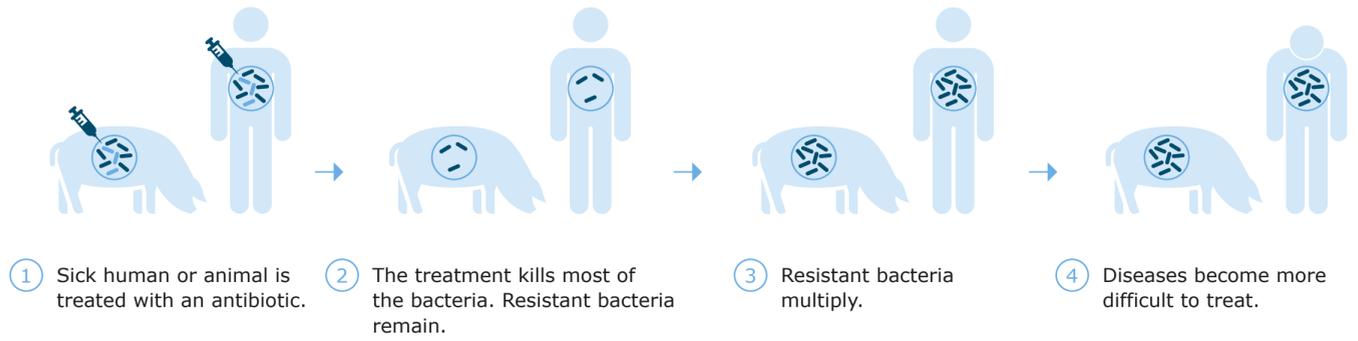
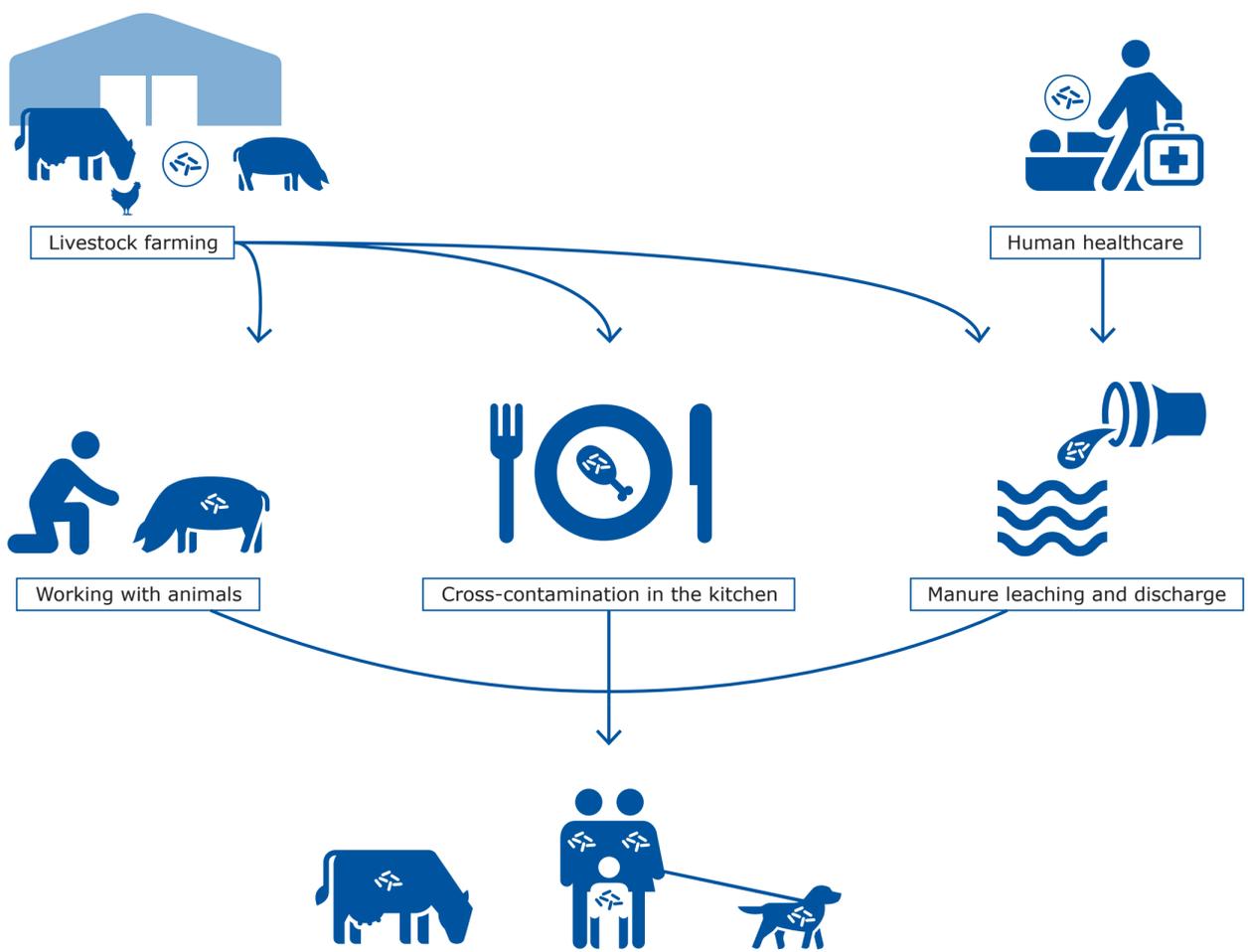


Antibiotic resistance

What causes antibiotic resistance?



