree

Supplementary Table 4. **Examples of participants' statements regarding knowledge, attitudes and practices of antibiotic use and management in chicken farming, Lau Thuong Commune, Viet Nam (N = 20)**

Domain	Quotes
Knowledge	
Perception that antibiotic use is unavoidable in poultry production	"It is almost impossible to raise poultry, especially chickens, without using antibiotics. Diseases occur frequently, making it difficult to maintain production without their use."
Attitudes	
Routine administration of vaccines and antibiotics and use of disinfectants for disease prevention	"After about a month of raising the chickens, I give them vaccinations and preventive treatments according to the veterinarian's instructions. I also give them medicine regularly to prevent disease, so they rarely get sick."
Frequent use of antibiotics and disinfectants even in the absence of confirmed illness	"I spray the coop once a month and buy antibiotics every month for the chickens. When they get sick, I go to the veterinary pharmacy and use whatever medicine they provide, as long as it seems effective."
Use of human medicines for poultry treatment	"When the chickens get sick, we sometimes use human medicines because we already have them at home. We give them electrolytes or other medicines, and they usually recover."

Domain	Quotes
Practices	
Purchasing antibiotics directly from veterinary pharmacies without veterinary consultation	“Chickens often get sick, so I go to the veterinary pharmacies and buy whatever medicine they recommend. I don't know the exact dosage; I just follow their instructions. Visiting a veterinarian takes too much time because I also have other farm work.”
Treating disease based on past experience or informal information sources	“When chickens have diarrhoea or breathing problems, I use the medicine I used before. I also read online about which medicines to use, so I don't need to ask anyone.”
Routine or seasonal use of antibiotics for disease prevention	“When winter comes, antibiotics must be used immediately; otherwise, the chickens develop respiratory disease. Even if the coop is clean, disease can still spread quickly.”
Inconsistent adherence to veterinary advice and lack of treatment records	“We sometimes follow the veterinarian's advice, but we also rely on our own experience. Sick chickens are separated and given medicine, but we do not keep records.”