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New Review: Targeted hygiene in the home and everyday life settings and its role in reducing antibiotic prescribing and tackling the global problem of antibiotic resistance

Antimicrobial resistance (AMR) is one of the greatest threats to global health today. In 2015, WHO and partner organizations developed a Global Action Plan (GAP) for tackling AMR. One of the five strategic objectives is reduction in the incidence of infection through improved sanitation, hygiene, and infection prevention. Almost 120 countries have finalized national action plans. What is striking is that most plans discuss infection prevention and control primarily in the context of healthcare facilities, but give little attention to the role of hygiene in home and community. Good hygiene in home and community settings contributes to the fight against AMR in two ways, by preventing infection, thereby reducing the need for primary care antibiotic prescribing and by preventing person to person spread of infections which are antibiotic resistant.

This new paper, published in the latest edition of the **American Journal of Infection Control** is the output from a group of experts from the fields of microbiology, antibiotic resistance, hygiene and public health. The paper reviews key evidence that the home and other everyday life settings are important settings for transmission of infections and acquisition and spread of antibiotic resistance, Evidence is presented demonstrating that a Targeted Hygiene approach, if properly-implemented, offers a framework for maximizing protection against colonization and infection, which in turn reduces the need for antibiotics, thereby minimizing the selection pressure for the development of antibiotic resistance.

The paper calls for a review of hygiene practices in homes and everyday life to ensure that they are effective and appropriate to the urgent public health issues we currently face, such as tackling AMR and COVID-19. The paper also issues a call to action to ensure that hygiene in these settings is given greater consideration in global and national antibiotic resistance action plans.

New Review: A 21st century view of infection control in everyday settings: the Microbial Theory of Health

Due to significant advances in microbiome science over the past two decades, we are at the brink of a paradigm shift regarding the role of microbes in disease and health. This shift will necessitate a fundamental change in the approaches that we take to prevent transmission of infection. In particular, we will need to balance protection against disease against need for exposure to naturally diverse microbial communities.

In a new "state of Science" review in the American Journal of Infection Control, Professor Elizabeth Scott (Simmons University, Boston) and colleagues discuss how we need to revise hygiene policy to address this paradigm shift. As they point out, this shift is happening in a world where, contrary to optimistic predictions during the mid-20th century, infectious diseases have not been eradicated. Rather, new infectious agents continue to emerge and/or re-emerge globally including emerging antibiotic-resistant pathogens. This is set against a background where community-based respiratory, gastrointestinal, and skin infections continue to exert a heavy toll on human health and the problem is exacerbated by the aging of the population and the associated increase in percentage (now ~20%) of immunocompromised individuals living in the community. This is without knowing what impact the coronavirus pandemic might have on global health agency and public attitudes to hygiene.

In this paper Scott et al propose a Microbial Theory of Health which encompasses our total relationship with our microbial world including protection against infection and the need for microbial exposure. The Microbial Theory of Health centres around the risk management approach to hygiene, known as Targeted Hygiene. This is an evidence-based hygiene policy that is employed to prevent transmission of pathogens and the transmission of infectious diseases through targeting only sites, surfaces, and practices that are considered high risk for pathogen transmission. Targeted Hygiene also discourages indiscriminate use of broad-spectrum microbicides for lower-risk activities and surfaces.

The authors conclude that “The Microbial Theory of Health including age-appropriate and health-

appropriate hygiene practices for home and everyday life, should usher in a new era in which pathogen reduction can be accomplished without indiscriminate elimination of potentially beneficial microbes from the human and environmental microbiomes".

Coronavirus (COVID-19) – what you need to do to protect yourself against infection- and ensure you do not spread infection to others

In the last 6 months we have built an IFH web area which contains advice sheets, blogs and other resources to provide the public with advice and understanding of the lifestyle changes and hygiene measures they will need to adopt to prevent spread of the COVID-19 infection. The information covers the various (and varying) situations in which individuals may find themselves in their home and everyday lives including being infected, self isolated, belonging to a vulnerable group, or just trying to carry on with working in the community whilst also caring for themselves and others.. The resources include

- IFH hygiene advice sheet: What you can do to protect yourself against infection – and how to make sure you don't spread infection to others
- Wash your hands frequently or use a hand sanitizer" – what does this actually mean for you?
- Wearing a face mask or face covering in "Out of healthcare settings" to reduce risks of transmission of COVID-19 infection
- Hygiene tips from the hygiene doctor. Topics currently included are:

- COVID-19 (coronavirus): general hygiene tips (1)
- COVID-19 (Coronavirus) Hygiene Tips: cleaning (2)
- COVID-19 (Coronavirus) Hygiene Tips. Staying at Home (3)
- COVID-19 Hygiene Tips: deliveries and post (4)
- COVID-19 Hygiene tips: the laundry (5)
- COVID-19 Hygiene tips – social distancing at home (6)
- COVID-19 Hygiene Tips Reducing Food Waste Safely (7)
- COVID-19 Hygiene Tips (8) Money!

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