Spread of antibiotic resistance



Consequences for humans and animals

Healthy humans and animals
The majority of these bacteria are not harmful to healthy humans or animals. Indeed, in some cases we carry these bacteria with us without noticing anything.

Impaired immunity
If humans and animals have impaired immunity, resistant bacteria can make them sick. Treatment with antibiotics is no longer effective.

The **MRSA bacteria** is transmitted by direct contact between people and/or animals.

The **ESBL bacteria** can also be transmitted through contaminated food.

Research and data

Knowledge Agenda ESBL

In the Knowledge Agenda ESB, Wageningen UR has identified the most important knowledge gaps regarding the prevention, spread and possible control of ESBL-producing bacteria in the food chain and the environment. Follow-up policy is aimed at further reduction of the risks for public health and animal health due to the development and spread of resistance in livestock farming.

Monitoring Carbapenem resistance

Since 2012, CVI has advised the government about Carbapenem-resistant bacteria in animals and has coordinated the national monitoring of this situation in the Netherlands. Although these bacteria have not yet been observed in livestock or companion animals, it is likely that they will be introduced in animals and will spread.

The results of the surveillance provide insight into the national prevalence and possible spread of these resistant micro-organisms.

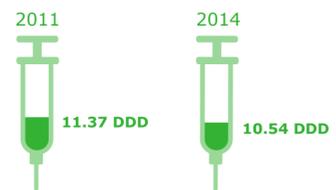
Collection of data MARAN report: trends in antibiotic resistance and e-coli.

Quality control for antibiotic susceptibility testing in 2014
The methods for and implementation of antibiotic sensitivity testing in veterinary laboratories and veterinary clinics were further harmonised in 2014. This has led to improved test quality.

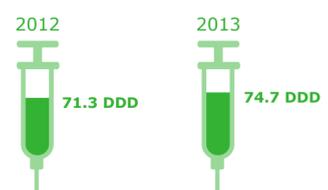
Research and publications



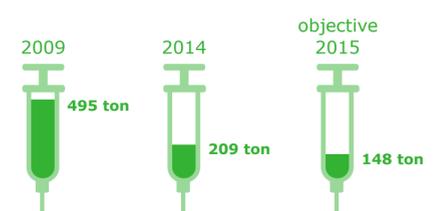
The use of antibiotics has declined in recent years.
(DDD stands for defined daily dose per 1000 person-days)



In Dutch hospitals, total antibiotic use has increased slightly
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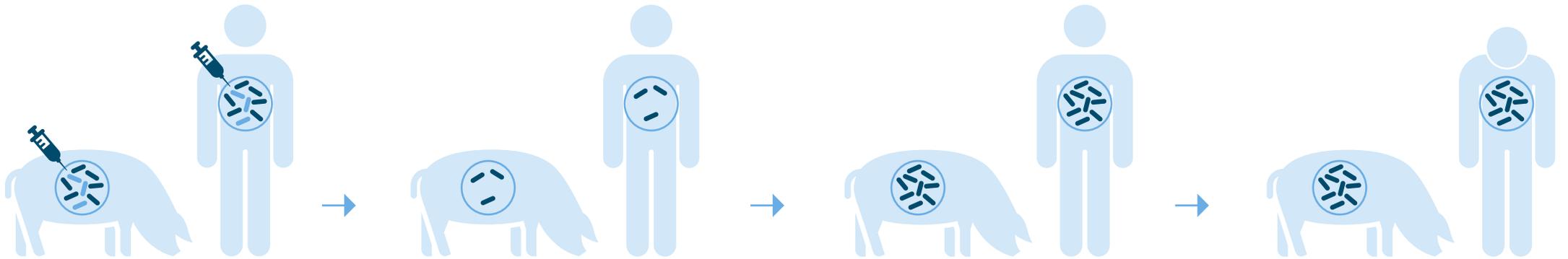


Sales of antibiotics for animals



Antibiotic resistance

What causes antibiotic resistance?



