

# Managing Antimicrobial Resistance Through Behavior Change, March 2021

## Children and the wild: Potential benefits and perils in human-animal encounters

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For thousands of years, interactions between humans and animals have been a very important part of development, mostly for humans. It has helped us maintain connections within our human society and – through the animals – to maintain connections with the wildlife on this planet. As a result, humans are able to see this planet more as one organism – not just as a place of resources from a consumerism perspective. This relational perspective has helped us raise children with an understanding of the value of every living organism sharing this planet and allowed for the development of more a respectful and sustainable human society, seen as one part of the bigger picture on this planet.

The importance of introducing children to a range of experiences is often reiterated and provides them with opportunities to reflect on said experiences. Doing this engenders broader perspectives among the children as they grow up. In many parts of the world where big cities are becoming more and more dominant, people have fewer encounters with nature and wildlife. Still, many children have close connections with animals in various ways, from living on small private farms with just one or a few animals or in close interaction with nature and wild animals to visiting farms, going for excursions in forests and nature or simply spending time in local parks or green areas.

Research has indicated that human-animal encounters can promote learning among adults and children – whether the encounters take the form of everyday practices when living with and tending animals at home, or are planned educational activities involving visiting animals on farms. Meanwhile, such encounters may also involve the perils of exposure to infection and the transmission of resistant genes between humans and animals, which is an increasing problem, especially when encounters occur in factory farming and intensified agriculture settings. Depending on the conditions, such situations can trigger the development of zoonoses and antimicrobial resistance (AMR). These processes highlights our limited ability to control every aspect of human-animal encounters, especially when it comes to the microbe level. To realise the great learning benefits of human-animal encounters, there is a need to understand

microbial processes and promote encounters that consider such processes rather than avoid encounters altogether.

### Objective of the workshop

The workshop aimed to draw on participants' experiences to explore how to address both the benefits and the perils of human-animal encounters, especially for children, creating new perspectives on how to approach such encounters in a more efficient way. The twenty-seven participants included members from the Swedish Blue Star, 4H of Sweden, the National Veterinary Institute, and universities in Sweden and abroad. During the workshop, two very inspirational talks were held. Kristina Osbjer, from the Swedish University of Agricultural Sciences, gave the first lecture on the topic 'Animal raising and child health in low- and middle-income countries', followed by discussions in breakout rooms. Caleb Mandikonza from the Wits University in South Africa was the second speaker, with the presentation 'Unravelling patterns in nature: experiential teaching and learning through animals', followed by discussions in breakout rooms.

**Figure.** The 'wheel' of behavioural change discussed throughout the workshop.



## Outcomes of the workshop discussions

- Encounters with animals are important, as they hold many benefits for humans. The risk of AMR and the need for behaviour change should be addressed in ways that do not generate fear of encounters with animals, especially among children.
- Human-animal encounters offer benefits to health and development, including nutrition, mental health, value development and the empowerment of disenfranchised groups in society through animal care and husbandry. Furthermore, positive human-animal interactions are more crucial than ever during the current period, when many well-established routines are changing or disappearing. To counteract the risk of infection and AMR, the challenge lies not in the human-animal encounters as such but in the forms these encounters take and where they occur. Rather than change behaviours to avoid encounters with animals due to the risk of AMR, efforts should focus on adapting behaviours depending on the type of encounter, how and where the encounter occurs, who is involved, and under what conditions.
- Encounters between humans and animals can involve different perils, depending on the place and situation in which they occur. Human-animal encounters do not take place in a vacuum, and when organising, planning and evaluating encounters, the conditions of, for example urban versus rural life should be taken into consideration.
- Discussing microbes in isolation might be difficult, but efforts for behaviour change can focus on the fact that microbes are part of every situation involving humans and animals. Microbes and AMR should be discussed in a holistic way, meaning that microbes are an inevitable part of our planet, with a specific niche and a role in all life processes. Interactions between living organisms always involve a form of balance. Such balance is of particular importance in the case of intensified agriculture, e.g., in food production.
- Developing positive relationships with animals based on care and respect both for ourselves as humans and for other animals can counteract the more fraught relationships that drive AMR. Detailed research

- should be performed on agriculture that risks increasing AMR, and the results communicated to the people who influence the processes most.
- We must learn to sustain behavioural change – not only make the change but stick to it for decades or centuries. Many participants had experiences of working with behavioural change related to health and AMR and had seen short-term change as the result of an intervention or effort, but that people often reverted to old habits over time. Questions were raised regarding the time scales of the interventions and the need to focus on behavioural change coupled to value change to create forces for monitoring and sustaining behaviour – both external (information and educational efforts) and internal (values, habits).
  - In many situations, solving other problems in society, like decreasing poverty and gender inequality or increasing the welfare of families with children, and simultaneously guiding the development of particular ethical and moral values in society would automatically decrease AMR in some aspects. Therefore, efforts should be made to support solutions to such problems as well.

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