
Digital Innovation

*Online Interventions for
Improving Wellbeing,
Condition Self-Management
and Achieving
Behaviour Change*

June 2016

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Yellow Papers

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The importance
of good physical,
mental and
emotional health



In recent years, there has been a discernible shift of focus in the field of psychology from illness to wellness. The emergence of positive psychology and the science of wellbeing has brought greater interest in establishing the underlying causes of the main two elements that comprise wellbeing: feeling and functioning well. This includes how we feel about ourselves, our future and the world around us.¹

Feelings of happiness, contentment, enjoyment, curiosity and engagement are characteristic of someone who has a positive view of their life. However, there is also wide acknowledgement that an individual will inevitably experience negative factors that impact on their lives. There is therefore also a focus on the importance of sustainable wellbeing, so that when an individual experiences painful emotions, he or she has the capacity to manage them. This is a skill which is essential for long-term wellbeing. Having some control over one's life as well as experiencing positive relationships and having a sense of purpose are all cited as important attributes of wellbeing.

There has long been held an assumption that by simply growing GDP, an increase in wellbeing will also follow. This has more recently been challenged by governmental policies as well as in the field of academic research. Support for the importance of the concept of wellbeing in its own right has been shown by the Prime Minister, who has made it clear that the Government's success is measured by the nation's wellbeing, and not just by the state of the economy. The government committed to improving the nation's wellbeing, and the Office for National Statistics was tasked with developing a set of indicators that measure national wellbeing.² Since the development of these measures, we can see in the 2016 report that 'Overall national well-being has improved.'

Further still, improving the mental health and wellbeing of the UK population has been set as a key objective by the government. In early 2011, the Department of Health launched the mental health outcomes strategy 'No Health Without Mental Health.'³ The government is still standing behind their mental health strategy, releasing the document 'Closing the gap: priorities for essential change in mental health' - building to prevent mental ill health and improving mental wellbeing.

The strategy takes a population-wide perspective to improving mental health and wellbeing, as well as targeting those who are already experiencing mental health difficulties. This in part reflects the direction of travel: moving away from an understanding of mental health that focuses on targeted help for vulnerable groups, and moving towards an approach that balances the promotion of positive mental health and wellbeing at a population level together with treatment. The argument against a completely deficit-focused approach to the delivery of services is based on both financial considerations and the argument that focusing attention on those people who are experiencing mental health difficulties does not, in itself, reduce the overall incidence of vulnerability in the population.²

Good mental health and wellbeing is not only confined across health, but is central to our quality of life.

It is noted in this approach that the importance of good mental health and wellbeing is not only confined across health, but is central to our quality of life. This importance also impacts across a wide range of ‘non-health policy areas’, including education, training, employment and the importance of tackling some of the persistent problems that scar our society, from homelessness, violence and abuse to drug use and crime³. This view is also reflected in the broader perspective of the significance of mental health and wellbeing in the population shown in the Public Health white paper *Healthy lives, healthy people*,⁴ where for the first time equal importance was given to both physical and mental health.

The UK government's 'Foresight' programme uses evidence and analysis from a wide range of disciplines to develop policy and address key issues that will impact on the opportunities and challenges facing the UK over the next 20 years. The 2008 Mental Capital and Wellbeing Project aims to identify the most important drivers of mental capital and wellbeing to highlight where action is most important and how available resources can be better allocated. The project explores the state of knowledge on promoting and maintaining mental capital and wellbeing both now and in the future, and what needs to be done to meet the challenges ahead so that everyone can realise their potential to flourish in the future.

The Centre for Wellbeing at the NEF (the New Economics Foundation) was commissioned by Foresight to look at the academic evidence and to develop key public health messages concerned with how to promote and maintain positive mental health.⁵

Five key messages:

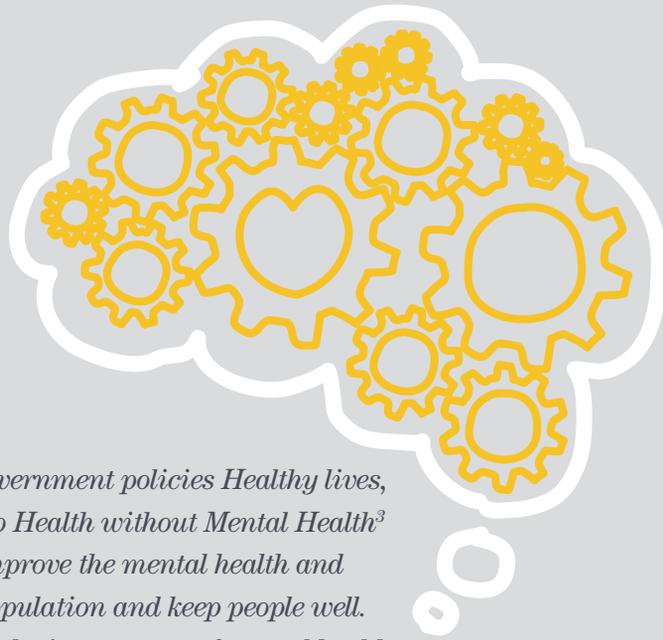
The five ways to wellbeing were developed to reflect the kinds of behaviour, supported by academic evidence, that people can undertake that may lead to improvements in their mental health and wellbeing.⁶

They consist of the following five principles:

- *Connect*
- *Be active*
- *Take notice*
- *Keep learning*
- *Give.*

Given this wider picture, it is a critical responsibility for all working in public health and wellbeing to ensure that as wide a proportion of their populations as possible have simple access to interventions and services that support them to find their own paths to wellbeing. The following section of this paper will explore the potential of online tools in supporting an individual to self-manage their physical, mental and emotional health and wellbeing.

