

## **The impact of private online video consulting in primary care**

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### **Short title: Private video consulting in primary care**

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We have read and understood JRSM policy on declaration of interests and declare the following interests: BH and AM are General Practitioners working in the NHS.

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LP is an Academic Foundation Year 2 Doctor in the Department of Primary Care and Public Health, Imperial College London. He carried out the online searches and wrote the first draft.

BH is a Clinical Lecturer in Primary Care in the Department of Primary Care and Public Health, Imperial College London, and is funded by the National Institute for Health Research (NIHR). He conceived of the idea for the article, redrafted the initial manuscript and all subsequent drafts. GG is Research Fellow in Public Health in the Department of Primary Care and Public Health, Imperial College London. He contributed to planning of the article and reviewed and revised all drafts of the article. AM is a Professor of Primary Care in the Department of Primary Care and Public Health, Imperial College London. He contributed to planning of the article and reviewed and commented on the final draft. All authors approved the final manuscript.

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## **Abstract**

Demand for online access to services has led to a recent proliferation of companies providing video consultations with private general practitioners via web-based or smart phone apps. We identified nine private providers registered with the Care Quality Commission offering video consultations with general practitioners. These offer prompt and affordable access to health advice and services such as private referrals, sick certification and prescriptions. Most mentioned on their websites that they could prescribe antibiotics, but none made any statement about appropriate use of antibiotics or antibiotic stewardship. Internet searches relating to obtaining antibiotics returned advertised links to one private provider.

Increasing online access to primary healthcare is a key government priority. However, there is a lack of evidence for the safety and efficacy of online consulting, with the inability to carry out physical examination limiting effective medical assessment. Evidence for video consulting improving patients' access to primary care and reducing general practice workload is also lacking. While the existence of affordable private video consultations may reduce reliance on National Health Service primary care, there is a risk that it may increase pressure on National Health Service general practice services through supply induced demand, and on National Health Service secondary and urgent care services through defensive practices.

Continued expansion of private companies suggests a demand for video consultations from patients. Concerns about safety and working practices highlight a need for careful and tailored regulation. There may be opportunity for collaboration between National Health Service and private providers of video consultations with general practitioners in achieving aims of increasing online access to primary healthcare, however there is an urgent need for research to understand the safety and effectiveness of video consulting and its impact on patient access and general practice workload.

Workforce and resource pressures in the United Kingdom National Health Service mean that it is currently unable to meet patients' expectations of access to primary care.<sup>1</sup> In an era of near-instant electronic communication, with mobile online access available for most shopping and banking services, people expect similar convenience in healthcare. Consequently, increasing numbers of web-based and smartphone apps now offer same-day 'virtual consulting' in the form of Internet videoconferencing with private general practitioners.<sup>2</sup>

Whilst affordable and accessible private primary care may be attractive to many patients, the existence of these services raises several questions. A particular concern, given continued development of antimicrobial resistance,<sup>3</sup> is that some companies appear to use ease of access to treatment with antibiotics as an advertising strategy. We examine online video consulting with private general practitioners in the UK, considering its potential impact on patients and the National Health Service, and its particular relevance to antimicrobial stewardship.

### **Online video consulting with private general practitioners in the United Kingdom**

Greater integration of information technology in healthcare is a key strategy of the United Kingdom Government, which has promised to increase use of digital technologies to facilitate access and communication between healthcare providers and patients.<sup>4</sup> Funding is now available to support general practices in developing in this area.<sup>5</sup> However, focus has tended to be on e-consulting, where patients communicate with general practitioners via an online form.<sup>6</sup> Whilst some general practices have experimented with innovations such as video consultations,<sup>7</sup> none of over 300 National Health Service general practices surveyed in 2015 was offering this, and most had no intentions to do so.<sup>8</sup>

We searched the online register of the Care Quality Commission, which inspects United Kingdom healthcare providers, for 'Doctors/GPs' registered to provide 'Phone/Online advice' or as 'Mobile Doctors'. Of 557 providers, we identified seven private companies offering video consulting with general practitioners. We then examined the providers' own websites to characterise their services.

All seven providers had an attractive user interface via a website or a smartphone app, with one also offering a smartwatch app. A key marketing strategy is almost immediate appointment availability, and opening hours generally exceed National Health Service general practice in-hours provision, ranging from 8am-8pm Monday to Friday, to 24 hours per day 365 days per year. Each company provided a range of non-emergency primary care services including health assessment and diagnosis, private referral letters, sickness certificates, and prescription of medications. Some restricted their services to minor illnesses, while others listed exclusions

such as prescription of certain medications; all emphasised that they do not deal with emergencies.

The majority (5/7) offered consultations on a sessional (£20-60), monthly (£5-15) or annual basis (£50-130), with costs comparing favourably with other monthly subscriptions acceptable to United Kingdom consumers, such as mobile telephone contracts. All but one included private prescriptions or referral letters; the remaining provider charged £5 for this. The cost of prescribed medication itself is charged at the dispensing pharmacies' private rates. Several companies pointed out that this will often be less than an National Health Service prescription charge, though for some medications it will be considerably more.

