Author's response to reviews

Title: What potential could there be for a S. aureus vaccine in a hospital setting on top of other preventative measures? A model-based analysis.

Authors:

Cosmina S Hogea (cosmina.s.hogea@gsk.com)
Thierry Van Effelterre (THIERRY.VAN-EFFELTERRE@GSK.COM)
Adrian Cassidy (ADRIAN.X.CASSIDY@GSK.COM)

Version: 2 Date: 26 July 2013

Author's response to reviews: see over
Dear Dr Harris,

On behalf of all authors, please find enclosed our manuscript entitled “What potential could there be for a S. aureus vaccine in a hospital setting on top of other preventative measures? A model-based analysis.” for consideration in *BMC Infectious Diseases*.

Methicillin-resistant *Staphylococcus aureus* (MRSA) clones have been recognized as a leading cause of nosocomial infections. Studies on the impact of hygiene prevention measures on MRSA infection have reported conflicting results. Over the past decade, there has been sustained interest and efforts towards developing a *S. aureus* vaccine. A natural timely question arises then regarding potential of a *S. aureus* vaccine to yield additional MRSA infection reduction in a hospital setting, on top of other preventative measures that already proved efficient.

In this manuscript, we use mathematical modeling to evaluate the potential impact of hygiene prevention measures and *S. aureus* vaccination on MRSA infection in a hospital setting. Model-based projections illustrate how efficient hygiene prevention measures can be towards reduction of MRSA infection. We further show that even with other hygiene prevention measures in place, vaccination of patients prior to hospital admission has the potential to provide additional reduction of MRSA infection. Vaccine coverage and vaccine efficacy are key factors that would impact the magnitude of this reduction.

We believe that *BMC Infectious Diseases* would be an appropriate forum for publication in view of its special focus on prevention and management of infectious diseases in humans.

All authors have participated in the design, analysis and/or interpretation; they have all contributed to the writing/review of the manuscript and approved the submission of the manuscript. This manuscript has not been published elsewhere and is not currently under consideration for publication by another journal.

Thank you for considering this manuscript for publication. We look forward to hearing from you on the outcome of the submission.

Yours sincerely,

Cosmina Hogea, PhD
GlaxoSmithKline Vaccines
2301 Renaissance Blvd Ste RN0510
King of Prussia, PA
USA
Phone : + 1 610 787 3611, Fax : + 1 610 787 7057
E-mail: cosmina.s.hogea@gsk.com