

## Consortium climate, health prevention, environment, economy and innovative paths to explore

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### Abstract

Bacteria, viruses, parasites and fungi are resistant to drug cause 700,000 death each year. By 2050 superbugs inured to treatments could cause up to 10 million deaths annually and costs the global economy US\$100 trillion. AMR (antimicrobial) resistance is regarded nowadays as a major threat to global public health. The issue is receiving high-level political attention (G7 and G20 in 2017 for first time). Pandemics, drug resistance and neglected diseases framing health as a “global security issue” as recent example of coronavirus and previously Ebola. The list was drawn up in a bid to guide and promote research and development (R&D) of new antibiotics, as part of WHO’s efforts for AMR but need to be extended. Tuberculosis (MDR/XDR) and latent tuberculosis represent a major issue to tackle attracts global attention as witnessed by recent WHO and inter-ministerial meetings several times and figured on economic agenda given the fact of health importance for sustainable economic growth in this interdependent and aging world. Problem of resistance get worsened due declining number of new antibiotics and limited number of new classes. Multifaceted strategy to promote and prioritize highly potential alternatives to tackle AMR like vaccines development is required. Vaccines like diphtheria and tetanus did not prompt resistance. In 1980 the smallpox vaccine had eradicated the naturally circulating virus worldwide without generating resistance. Recent development of LATV for pertussis shows positive off target effect where not only antibody but innate and cellular immunity plays role. Additionally, introduction of live vaccines like measles and BCG has been associated with much larger reduction of mortality than can be explained by the prevention of the targeted infections. Thoughtful and innovative vaccines development considering host microbiota “superorganism” and immune crosstalk - Immune system training linked with several inflammatory/autoimmune diseases open large avenue for future development. Accurate diagnostic and surveillance with better understanding of genetic and immunologic background of host specific response and pathogen evolution drives successful country adapted vaccine research. Importantly vaccines, as highly potent tool and valuable alternative from long term perspective being clearly recognized as a major tool for public health already. Collection of microbiome data as Oncobiome project or Metagenome (gut, nasal, reproductive organs, skin) and deeper understanding of interaction with immune and neuroendocrine system along with adapted intervention considering personal, immune status and geographical differences need to be considered and helpful for diagnostic, prevention and earlier intervention. There is a strong call for vaccine in infectious diseases area and neglected diseases (dengue, malaria - vector born diseases and climate) but also NCDs. Vaccine (but innovative approach to explore natural sources of new medicines – reverse pharmacology) might bring strong valuable approach.

### Biography

Ivana Haluskova Balter is Medical and Scientific Consultant, Partnership (PPP) Research, Health, Climate One Health & One Planet. She is a French Medical professional specialized in infectious and Tropical (Neglected) diseases, Internal medicine, certified in Immunology, Pediatric and Public health and diplomacy in Switzerland (IHEID), Vaccines (training MBA) and years of Clinical/Medical practice. Lived multi-country medical “field” experience in Southeast Asia and Pacific, West/Central/East Europe and Middle East. Speaking French, English, Italian, Russian, Czech/Slovak. She has over 13 years of experience as senior medical lead in pharmaceutical research and development for European and USA companies and as a medical and scientific consultant advocate.

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