

‘Crisis management of infectious diseases’

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1. Objective

This workshop aims to provide proxy experience of managing animal and zoonotic infectious diseases to veterinary students.

2. Methods

Participating students will play roles of stakeholders in the realistic situation of the affected countries by infectious diseases.

At the beginning, 15 minutes lecture will be provided to introduce several issues associated with the infectious disease control, and the rules of the role play game is explained to the students. In total nine participants are expected to join.

Several sets of card materials, including eight role cards and a game instruction card each, will be provided. A group can choose one topic. Students start their group works by self-introductions, and the role play game based on the information in the cards. The role person of veterinary epidemiologist, if included in the group, cannot mention his/her intension at the first 15 minutes. After the 30-minutes role play games, representatives of the group present about the group work. Finally difficulty and good crisis management will be discussed among all participants. The time schedule is shown in Table 1.

Table 1. Time schedule

Time	Activity
9:30-10:00	Short lecture by Prof. Makita
10:00-10:10	Explanation of the rule of role play game
10:10-10:20	Self-introduction
10:20-11:20	Crisis management game
11:20-11:30	Reporting from a group
11:30-12:00	Questions and discussions

Game A Instruction card (Colistin)

Game A: Instruction card (Colistin)

Description:

Colistin is an important antimicrobial called 'the last resort'. It is effective to many multi-drug resistant bacteria. However, in 2016, a **plasmid** which can transfer **colistin resistance genes** among bacteria was found.

Colistin has been used as growth promoter of pigs (mix very little amount of colistin in the pig feed everyday), and therapeutic drug for pigs (when pig has diarrhea, mix enough amount of colistin in feeds). Contribution of growth promoter in resistant bacteria selection is not well understood, but its therapeutic use surely selects the colistin resistant bacteria in intestines of pigs.

Pork can be contaminated with bacteria from pig intestine, and when humans ingest colistin resistant bacteria, the plasmid including colistin resistant gene can be transmitted to the other bacteria in the intestine of this person.

If this person has multi-drug resistant bacteria before receiving the plasmid, the multi-drug resistant bacteria will be resistant against colistin as well, and no antimicrobial can save him when he becomes sick.

How would you solve the problem?

Instruction:

1. Introduce your role to others (only your role)
2. Reading your 'situation', and play the role
3. Do not show your card to others

Game A: Role cards (Colistin)

Game A (Colistin): Role card 1 – **Ministry of Agriculture** -

***DO NOT SHOW THIS CARD TO OTHERS**

You are a person in charge for antimicrobial resistant control in livestock.

Your section approves pharmaceutical companies to sell antimicrobials.

You want to stop using colistin as a grow promoter, which is sold by feed companies.

You want to limit the use of colistin for clinical diarrhea by veterinarians.

Therefore, you requested the Food Safety Commission of the Cabinet Office for the risk assessment for using colistin to pigs, on human health.

You are monitoring colistin resistance in bacteria in pig feces.

Game A (Colistin): Role card 2 –**pig farmer**-

***DO NOT SHOW THIS CARD TO OTHERS**

You are a pig farmer.

You sell pigs to slaughterhouse when they reach enough body weight.

You want to sell pigs as faster (faster growth) as possible.

Use of colistin as a growth promoter can shorten the selling time, so more money you gain.

Piglets have diarrhea when they are weaning at 30% chance.

If you stop using colistin as growth promoter, more pigs may get diarrhea.

You cannot buy colistin if veterinarians prescribe for clinical purpose.

You can freely buy feeds including colistin as growth promoter from a feed company, unless Ministry of Agriculture stops its approval.

More pigs die if colistin is not used for diarrhea.

Game A (Colistin): Role card 3 –**veterinarian in a clinic-**

***DO NOT SHOW THIS CARD TO OTHERS**

You are a veterinarian working in a clinic.

You receive consultation fee from pig farmers to make a living.

You prescribe colistin when piglets have diarrhea and mix colistin in a feeding bucket in a pig farm.

Use of colistin as a growth promoter can shorten the selling time, so more money you gain.

Piglets have diarrhea when they are weaning at 30% chance.

If you stop using colistin as growth promoter, more pigs may get diarrhea.

More pigs die if colistin is not used for diarrhea.

Pig farmers rely on you, and they seek your opinion even on family issues such as choice of school or marriage of children.

Sometimes you are invited by the Ministry of Agriculture for his opinion on policy making.

Game A (Colistin): Role card 4 –**Feed company-**

***DO NOT SHOW THIS CARD TO OTHERS**

You work for a feed company.

Your company get money by selling feeds including colistin as a growth promoter.

Ministry of Agriculture approves feed containing colistin as a growth promoter.

Unless majority of pig farmers prefers feed without colistin, you do not want to stop selling the feed with colistin as a growth promoter.

If they produce pig feeds without colistin as a growth promoter, the company has to build the new system in their factory for the new feed production, which is very expensive.

As a feed company, reputation is important, so the company tries to follow the law set by the Ministry of Agriculture.

Game A (Colistin): Role card 5 –**Ministry of Health-**

***DO NOT SHOW THIS CARD TO OTHERS**

You are a person in charge of antimicrobial resistance in the Ministry of Health.

You are monitoring antimicrobial resistance in hospitals.

Your section approves pharmaceutical companies for selling colistin to medical doctor.

You regulate medical doctors on the use of colistin, and colistin can be used only when the patient is severely infected by multi-drug resistant bacteria.

You are hoping that Ministry of Agriculture regulates the use of colistin in pigs.

Game A (Colistin): Role card 6 –**Medical doctor in a hospital-**

***DO NOT SHOW THIS CARD TO OTHERS**

You are a medical doctor working in a hospital.

Last month, in a neighbour city, three patients died by nosocomial infections in a hospital with multi-drug resistant bacteria. Colistin also did not work on the cases.

You are worried very much on the use of colistin in pigs, as you suspect that the patients died in the neighbour city received colistin resistant gene from plasmid of pig origin.

Game A (Colistin): Role card 7 –**Consumer association-**

***DO NOT SHOW THIS CARD TO OTHERS**

You are working in a consumer association.

You want to make sure that foods are safe.

You are worrying that consumers receive colistin resistant gene through contamination of foods from contaminated pork.

Game A (Colistin): Role card 8 –**Food Safety Commission of the Cabinet Office-**

***DO NOT SHOW THIS CARD TO OTHERS**

You are a risk assessor working at the Food Safety Commission.

You received a request from the Ministry of Agriculture to assess the risk on human health by the use of colistin in pigs.

You want to call the risk assessment team consisting of veterinary epidemiologist, veterinary microbiologist and medical doctor.

You want to answer the Ministry of Agriculture, and also want to communicate with the Ministry of Health.