### **International perspective**

Existence of similar services is already widespread in the United States of America and the European Union, although lack of a central registration body makes analysis more difficult, with multiple providers offering video conferencing with primary care doctors. Costs are comparable between the United Kingdom and United States of America (sessional \$38 - \$50 [£30 - £40]; monthly \$9 - \$ 99 [£7 - £80]; annual \$150 - \$170 [£120 - £137]). The use of an online healthcare model has also been adopted by secondary care service providers in Australia,<sup>9</sup> where large, sparsely populated territories make patient access and face to face consulting challenging.

### **Impact on antibiotic prescribing**

Antibiotic use is higher in primary care than any other healthcare setting,<sup>10</sup> with inappropriate prescribing contributing to antibiotic resistance. Whilst the decision to give antibiotics will be that of individual doctors and dependent on clinical need, the nature of private video consulting may lead to increased prescribing.

Four of the seven services we identified specified on their websites that they would prescribe antibiotics. Internet searches for 'get antibiotics', 'prescribe antibiotics', 'antibiotic prescription', 'buy antibiotics' and 'private antibiotics' all returned the top result as an advertising link to a general practice video consultation service promising an antibiotic prescription 'in minutes'. One website listed seven antibiotics, with examples of conditions they are used to treat. Although it did specify that antibiotics are for bacterial infections and detailed possible side effects, including effects on 'friendly bacteria', there was no explanation of the distinction between viral and bacterial or self-limiting conditions, or the harms of

inappropriate prescription. None of the websites made any mention of appropriate use of antibiotics or of antibiotic stewardship.

The inability to examine patients may have a significant impact on prescribing, including use of antibiotics. Whilst a physical examination may sometimes add little to the decision making process in upper respiratory tract infection,<sup>11</sup> an entirely normal examination can effectively exclude pneumonia,<sup>12</sup> avoiding the need for antibiotics. The uncertainty inherent in video consulting, where examination is impossible, might be expected to result in increased antibiotic prescription, due to clinicians feeling a need to ‘play it safe’.<sup>13</sup>

Patient expectations, and clinicians’ perception of these, play an important role in antibiotic prescribing.<sup>14</sup> Advertisements suggesting easier access to antibiotics may result in patients having higher expectations, thereby increasing prescribing. Research in other settings has suggested that private healthcare providers may have higher antibiotic prescribing rates,<sup>15</sup> and general practitioners may feel further pressure to prescribe when carrying out private online consultations. Provision of antibiotics is known to be associated with increased patient satisfaction,<sup>16</sup> and in a competitive online environment, private companies will be particularly reliant on positive patient feedback.

### **An opportunity for antimicrobial stewardship?**

Video consulting with private general practitioners represents one of an expanding number of routes to obtaining antibiotics,<sup>17</sup> which collectively threaten efforts to reduce inappropriate prescribing. However, doctors working for online general practice services in the United Kingdom will be on the general practice register and consequently subject to regular peer appraisal and General Medical Council revalidation, and will be familiar with the principles of antibiotic stewardship; indeed, they will generally be either current or former National Health Service general practitioners. There may be opportunity therefore for National Health Service and public health policy makers to engage with providers on the subject of antibiotics; their novel mode of patient access has potential for patient education, improving health literacy on infection, antibiotics and antimicrobial resistance, where it is currently lacking.<sup>18</sup>

### **Safety of online video consulting**

Whilst there is evidence that video consulting is acceptable to patients, at least those of younger age,<sup>19</sup> its safety and clinical efficacy in primary care remains largely untested,<sup>20</sup> and limited research on primary care consulting via e-mail has failed to provide sufficient evidence to make recommendations for clinical practice.<sup>21</sup>

Safety concerns have been raised regarding general practice video services specifically: a recent Care Quality Commission inspection of one provider criticised it for providing neither safe nor effective care. One key area highlighted was the identification of children seen via online video consultation. Clearly it is essential to establish the identity of patients when providing medical advice and prescriptions. When consulting children, ascertaining their identity and relationships with accompanying adults also has important safeguarding implications. However, the remote nature of online consulting makes such identification significantly more difficult, with consequent potential for error and abuse.

Video consulting does offer face-to-face interaction, but the lack of any possibility of physical examination or further investigation inevitably leads to questions about the safety of healthcare assessments, a concern also expressed by patients.<sup>9</sup> Furthermore, in the same way as most private providers, private online general practitioners lack access to patients' National Health Service patient records, with the potential for important information such as allergies or interactions to be missed. This may also make it difficult to establish whether patients have received the correct monitoring when prescribing high risk medications. Nevertheless, all the websites we examined mentioned the need for communication with patients' National Health Service general practitioners, with provision of details of any consultation passed on.

Finally, whilst all the websites we examined stated that they used encryption or security software to protect individuals' data, lack of security provided by many health and wellness apps approved by the National Health Service<sup>22</sup> highlights the risks patients may take in sharing personal health data online with private third parties.

