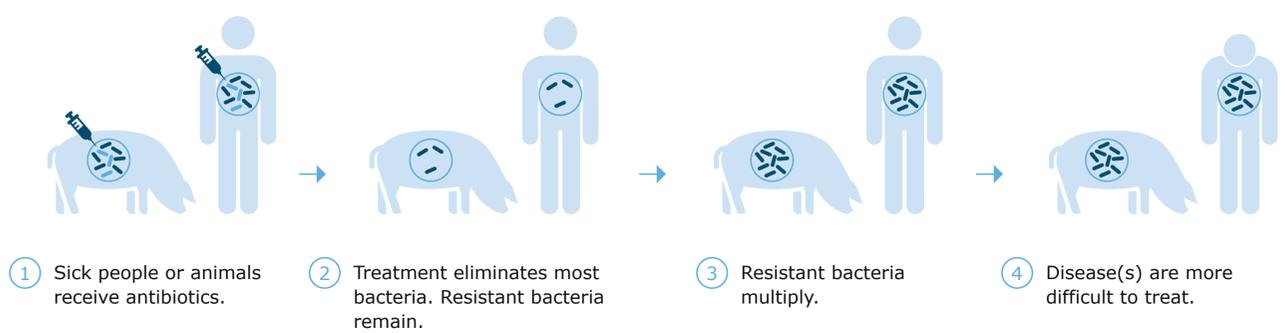
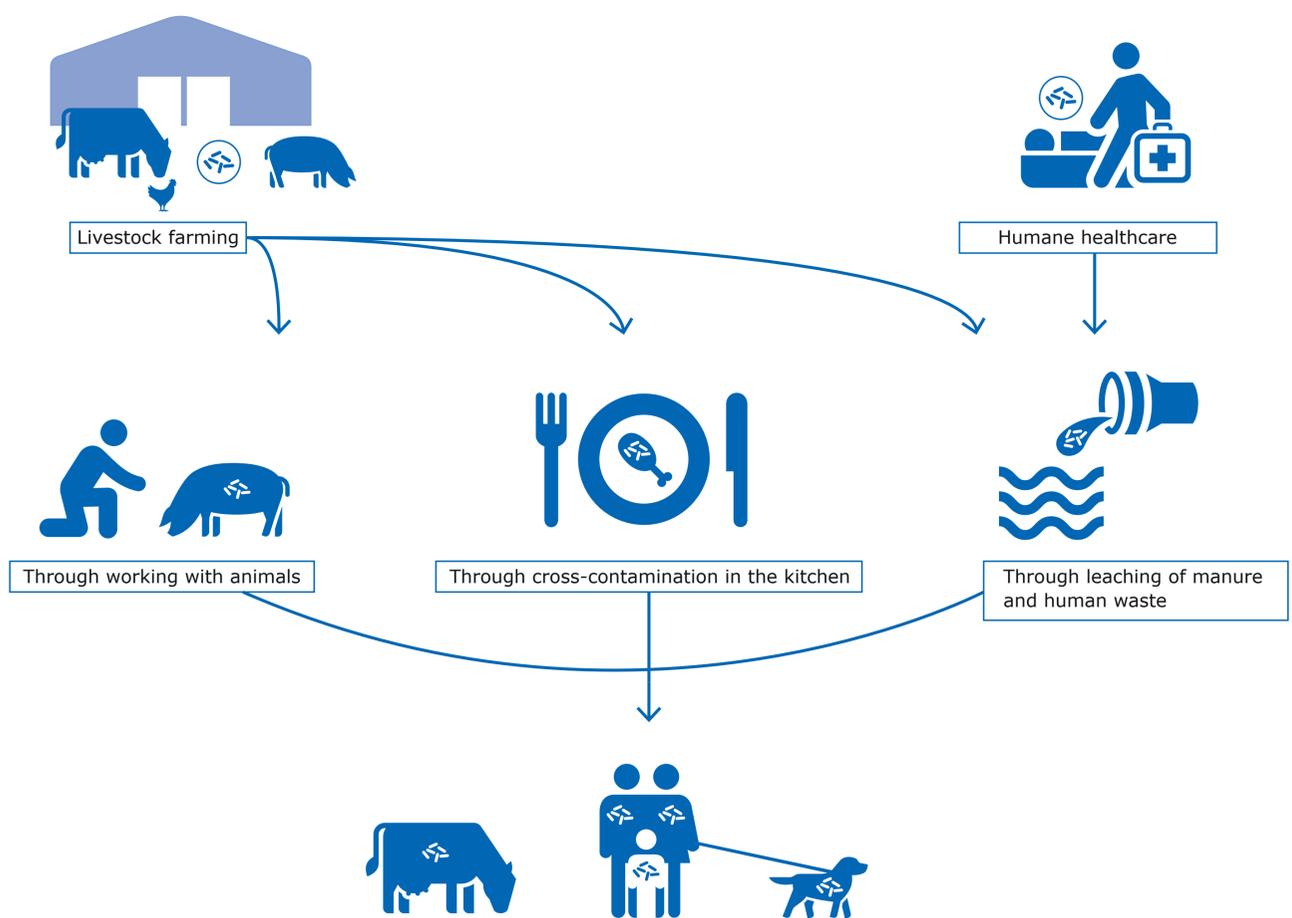


