

***Report on the World Plumbing Council
Participation at the
World Health Organization Informal Consultation
on Risk Assessment and Management of
Droplet Transmission of Microbial Pathogens
With Special Reference to the Sanitation
Connection of SARS CoV Transmission***

Consultation Venue

WHO European Centre for Environment & Health
Via Francesco Crispi 10
Rome, Italy
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Submitted by:

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“Inadequate plumbing systems likely contributed to SARS,” concluded a World Health Organization Technical Consultation. These are words which may forever change the landscape of the relationship between the plumbing industry and the health community. The scope of the following report is to provide the background as to the genesis of this conclusion as well as to describe the involvement of the World Plumbing Council in the Consultation which produced this result.

According to its website, the World Health Organization (WHO) – the United Nations specialized agency for health – was established on 7 April 1948. WHO’s objective, as set out in its Constitution, is the attainment by all peoples of the highest possible level of health. *Health* is defined in WHO’s Constitution as *a state of complete physical, mental, and social well being and not merely the absence of disease or infirmity*. The six core functions of the WHO are:

- Articulating consistent, ethical and evidence-based policy and advocacy positions.
- Managing information by assessing trends and comparing performance; setting the agenda for, and stimulating research and development.
- Catalysing change through technical and policy support in ways that stimulate cooperation and action and help to build sustainable national and inter-country capacity.
- Negotiating and sustaining national and global partnerships.
- Setting, validating, monitoring and pursuing the proper implementation of norms and standards.
- Stimulating the development and testing of new technologies, tools and guidelines for disease control, risk reduction, health care management, and service delivery.

Consistent with these functions, from the first public recognition of the existence of a new disease known as Severe Acute Respiratory Syndrome (SARS), the WHO became immediately involved to the fullest extent of its capabilities. From the initial outbreak in

November 2002 through July 2003, the WHO initiated a number of investigations and convened multiple conferences to tackle the SARS onslaught. Two of the most comprehensive investigations related to the Amoy Gardens Apartment Complex (see attachment 1) and the Metropole Hotel (see attachment 2).

By July 2003, the WHO had published their Final Report pertaining to both of these environmental investigations. Those reports (attachments 1 & 2) are now posted on the WPC website at www.worldplumbing.org. Additionally, on 17 – 18 June 2003, the WHO convened a heavily attended Global Conference on SARS in Kuala Lumpur, Malaysia. During this conference, breakout groups in the areas of epidemiology, laboratory, animal studies, and environmental health addressed SARS from their particular area of expertise. The results of their efforts were compiled in a report entitled, "*Severe Acute Respiratory Syndrome (SARS): Status of the outbreak and lessons for the immediate future*". This report is also posted on the WPC website (see attachment 3).

With the aforesaid reports serving as a foundation, the WHO determined to hold an informal consultation on Risk Assessment and Management of Droplet Transmission of Microbial Pathogens, with special reference to the sanitation connection of SARS CoV transmission. The Consultation was scheduled to convene in September 2003 in Rome, Italy. The list of invited participants was limited to representatives from the Centre for Water and Waste Technology (Australia); Environmental Health Branch, NSW Health (Australia); U.S. Environmental Protection Agency; Canadian Science Centre for Human and Animal Health; Government of Hong Kong Architectural Services Department; Health Protection Agency (London, U.K.); Kiwa (Netherlands); Swedish Institute for Infectious Disease Control; a professor from the University of North Carolina Department of Environmental Microbiology (USA); and a representative from the plumbing industry.

The objectives of the Consultation were as follows:

- I. Review and update available transmission of faecally-shed viruses through droplet/aerosol inhalation.
- II. Recommend a framework for risk assessment/risk management analysis for faecal droplets transmitted viruses in general, and SARS CoV in particular.
- III. Propose reasonable assumptions for inclusion in the above, based on information available on SARS CoV and the available epidemiological information.

The decision to include a representative from the plumbing industry at this Consultation otherwise attended solely by representatives from the health and environmental sectors may have resulted, in part, from the close working relationship the WHO and the World Plumbing Council have established in recent years. Over the last three years, the WHO and the WPC have joined together to produce the *Guidelines on Health Aspects of Plumbing*, a document created through the efforts of many WPC members. In the course of working together on this document, it became quite apparent to the WHO that the plumbing industry plays a vital role in protecting the world's health and preventing the spread of disease. Thus, when it came time for the WHO to convene a panel of experts to address the spread of SARS, it was a natural progression for the WHO to turn to the WPC for assistance. Once the invitation to the WPC was issued, calendars were consulted and a decision was made for a WPC representative to attend this Consultation.