### **Impact on general practice workload, workforce and primary care access**

Promoted to improve system efficiency and give patients better access to primary care advice, evidence for the impact of alternatives to face-to-face consulting on workload and access is limited. Services making use of new technologies have seen slow uptake by patients, and are consequently likely to have little impact on waiting times for appointments.<sup>6</sup> Evidence suggests they do not reduce general practitioners' workload<sup>23</sup> and may even increase it,<sup>24</sup> with potential for patients 'gaming' the system in order to obtain prompt face-to-face appointments.<sup>25</sup>

Nevertheless, provision of an alternative route for patients to access private advice and treatment may be viewed as an opportunity to reduce National Health Service workload, filling the vacuum between patients' expectations and what the National Health Service is able to deliver.<sup>1</sup> By offering consultations at short notice via user friendly interfaces, private online general practice services may represent a useful option for patients seeking health advice early

in an illness. Potentially dealing with the concerns of ‘worried well’, and those with simple administrative requests such as for private sickness certificates, this may reduce the workload burden on National Health Service general practitioners, increasing availability of appointments to those who need them. Availability of early treatment or self-care advice may also reduce demands on out-of-hours National Health Service general practice services and Accident and Emergency departments through earlier resolution of symptoms or answering of patients’ concerns.

However, as patients become accustomed to the level of access allowed by online private providers,<sup>2</sup> expectations of similar responsiveness from National Health Service services may increase. There may also be increased expectations of National Health Service referrals. Costs of specialist care in the private sector remain high. Consequently, where private online general practitioners recommend specialist referrals, for which there may or may not be sufficient indication in the National Health Service, many patients will seek this referral through their National Health Service general practitioners. In addition, the inherent limitations of online consulting in terms of assessment, investigation and follow-up, could lead to defensive practices, with advice to ‘see your own GP’ or ‘go to A&E’ resulting in greater pressure on National Health Service urgent and unscheduled services in a similar way to the NHS 111 helpline<sup>26</sup> and telephone triage in National Health Service general practices.<sup>23</sup> Furthermore, despite relative affordability of private online general practice services, their existence may exacerbate health inequalities, with those able to afford it accessing earlier advice and treatment as well as potentially earlier specialist referral.

General practitioner numbers in the National Health Service are a significant concern, with slow workforce growth despite Government promises for more general practitioners.<sup>27</sup> Online general practice services will recruit from the same limited pool of general practitioners registered with the General Medical Council, raising the concern that they may further contribute, by offering attractive private sector pay and working benefits, to a National Health Service workforce crisis. However, it is possible that the ability to work flexibly for these companies alongside National Health Service practice may in fact strengthen general practitioner workforce retention, allowing general practitioners to continue working part-time in the National Health Service rather than moving to solely private sector work, moving abroad, or leaving the profession altogether.

### **Implications for public health and the National Health Service**



Questions remain about the safety of online consulting and of some private companies' working practices, and appropriate regulation is essential to ensuring that these services offer safe and effective care to patients. This will require a carefully tailored approach on the part of regulators such as the Care Quality Commission. For example, it has not been necessary to develop standards on advertising when assessing National Health Service general practices, but this will be essential in monitoring the actions of private online general practice services. Proliferation of private providers suggests significant public demand for prompt video consultations with general practitioners. Despite limited evidence for improving access to primary care, and potential for increased workload through supply induced demand, greater use of digital technology remains a key government priority. If the National Health Service wants to provide online healthcare services, working with existing private companies may significantly reduce development and set-up costs: these companies are established with tried and tested technology. In fact, collaborations are already taking place, with one National Health Service general practice in West London working with a private provider to offer free video consulting with general practitioners.<sup>28</sup> While this service has been criticised for apparently restricting access for some patient groups, such initiatives call for urgent research to understand the clinical safety and effectiveness of video consulting and its impact on general practice workload and patient access to primary care.

**Table 1. Benefits and disadvantages of video consultations with private general practitioners**

Potential Benefits	Potential Disadvantages
<ul style="list-style-type: none"> <li>• Rapid, convenient access to general practice services</li> <li>• Increased patient satisfaction</li> <li>• Potential to decrease burden on National Health Service primary care</li> <li>• Opportunity to educate patients</li> <li>• Access to rural areas</li> </ul>	<ul style="list-style-type: none"> <li>• Increased antibiotic prescription rates / antimicrobial resistance - contradicts national campaigns</li> <li>• Fragmentation of clinical documentation – contradicts integrated care efforts</li> <li>• Lack of physical examination exposes to misdiagnosis</li> <li>• Increased burden on National Health Service secondary care, due to by-passing of 'gatekeeping'</li> <li>• Increased health inequalities</li> </ul>

**Key messages**

Offering rapid, affordable access to primary care advice, private online GP consulting services are expanding

Concerns about safety and working practices (including antibiotic prescribing) should urgently be addressed

Increasing online access to healthcare is an NHS priority, and there may be opportunity for the NHS to engage with private providers

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