The Times They Have A Change-ed

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This December 1st, the way we access, prescribe, and dispense antibiotics in farmed animals changed. As of now, all antibiotics that are important in human medicine – injectable, intramammary tubes, in-feed, topical, and water-soluble – can only be obtained with a valid prescription from your veterinarian. The spirit of these changes is to ensure that the antibiotics that we use in agriculture are under the increased oversight of licensed veterinarians. The ultimate goal is to ensure responsible use and ultimately slow the development and spread of antibiotic resistant bacteria. Here's a "Top 10" list of what you should know about antibiotic resistance:

1. Antibiotic resistance is THE biggest challenge facing modern medicine today. Antibiotic resistance is when bacteria develop the ability to live in the presence of antibiotics – the very drugs that are designed to kill them.

2. Over 2 million human illnesses are caused by antibiotic resistant infections in the USA each year, resulting in approximately 23,000 deaths[1]. Globally, it is estimated that 700,000 die from antibiotic resistant infections each year.

3. If AMR continues to spread unchecked, by 2050 approximately **10 million people** could die from AMR infections every year[2].

4. Infections in animals will also become harder to treat, leading to more sickness and death in your herds.

5. We have identified resistance to pretty much every antibiotic we have in our arsenal.

6. We know that the more antibiotics that we use, the more antibiotic resistance we see.

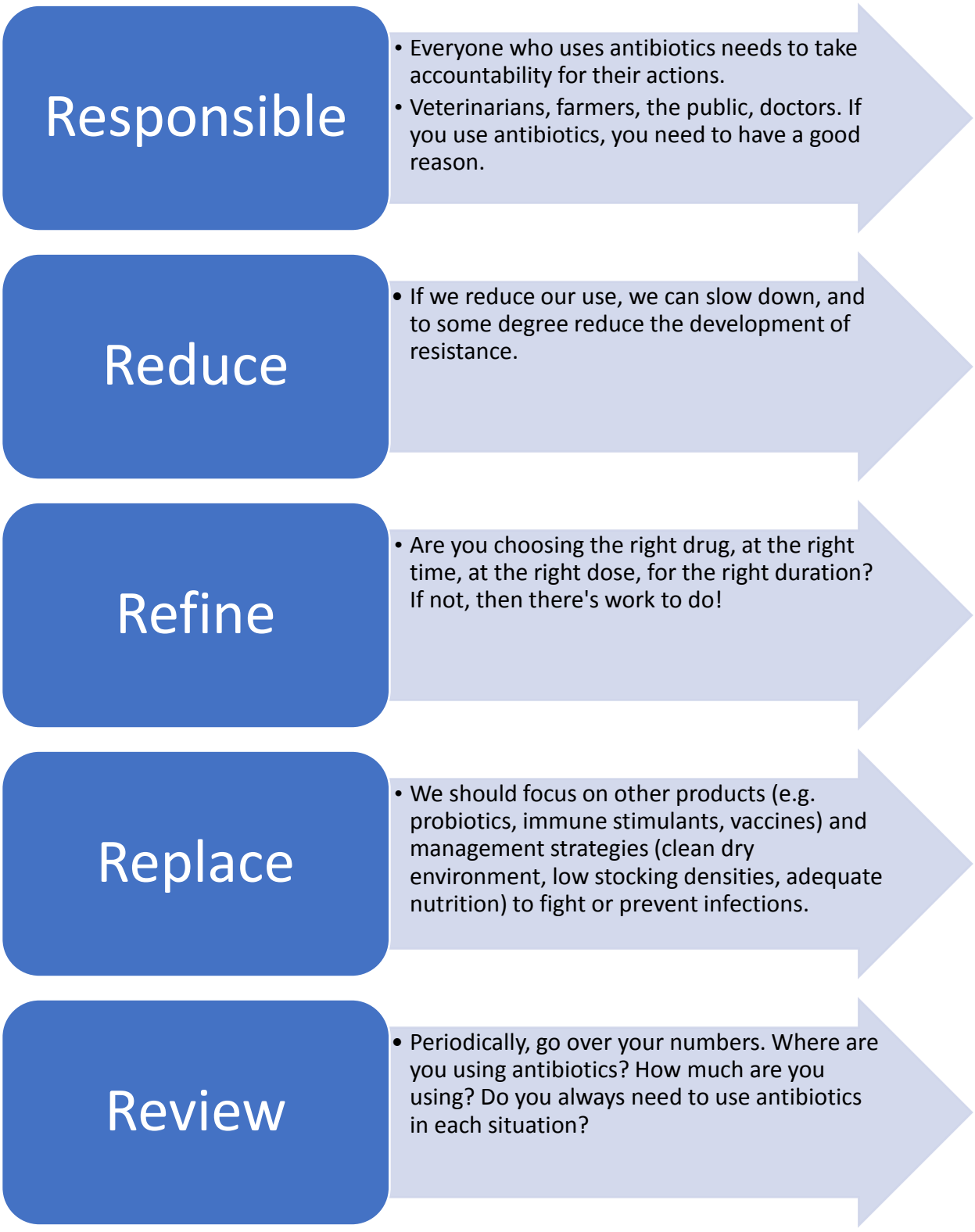
7. Wherever antibiotics are used, we have detected resistance. That includes agriculture.

8. We know that antibiotic use in animals is associated with antibiotic resistance in both animals AND humans[3].

9. Reducing antibiotic use in animals results in a reduction in resistance in BOTH animals and humans[4].

10. There is no magic bullet on the way to cure us of antibiotic resistance – any new and different wonder antibiotic will likely be reserved for use ONLY IN humans.
    - There are some alternatives with promise, but likely none will have as big an impact as antibiotics (I hope I'm wrong though).

So, if there's no magic bullet on the way, what can we do to fight back against antibiotic resistance? I always say that we need to follow the 5-R principle of **antibiotic stewardship**[5]:


Responsible
• Everyone who uses antibiotics needs to take accountability for their actions.
• Veterinarians, farmers, the public, doctors. If you use antibiotics, you need to have a good reason.
Reduce
• If we reduce our use, we can slow down, and to some degree reduce the development of resistance.
Refine
• Are you choosing the right drug, at the right time, at the right dose, for the right duration? If not, then there's work to do!
Replace
• We should focus on other products (e.g. probiotics, immune stimulants, vaccines) and management strategies (clean dry environment, low stocking densities, adequate nutrition) to fight or prevent infections.
Review
• Periodically, go over your numbers. Where are you using antibiotics? How much are you using? Do you always need to use antibiotics in each situation?

All is not lost! We need to do everything possible slow the development and spread of antibiotic resistance! For more information on what has changed and what can be done to resist the resistance, visit the Farmed Animal Antimicrobial Stewardship (FAAST) initiative website at: www.amstewardship.ca

References:

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