

| <b>Section A: CPHE to complete</b>  |  |
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| <b>Name:</b>  | Lucy Yardley   |
| <b>Job title:</b>   | Professor of Health Psychology   |
| <b>Guidance title:</b>  | Antimicrobial stewardship - changing risk-related behaviours in the general population   |
| <b>Committee:</b>   | PHAC-A   |
| <b>Subject of expert testimony:</b>   | Presentation of unpublished sub-group and process analyses of trials of digital interventions for hand hygiene and presentation of recently published trial of self-care for self-limiting illness |
| <b>Evidence gaps or uncertainties:</b>  | [Please list the research questions or evidence uncertainties that the testimony should address]   |
| <ul style="list-style-type: none"> <li>- Is the PRIMIT digital hand hygiene intervention suitable and effective for all sectors of the population?</li> <li>- What are the essential ingredients of the PRIMIT digital hand hygiene intervention?</li> <li>- Is the Internet Dr digital intervention for self-care for self-limiting illness effective in reducing consultations and antibiotic use?</li> </ul>   |  |
| <b>Section B: Expert to complete</b>  |  |
| <b>Summary testimony:</b>   | [Please use the space below to summarise your testimony in 250 – 1000 words – continue over page if necessary ]  |
| <p><b>Note: confidential data have been redacted from this testimony</b></p> <p>The PRIMIT intervention reduced respiratory and gastrointestinal infections in the user and members of their family over a four month self-report period, and reduced consultations and antibiotic use over a one year period (based on medical records). Sub-group analyses from the PRIMIT trial were presented showing that the intervention was [REDACTED] sub-groups examined. These were; men and women; older and younger people; people with and without children under 11 living with them; people with higher and lower levels of social deprivation [REDACTED]; people with and without heart and lung disease; large and small families; people with and without more than 2 consultations for respiratory illness in the past year.</p> <p>Process analyses indicated that likely effective ingredients were contained in the first PRIMIT session, which had much the greatest effect on self-reported behaviour. This session included: motivational messages explaining how infection is transmitted by hand, and convincing users that hand hygiene can reduce infection in themselves and their family; advice to wash hands at least 10 a day; an interactive personal planner to help people identify suitable times of day to increase handwashing (when most feasible and necessary), including: before eating with hands (e.g. snacks); after using the toilet; after coming home after potential contact with infection (e.g. travelling, at work); when infected and after cold/cough hygiene (blowing nose etc.).</p> |  |

Uptake of the intervention in the trial was very low, suggesting that additional methods of promoting and supporting hand hygiene are required. However, qualitative process analyses indicated that most people took part in the trial for altruistic motives (for the benefit of science) rather than because concerned about infection, Process analyses indicated that perceived risk of infection was an important predictor of handwashing, suggesting that more motivated populations (e.g. those perceiving themselves at highest risk, or in a serious flu pandemic) might well take up and adhere better to the intervention, leading to greater effect sizes.

Findings presented from the trial of the Internet Dr intervention provided evidence that it could reduce consultations in those with respiratory infections by triaging them to consult NHS Direct or self-care when appropriate. This study only provided weak evidence, as it was a feasibility trial and not powered to test for reductions in antibiotic use. However, a previous feasibility trial (included in the studies already considered by this committee) also showed a trend towards reduced consultation, and in combination these studies provided preliminary evidence for the effectiveness of digital support for triaging and self-care.

#### **References (if applicable):**

Little P, Stuart B, Hobbs F, Moore M, Barnett J, Popoola D, Middleton K, Kelly J, Mullee M, Raftery J, Yao G, Carman W, Fleming D, Stokes-Lampard H, Williamson I, Joseph J, Miller S, Yardley L (2015) An Internet –delivered handwashing intervention to modify influenza-like illness and respiratory infection transmission (PRIMIT): a primary care randomized trial. *The Lancet* 386, 10004, 1631-1639

Ainsworth B, Steele M, Stuart B, Joseph J, Miller S, Morrison L, Little P, Yardley L. (2016) Using an Analysis of Behavior Change to Inform Effective Digital Intervention Design: How Did the PRIMIT Website Change Hand Hygiene Behavior Across 8993 Users? *Ann Behav Med*. 2016 Dec 1. [Epub ahead of print]

Little P, Stuart B, Andreou, McDermott L, Joseph J, Mullee M, Moore M, Broomfield S, Thomas T, Yardley L (2016) Primary Care randomised controlled trial of a tailored interactive website for the self-management of respiratory infections (Internet Doctor). *BMJ Open* 6 (4) e009769