

The benefits of vaccines and vaccination

Issue

Developing a vaccine from a promising concept into a robust, commercially-viable and highly-effective product is increasingly a complex and time-consuming responsibility, requiring a high degree of biotechnical and industrial knowledge. Few vaccine candidates actually reach the market, and those which do can require up to 10 years of effort and millions of dollars in investment. Increasing complexity in terms of regulatory requirements, as well as occasional controversy over side-effects or new technologies, have led to additional challenges for veterinary vaccine research and development.

Yet, new variants of existing pathogens and new diseases emerge every year, menacing human as well as animal health. The critical public health and animal health issues they cause require that new vaccines have to be developed. Vaccines are one of the critical tools in every veterinarian's and veterinary public health official's tools box and offer one of the best, long-term solutions for effective prevention of existing and emerging infectious animal diseases today and in the future. Vaccines are also needed to respond to future infectious threats to human and animal health and to help address the societal challenge of feeding a 9 billion world population by 2050

Investment and continued progress in vaccine research and development will benefit both animal and human lives. To ensure this continued progress and build upon the 200 years of success, regulatory authorities, researchers, industry, veterinarians, the media and the general public need to have a clear understanding of the benefits and risks associated with vaccines. Stakeholders need to work together in a fact-based and responsible manner to lower barriers to innovation and investment, while maintaining the appropriate regulatory and policy environment to ensure the safe and efficient use of existing vaccines..

Background

The 200 year history of vaccinology has generated continuous technical breakthroughs and led to significant improvements in public health only surpassed by improved access to clean drinking water. About 56 human vaccines or vaccine combinations exist against 30 human diseases, with eight of these innovations used in routine vaccination programs to avert 2-3 million deaths and save 750 000 children from disability per year. With 75% of all new human pathogens originating from animal sources, vaccines are key to limiting the spread of infectious diseases from animals to people in the future.

Vaccines also protect companion animals and livestock against infectious diseases and ensure the provision of healthy and nutritious food such as eggs, milk and meat products. The close association between people and their pets would not be as carefree without vaccination. The efficiency of livestock production depends to a large extent on vaccines, helping a dynamic industry to avoid decrease in productivity attributed to infectious diseases in food-producing animals. Over 100 different veterinary vaccines are currently commercially available.

Position

The portfolio of animal health companies contain a variety of veterinary products ranging from medicated feeds, anti-infectives, vaccines, parasiticides and other pharmacological preparation like sedatives or pain medicines. Collectively, they meet the needs of the veterinary community to better secure animal health of domestic and production animals in developed and emerging countries.

Vaccines are indispensable tools to prevent potentially dangerous infectious diseases and to maintain animal welfare and the productivity of animal protein production. They can also help to protect the health of people from zoonosis and agriculture-based economies against major infectious animal epizootics. In 2013, vaccines accounted for 6 billion USD or 26% of the global animal health industry turnover of 22.9 billion USD (Vetnosis 2013)

Vaccines:

- 1) are an effective, convenient and easy to administer health intervention that protect animals and humans against the potential dangers of many infectious diseases.
- 2) are the second reason for a spectacular decrease of human mortality in the 20th century after clean drinking water and one of the most cost-effective health achievements of modern times.
- 3) stimulate the animal's own defence system and prepare the animal to better resist the impact of a pathogenic microorganism it may encounter later in life.
- 4) prevent occurrence of specific infectious animal diseases and suffering in animals.
- 5) are an efficient means to prevent the transmission and the spread of contagious animal diseases from animals to people and from animal to animal.
- 6) are generally safe and efficient and only occasionally cause severe side effects.
- 7) may improve the efficiency of conversion of food and water into animal proteins and other essential nutrients.
- 8) contribute to the prevention and control of infectious animal diseases epidemics and protect farmers and governments against the waste of critical agricultural resources and severe financial losses
- 9) support establishment of good animal welfare standards, which in turn contribute to improved overall herd health, increased production efficiency, lower veterinary costs, less use of medication, safer food chains by decreasing the incidence of food borne illness
- 10) are part of veterinary public health policies and the result of robust evaluation by medicines regulatory authorities.
- 11) are developed and produced according to safety and quality standards similar to those applied to human vaccines.

- 12) are commercialized only after being proven pure, potent, safe and efficacious and after receiving a market authorization from competent authorities.
- 13) are released for sale only if complying with all in-process quality control tests carried out at critical steps of the production process.
- 14) are subject to post-authorisation surveillance and pharmacovigilance reporting throughout their life cycle.
- 15) represented 26% of the global animal health industry's value of USD 2.3billion in 2013.
- 16) R&D and manufacturing sites represents a major technological asset of any company and country and are a major lever of employment, innovation and development
- 17) Can prevent the loss of up to 20% of animal protein production due to infectious animal diseases in emerging economies
- 18) Innovation and biotechnology is needed to continuously improve existing vaccines and face the challenges of recurring or emerging infectious animal diseases.
- 19) Are starting to address more complex, protein -based diseases in the future such as cancer, auto-immune diseases and allergies.
- 20) Have been brought to mankind during the last 200 years by great visionaries understanding the world as one and working without distinction between animals and man - ONE HEALTH CONCEPT.

Call for action

The animal health industry plays a crucial role on inventing, developing, producing and distributing veterinary medicinal products, almost 30% of which are vaccines. To ensure access to critically important vaccines for current and future disease control needs, HealthforAnimals proposes a stakeholder approach to work on 3 main topics:

- 1) Improve the image of vaccines and vaccine use through pro-active advocacy campaigns.
- 2) Support legislation and policy development conducive of improving uptake and vaccination coverage to stimulate public and private investment in vaccine development.
- 3) Encourage investment, availability of funding and collaboration to ensure continued investment into innovation and development of new veterinary vaccines.