Antibiotic resistance

What causes the development of antibiotic resistance?



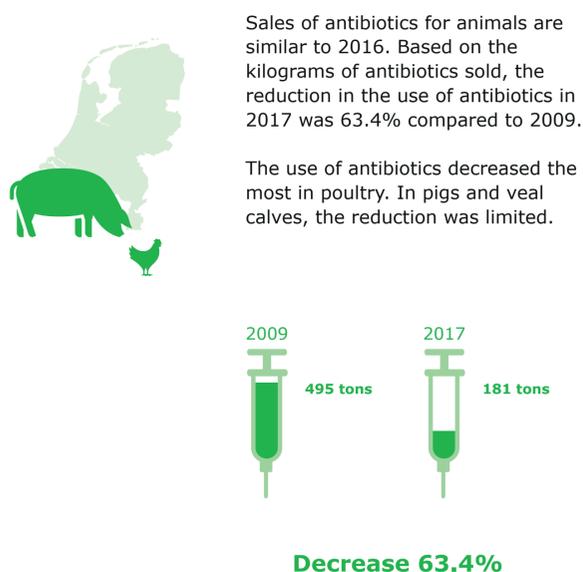
Spread of antibiotic resistance



Important types of antibiotic resistance

<p>CPEs are intestinal bacteria that produce enzymes that make them resistant to carbapenem antibiotics. This leaves hardly any options for treatment of infections.</p> <p>Although these bacteria do not (yet) occur in Dutch livestock farming, there is a risk that CPE will be introduced and spread among animals. For this reason, national monitoring is implemented for the nationwide prevention and possible spread of these resistant micro-organisms.</p>	<p>MRSA is known as the 'hospital bacterium' because it often causes problems, especially in hospitals. The bacterium is insensitive (resistant) to treatment with many types of antibiotics.</p> <p>ESBLs are enzymes that are produced by intestinal bacteria, making them resistant to antibiotics. That means that infections are very difficult to treat, leaving only a very limited number of alternative treatment methods.</p>
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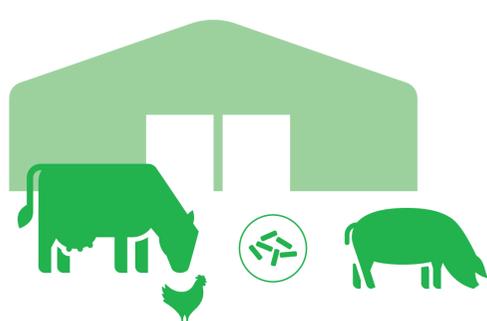
Results MARAN 2017



Antibiotics resistance in animals

- Broilers**
A significant decrease in antibiotic resistance and ESBLs (32.6%)
- Pigs**
Antibiotic resistance and ESBLs are stable (11.0%)
- Veal calves**
Increase in antibiotic resistance and ESBLs (36.7%)
- Dairy cows**
Antibiotic resistance remains low, and ESBLs (10.0%) are stable

Previous research has shown that 5% of people are carriers of ESBLs. ESBLs are mainly spread from person to person and not through meat. Farmers are at risk to be carrier. ESBLs are harmless for healthy people, but infections by these resistant bacteria is more difficult to treat.



Conclusions

- The decrease in the use of antibiotics in animals goes hand in hand with the decrease in resistance in animals and is most noticeable in poultry.
- Antibiotics of critical importance for humans medicine – important for the treatment of humans – are hardly used in livestock.
- ESBLs in poultry are clearly decreasing.
- A slight increase in resistance and ESBLs has been recorded in veal calves, the cause of which is unclear and needs to be investigated further.

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