

## Integrated host gene expression diagnostics provide a robust categorization of bacterial and viral illnesses.

**Carol Togawa<sup>1,2</sup>, Christine<sup>2</sup>, Marry W. Henry M.D<sup>1</sup>, Nahoko Russo MC<sup>1</sup>, Markus Aeb<sup>2</sup>**

<sup>1</sup> RAND Corporation, Pittsburgh, Pennsylvania

<sup>2</sup> Department of Microbiology, Memorial Sloan-Kettering Cancer Center, New York, USA



 Memorial Sloan-Kettering  
Cancer Center

### Abstract (Limit 600 words)

Infectious illnesses continue to be a leading source of mortality, disability, and social and economic disruption for millions of people worldwide. Poverty, a lack of access to health care, human migration, novel disease agents, and antibiotic resistance are all factors that contribute to the spread of these diseases. Infectious illness prevention and treatment techniques are based on a detailed understanding of the complicated interactions that exist between certain viral or bacterial infections and their human (or animal) hosts. Glycans are key components of the outermost surface of all animal and plant cells, while oligosaccharides and polysaccharides are major components of the outermost surface of all bacteria and viruses found in eukaryotes.

As a result, the pattern of glycans and glycan-binding receptors expressed by microbial pathogens and their hosts influences most (if not all) of their interactions. This is true at all phases of infection, from the initial colonisation of host epithelial surfaces through tissue dissemination and the generation of inflammation or host-cell damage that leads to clinical symptoms. Virulence factors are the microbial compounds that are mainly responsible for disease symptoms.

### Biography (Limit 200 words)

Andrew C is a Senior Nurse Therapist and a researcher who has developed a technique called Rebinding of the Body which helps people recover from trauma, learn self-help techniques and lead more productive lives. Andrew C is currently at the Department of Urology, Columbia University College of Physicians and Surgeons, Herbert Irving Comprehensive Cancer Center, 161 Fort Washington Avenue, New York, NY 10032. His intersubjective ethnographic study has been published in a text called, “Women, Trauma and Alcohol Dependency, Connection and disconnections in alcohol treatment for women”. She has published several articles in child and family psychiatry including an extensive literature review called “The Health Impact of Childhood Trauma”.

### About Research Topic (Limit 200 words)

The use of procalcitonin (PCT) serum levels as a routine indicator of bacterial infection is highly supported by our findings. In addition, some of the unique prospective biomarkers (e.g., heparin-binding protein [HBP], interleukin-6 [IL-6], cortisol [Cort], interferon [IFN]-c, and IL-8) showed noteworthy changes dependent on the aetiology and severity of the disease. Control and prevention, such as the use of viral and bacterial vaccinations, as well as prophylaxis and treatment, such as the use of antiviral and antibiotic medicines, all help to reduce the worldwide burden of these illnesses. All of these strategies, however, have flaws that restrict their usefulness. Antibiotic resistance has been recognised as a significant issue for many years, and an increasing number of oseltamivir-resistant influenza strains were discovered during the 2009 pandemic, particularly among immunocompromised individuals with influenza illness.

**About Institution (Limit 200 words)**

Memorial Sloan Kettering Cancer Center (MSK or MSKCC) is a cancer treatment and research institution in the borough of Manhattan in New York City, founded in 1884 as the New York Cancer Hospital. MSKCC is the largest and oldest private cancer center in the world, and is one of 51 National Cancer Institute–designated Comprehensive Cancer Centers. Memorial Sloan Kettering is affiliated with Cornell University's medical school. Its main campus is located at 1275 York Avenue, between 67th and 68th streets, in Manhattan. Memorial Hospital was founded on the Upper West Side of Manhattan in 1884 as the New York Cancer Hospital by a group that included John Jacob Astor III and his wife Charlotte. The hospital appointed as an attending surgeon William B. Coley, who pioneered an early form of immunotherapy to eradicate tumors. Rose Hawthorne, daughter of author Nathaniel Hawthorne, trained there in the summer of 1896 before founding her own order, Dominican Sisters of Hawthorne. In 1899, the hospital was renamed General Memorial Hospital for the Treatment of Cancer and Allied Diseases. In 1902, Arabella Huntington made a \$100,000 (approximately \$3 million in 2018) bequest in memory of her late husband Collis Potter Huntington to establish the first cancer research fund in the country, the Huntington Fund for Cancer Research.

**References (15 to 20)**

1. [Schappert SM, Rechtsteiner EA. Ambulatory medical care utilization estimates for 2007. Vital Health Stat 13. 2011;\(169\):1–38](#)
2. <https://www.imedpub.com/clinical-immunology-and-infectious-diseases/archive.php>
3. World Health Organization Antimicrobial resistance. 2016. Available at: [www.who.int/mediacentre/factsheets/fs194/en/index.html](http://www.who.int/mediacentre/factsheets/fs194/en/index.html). Accessed December 5, 2013
4. van der Meer V, Neven AK, van den Broek PJ, Assendelft WJJ. Diagnostic value of C reactive protein in infections of the lower respiratory tract: systematic review. *BMJ*. 2005;331(7507):26
5. Grabowska K, Hogberg L, Penttinen P, Svensson A, Ekdahl K. Occurrence of invasive pneumococcal disease and number of excess cases due to influenza. *BMC Infect Dis* 2006; 6:58.
6. Hament JM, Kimpen JL, Flier A, Wolfs TF. Respiratory viral infection predisposing for bacterial disease: a concise review. *FEMS Immunol Med Microbiol* 1999; 26:189–195.
7. Finelli L, Fiore A, Dhara R et al. Influenza-associated pediatric mortality in the United States: increase of staphylococcus aureus coinfection. *Pediatrics* 2008; 122:805–811.
8. Diavatopoulos DA, Short KR, Price JT et al. Influenza A virus facilitates Streptococcus pneumoniae transmission and disease. *FASEB J* 2010; 24:1789–1798
9. Aebi T, Weisser M, Bucher E, Hirsch HH, Marsch S, Siegemund M. Coinfection of Influenza B and Streptococci causing severe pneumonia and septic shock in healthy women. *BMC Infect Dis* 2010; 10:308
10. Gupta RK, George R, Nguyen-Van-Tam JS. Bacterial pneumonia and pandemic influenza planning. *Emerg Infect Dis* 2008; 14:1187– 1192

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