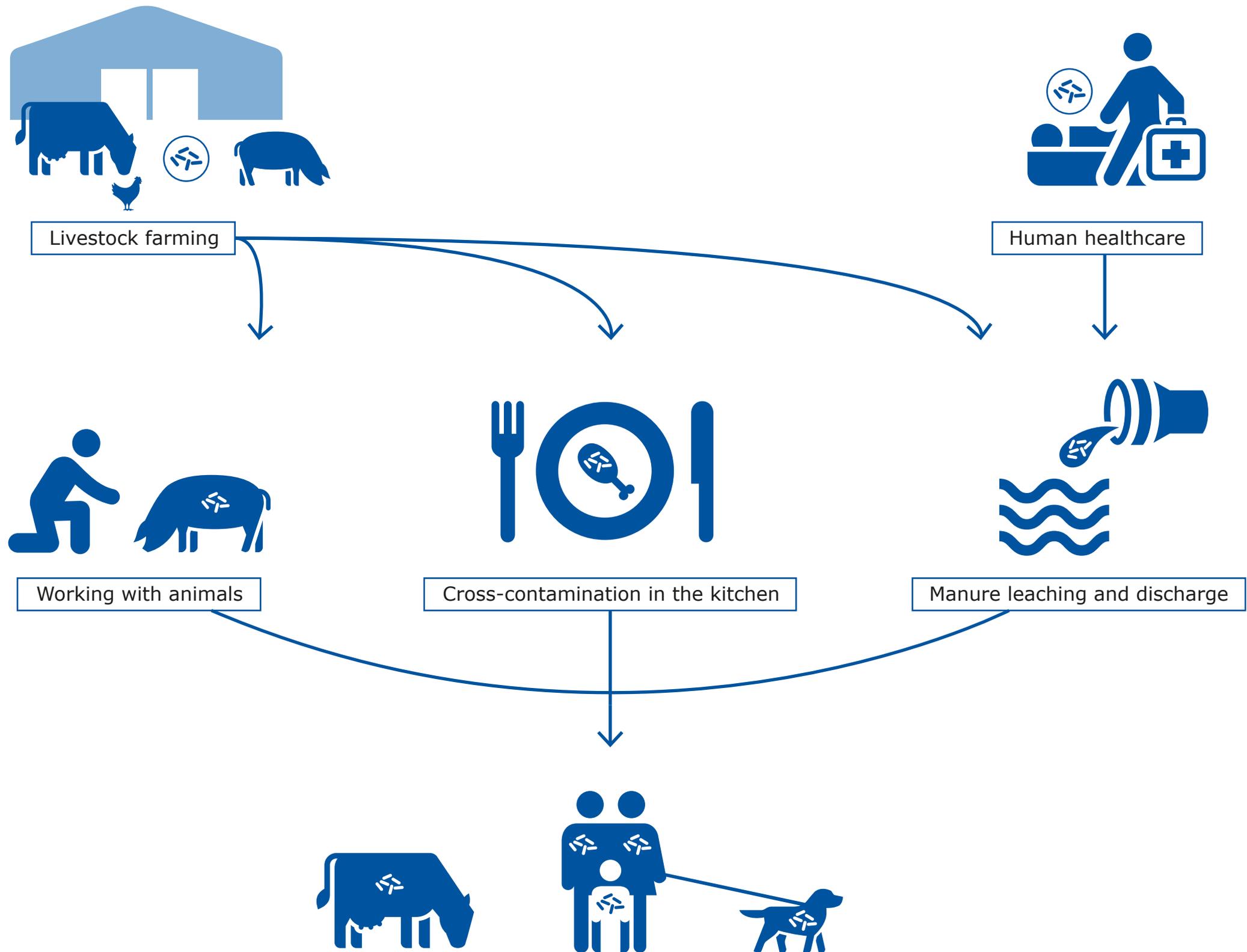
1 Sick human or animal is treated with an antibiotic.

2 The treatment kills most of the bacteria. Resistant bacteria remain.

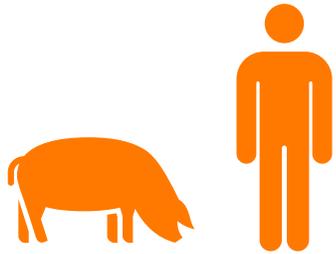
3 Resistant bacteria multiply.

4 Diseases become more difficult to treat.

Spread of antibiotic resistance

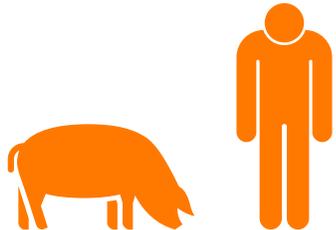


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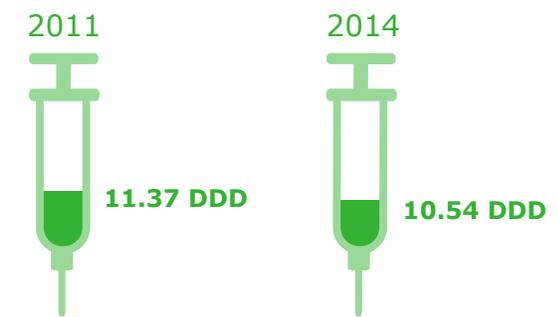


Research and publications



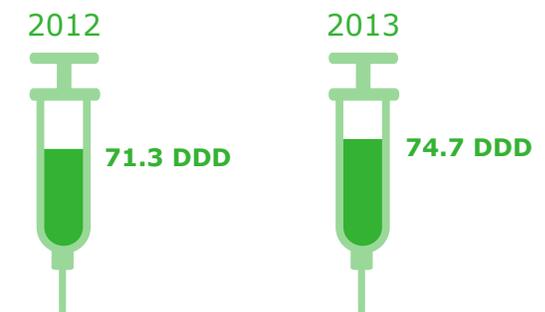
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