eSexual health interventions: promising, but more evidence needed

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Chlamydia is a common sexually transmitted bacterial infection, which, when left untreated, can have long-term adverse reproductive health effects.[1] Despite the energetic National Chlamydia Screening Programme in the UK and increases in attendance at sexual health clinics, infection rates have changed little,[2] and re-infection rates are high—up to 30% among people tested a year after treatment.[3]

Chlamydia infection is treatable, and approaches to effective control and treatment are well documented. Increasing the proportion of people with chlamydia who are treated, partner notification, and safe sexual practices, and decreasing time to treatment, are crucial to any programme aiming to reduce prevalence and transmission.[4] Yet evidence suggests that interventions have so far had little success in reaching people at highest risk. Two-thirds of people testing positive for chlamydia in the third National Survey of Sexual Attitudes and Lifestyles had not had a test in the past year, and over three-quarters had not accessed sexual health services in the past year.[5] Furthermore, although chlamydia disproportionately affects economically disadvantaged populations, this increased risk is not reflected in higher rates of attendance at sexual health services.[5]

Clearly, strategies for control and management of chlamydia need to leverage approaches that go beyond conventional service delivery. In *The Lancet Public Health*, Claudia Estcourt and colleagues report the findings of a feasibility study[6] of a fully online chlamydia treatment and management system, an eSexual Health Clinic. Interventions based on information and communication technologies (ie, eHealth) have the potential to increase access to care, change behavioural risk factors, and increase self-management of disease with low costs. Indeed, interventions for which reliable evidence for efficacy is available, such as for smoking-cessation support and diabetes management, are cost effective and feasible on a national scale.[7–9]

Internet and mobile phone delivery could be particularly appropriate for sexual health interventions, for which sensitivity, non-judgmental support, and privacy are required. Trials of eSexual health promotion interventions show benefits in terms of increased safe sex behaviours, testing for sexually transmitted infections, and service use, although some of these trials could have been prone to bias.[10] The main model of online service provision for sexually transmitted infections has been internet-based testing, which involves ordering tests online with either signposting to the clinic for treatment or a telephone consultation followed by an e-prescription or postal treatment. The intervention reported by Estcourt and colleagues differs from existing eHealth interventions aimed at reducing prevalence and transmission of chlamydia in that all elements of the service were delivered electronically. Patients judged to be unsuitable for online care (for example, those with symptoms) were signposted to telephone support and clinic care. The intervention provides a web link to results, an online consultation, links to online health promotion, online partner notification, and an e-prescription for treatment.

The work is innovative and has several strengths. At least among participants recruited from the UK's National Chlamydia Screening Programme, preliminary and provisional data for key outcomes such as time to treatment, and completion of treatment seem similar to, or better than, outcomes achieved in face-to-face services. However, Estcourt and colleagues' data suggest that, for those recruited from genitourinary medicine clinics, outcomes for the online chlamydia-management system could be poorer than those in genitourinary clinics that did not use the intervention, with a lower proportion of diagnosed patients completing treatment. Furthermore, few partners attended for treatment, and the impact on safe sex practices was not assessed.

As the authors point out, their study was on a small scale, observational, and exploratory. The findings have generated ideas for improvement of their eSexual Health Clinic but have provided no robust evidence of outcome. A large-scale assessment of the final package of online chlamydia treatment and management services will be needed to reliably establish effectiveness and cost-effectiveness, with attention to variation in use across different groups in terms of socioeconomic status, age,

gender, sexual orientation, and ethnicity. Careful study design will be needed to determine the appropriate mix of online and face-to-face service provision needed to maintain or improve the quality of, and access to, sexual health services across all patient groups. Because the intervention comprised several interacting components, individual actions, and organisational levels, any assessment of it will need to analyse both the individual and cumulative effects of components, and the likely interaction between them, on the primary and secondary outcomes (proportion treated, time to treatment, safety, and partner notification).

Should the results of such an assessment be favourable, substantial public health benefits could ensue. In the UK, where sexual health services are facing pressure to reduce costs, online sexual health services could help to provide high-quality and accessible health services at low costs for some groups of patients. Ultimately, in view of the potential value of the intervention, transferability would need to be investigated more widely. Several characterising features of the UK population and health system have facilitated development and deployment of the eSexual Health Clinic intervention: the National Health Service (NHS) is the only insurance and health-system provider, digital literacy and mobile phone use are high, electronic laboratory and pharmacy systems are electronically linked, and the Checkurself screening system (a free NHS home chlamydia test) is widely available.

For more on **Checkurself** see http://www.checkurself.org.uk/?

Outside the UK, and particularly in low-income and middle-income countries, the potential relevance of such an intervention could be affected by cost barriers to the client, including costs associated with phones and data subscription, poor access to the internet even in populations with high mobile phone ownership, and non-existent or poorly enforced laws around data privacy. Nevertheless, with necessary country adaptations, the digital interventions comprising the eSexual Health Clinic could offer substantial benefits to populations elsewhere. They have the potential to contribute to the achievement of the reproductive health objectives reflected in the UN Global Strategy for Women's, Children's, and Adolescents' Health and to help to inform the upcoming WHO guidelines on digital health interventions for health-system strengthening within reproductive, maternal, newborn, child, and adolescent health, which is due in early 2018.

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