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## Why Salmonella Dublin is a big deal?

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Salmonellosis is one of the most common foodborne diseases worldwide that causes a huge burden of morbidity and mortality in humans. Although non typhoidal Salmonella serovars including Salmonella Dublin are associated primarily with self-limiting gastrointestinal illness they have adapted to cause invasive disease and systemic illness in humans particularly children, elderly and immunocompromised people. *Salmonella enterica* serovar Dublin is a zoonotic infection that can be transmitted from cattle to humans through consumption of contaminated milk and milk products. Outbreaks of human infections by Salmonella Dublin have been reported in several countries including high-income countries. The genetic basis of virulence and invasiveness of Salmonella Dublin is not well characterized. We apply next generation sequencing and associated bioinformatics analyses tools is

characterize the invasome of Salmonella Dublin that enable the bacteria to cause systemic illness in humans. We identified several virulence factors that enable the bacteria to cause invasive disease in humans however no genomic markers were detected that differentiate among invasive and non-invasive isolates suggesting that host factors and immune response play a significant role in the disease outcome. There is no vaccine against non-typhoidal Salmonella however our understanding of the molecular basis of virulence in invasive Salmonella Dublin will provide insights into the development of an effective vaccine through identification of novel virulence-attenuated strains with a potential for use as vaccine candidates for high-risk groups.

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