Reply

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Sir,

Gilbert and colleagues1 (this issue) make several valid points. As they correctly point out, our understanding of the risks and benefits of biocide use is incomplete. Inevitably, therefore, much of what is written on the subject has to be based on opinion, and that opinion would be expected to differ between individuals according to their background.

There are, however, some misleading statements in the letter. The authors criticize my assertion that the public are led to believe that their homes are ‘dangerous places, heavily contaminated with virulent microorganisms’, but fail to provide any objective evidence that the public are given accurate information in this field. A quick review of tabloid headlines, television advertising and the promotional literature for biocide products clearly exposes a view that the public need to be protected from pathogens in the home. The authors justify their view that homes are indeed microbiologically hazardous by citing published studies, but infer rather too much.

The paper by Barker et al.2 describes examples of viral transmission including evidence that bacteriophage can be spread via door handles. This study emphasizes the importance of basic hygiene and refers to a variety of studies, only one of which took place in the home. Hardly a great endorsement of domestic use of biocides. Similarly, Bloomfield3 describes environmental contamination with Campylobacter without giving good justification for use of biocides. Most authorities acknowledge that the best defence against food-borne Campylobacter infection is good practice rather than biocide use.

Gilbert and colleagues then go on to state that ‘evidence from home-based studies shows that use of a product with appropriate antimicrobial properties in addition to cleaning gives an additional margin of safety by increasing the probability of achieving a satisfactory result’. I am unclear what this satisfactory result is. The paper by Josephson et al.4 describes a reduction in environmental contamination by the use of a quaternary ammonium compound. This is hardly surprising, but the study gives no evidence that such a reduction is associated with any clinical benefit. Cogan et al.5 demonstrate a reduction in environmental Campylobacter and Salmonella by the use of chlorine-releasing agents. The demonstration that fewer sites yielded positive cultures is not proof that use of chlorine-releasing agents reduces the risk of clinical disease. I would maintain, therefore, that advocating biocide use in the home is an activity of unproven benefit.

There is also some confusion about the definition of resistance. This is a term which implies that the strains are no longer susceptible as the wild-type. To regard strains as resistant only if clinical failure is demonstrable would label intermediate penicillin-resistant pneumococci as susceptible, and would never have alerted the microbiological community to the problem of penicillin-resistant Neisseria gonorrhoeae. Surely decreased susceptibility without loss of efficacy is the first step towards a genuine resistance problem. Perhaps the term ‘non-native’ might be better, but this is clumsy and most microbiologists find the term ‘resistant’ more useful.

Lastly, I have difficulty understanding the final point in the letter. Gilbert and colleagues urge us to ‘stop focusing so entirely on the idea that effective home hygiene means either antibacterial or non-antibacterial products’, but offer no alternative. Their suggestion that we should ‘become more effective in communicating what good home hygiene really means’ is vague and does not address the concern that inappropriate use of biocides in the home may have disadvantages. I would define good home hygiene as a recognition of the importance of cleaning and rinsing as well as adherence to good practices such as the separation of cooked and uncooked food.

References