As background material, the meeting participants were provided with copies of the aforementioned reports as well as the draft report entitled, "*Virus Survival in the Environment With Special Attention to Survival in Sewage Droplets and Other Environmental Media of Fecal or Respiratory Origin*", prepared by Mark D. Sobsey, Ph.D., and John Scott Meschke (posted to the WPC website as attachment 4). The agenda for the three-day meeting included the following:

- A. An update on the current status of SARS.

- B. Presentation of cases of sanitation-related SARS transmission.
- C. Review of sanitation-related microbial infections with an emphasis on faecal droplet transmission.
- D. Review of risk assessment methods and procedures.
- E. Risk management: parameters in building regulations and inspection.
- F. Development of a risk assessment/management framework for SARS and infections with similar transmission pathways.
- G. Conclusions and recommendations.

During the first day, two reports were presented illustrating the extent to which the plumbing industry can play a significant role in the SARS battle. First, Marigold Lai, Project Director, Architectural Services Department, Hong Kong Special Administrative Region Government presented a report (posted to the WPC website as attachment 5) entitled, “*Risk Management: Parameters in Building Regulations and Inspections*”. Henry Hung, a WPC Executive Board member who resides in Hong Kong, provided some of the information contained in Ms. Lai’s report. I then supplemented Ms. Lai’s report by presenting additional concerns of the plumbing industry, which needed to be addressed during the Consultation.

The final day-and-a-half of the meeting was devoted to the development of a risk assessment/risk management framework for SARS and infections with similar transmission pathways. Although the majority of medical experts and scientists participating in the meeting may have been initially skeptical about involving the plumbing industry, during the breakout sessions, it became apparent that the contribution we could make to battling SARS had earned newfound respect and admiration.

A clear indication of the role our industry must now assume can be found in the text of the attached press release (see attachment 6) issued shortly after the conclusion of the

Consultation. As noted by Dr. Jamie Bartram, Head of WHO's Water, Sanitation and Health Programme:

“With this Consultation, WHO is helping its Member States appreciate the need to assess and manage the health risks associated with inadequate plumbing and sewage systems. It has documented lessons learned, it has pointed to risk assessment and management tools to be better prepared in case of future outbreaks and it has listed concrete measures and regulatory frameworks for the prevention of faecal droplet transmission of disease-causing viruses. This information will be brought together in a guidelines document.”

In the near future, the WHO will be issuing a consensus statement on behalf of all of the Consultation participants containing the agreed upon findings of the participants. Once issued, the consensus statement will be posted on the WPC website. Meanwhile, the draft consensus statement contains the following themes with regard to the plumbing industry's role in protecting public health and preventing the spread of viruses like SARS CoV.

- 1) The importance of a comprehensive licensing program for plumbing tradespersons, which also will guard against unlicensed practitioners performing work. Such a program will reduce problems, which arise when unlicensed practitioners are involved in implementing safety procedures.
- 2) The importance of providing a qualified workforce and bona-fide training programs to ensure the availability of competent tradespersons in the plumbing industry.
- 3) Ensure compliance with health based regulations and standards by uniformly adopting and applying a comprehensive code of practice throughout province(s), state(s) or nation.
- 4) Provide a comprehensive conformity assessment and quality assurance program to ensure that products and materials used in plumbing systems are of high quality and meet minimum performance standards and the minimum requirements of the applicable code of practice.
- 5) The plumbing industry should play a critical role in ensuring compliance with a “*Water Safety Plan*” established either by statute, regulation or code of practice.

- 6) Provide long-term interventions that will contribute to the control of the spread of virus-laden droplets. Overall national strategies may include interventions in design, construction, operation, licensing and certification.

As noted by Dr. Bartram, the WHO will also be issuing a “*Guidelines*” document memorializing some of the conclusions derived at the Consultation. These guidelines will highlight the role our industry can play in preventing another widespread outbreak of SARS or a similar disease(s).

In conclusion, I wish to thank the WPC for the opportunity to have been its representative at this Consultation. I believe that the documents emanating from this meeting clearly illustrates a realization by the health industry of the critical role the plumbing industry plays in protecting the world’s people and I am grateful to have been permitted to participate in this event.

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Meeting Agenda and Participants List (see attachment 7)

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All referenced press releases can be found on the WPC site at www.worldplumbing.org, or at the WHO site at www.who.int.