

Bacterial Zoonoses: An introduction

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Impact of zoonoses

- ▶ Nearly 70% of India's population is rural and live in close contact with domestic animals, and wild animals as well.
- ▶ As our world grows progressively interdependent and the populations of human, domestic animals, wildlife, and animal products also increase and expand globally, we can expect more interactions among these groups and certainly the era of emerging and re-emerging zoonoses will also expand and grow proportionately.

(Tomley and Shirley, 2009).

- ▶ **60%** of emerging infectious diseases are zoonoses
- ▶ 75% of emerging infectious diseases affecting humans are diseases of wild animal origin. *(Jones et al 2008)*
- ▶ **Three quarters** of these emerging infections are contributed by wild life *(Jones et al 2008)*
- ▶ The emerging infectious diseases account for **26 %** of annual deaths worldwide. *(Taylor et al 2001)*
- ▶ Role of Antibiotics
- ▶ Without treatment, the bubonic plague can cause death in up to 60 percent of people who get it, according to the

- ▶ 1,415 human pathogens identified, 177 (13%) species regarded as emerging or re-emerging
- ▶ 37 per cent of emerging and re-emerging pathogens are viruses and prions followed by protozoa (25%).

This indicates that emerging and re-emerging pathogens are disproportionately viruses.

Emergence of microorganisms resistant to antimicrobials to which these were previously sensitive to is cause of concern



One Health in the context of zoonoses

- ▶ One Health' is an approach to designing and implementing programmes, policies, legislation and research in which multiple sectors communicate and work together nationally or globally to achieve better public health outcomes. (WHO)
- ▶ The “One Health” approach identifies five key areas to combat zoonoses:
 1. Sharing health resources between the medical and veterinary sectors
 2. Controlling zoonotic diseases in animal reservoirs
 3. Early detection of and response to emerging diseases
 4. Prevention of epidemics and pandemics
 5. Generating insights and adding value to health research and development

Neglected zoonoses

- ▶ **Neglected zoonoses are diseases** that is commonly associated with poverty and impacts the lives and livelihoods of millions of poor livestock keepers or those living in periurban slums / neglected population primarily in developing countries.
- ▶ Globally, there are 500 - 900 million food-insecure livestock keepers, and livestock contributes to the livelihoods of 70 percent of the world's rural poor ([WHO et al., 2006](#)).
- ▶ Poor and small livestock producers worldwide are at risk and more frequently acquire these infections from their animals.
- ▶ Such population are also more vulnerable to diseases associated with consumption of livestock products and are at risk for zoonotic diseases such as cysticercosis and other parasitic and food-borne illnesses.