The Evidence -
how web-based
interventions
improve wellbeing,
physical and
mental health



As identified in the government policies Healthy lives, healthy people⁴ and No Health without Mental Health³ identified a need to improve the mental health and wellbeing of the UK population and keep people well. Both policies focus on the importance of mental health as well as physical health, giving equal weight to each concept. It is also widely acknowledged that there is a need to promote self-management for patients with long-term conditions such as diabetes, heart disease or arthritis. Effective self- management programmes have been shown to reduce health care costs and improve quality of life across a range of conditions.⁷

Given this wider picture, it is a critical responsibility for all working in public health and wellbeing to ensure that as wide a proportion of their populations as possible have simple access to interventions and services that support them to find their own paths to wellbeing. The following section of this paper will explore the potential of online tools in supporting an individual to self-manage their physical, mental and emotional health and wellbeing.

The use of web-based interventions in health promotion, mental health and condition management is increasing. This is largely due to the potential to combine the scalability of public health with the effectiveness of personalised, individually tailored interventions that have low marginal costs per additional user. From a patient perspective, web-based interventions can also be highly attractive because they can maintain privacy; in recent years the accessibility and convenience of obtaining information online has increased significantly.⁸

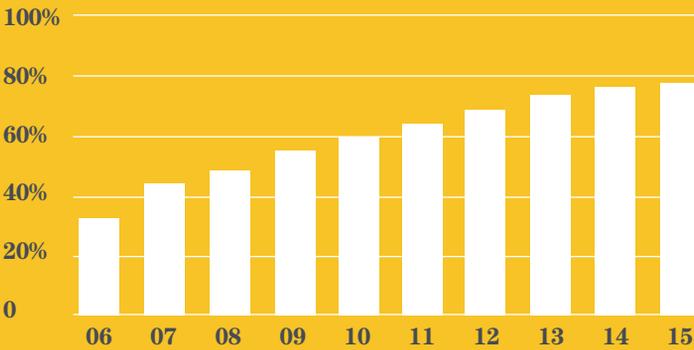
Every year, more individuals are getting online. It is now estimated that globally, there are more 3.4 billion internet users, of which 39% access it on a mobile device.⁸ Social media use has risen dramatically over the past few years, with 2.3 billion people now active on social media.⁹

The use of web-based interventions in health promotion, mental health and condition management is increasing.

Individual and household internet access (UK) at a glance:¹⁰

- In 2015, 22.5 million households in Great Britain had an internet connection, representing 86% of households.
This was up from 84% in 2014 and 57 % in 2006
- In 2015, 78% of adults in Great Britain used a computer every day
- 45% of adults aged over 65 access the internet daily
- Of all adults ages 16-24 years old, 96% accessed the internet on the go
- Social networks are used by 61% of adults (aged 16+) and 79% of them accessed social media daily
- The percentage of adults who go online every day has increased across all age groups since 2006, with the largest increase taking place amongst those individuals aged over 55 years.

Figure 1: Daily internet use by adults, 2006 to 2015, UK



Base: UK households from 1998 to 2004. Great Britain households from 2006 to 2015.

The use of information and communication technology (e-health) is expected to lead to improvements in healthcare quality, primarily through effective communication and efficiency.

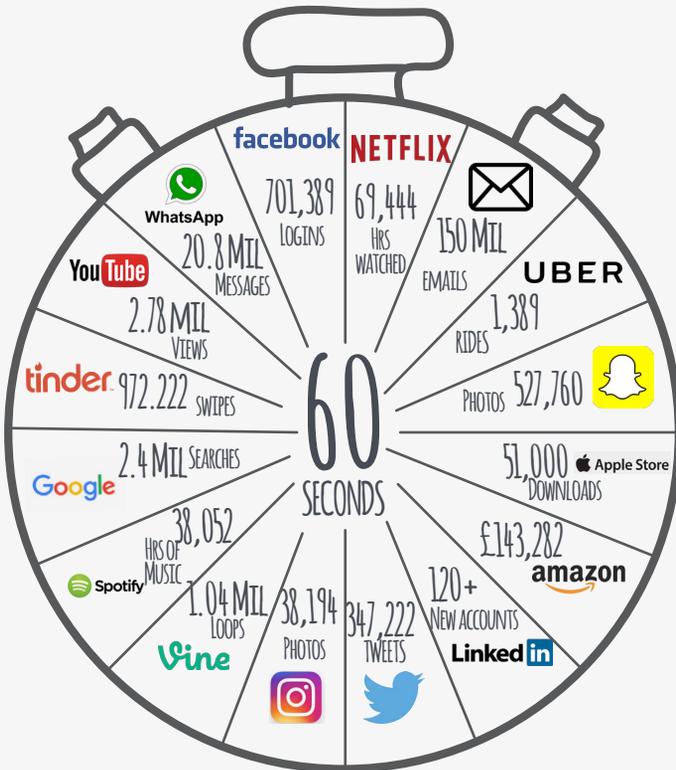
Web-based interventions are also built for inclusion. Health information can be presented in an accessible and comprehensible format (in bite-sized chunks using video graphics and audio) and can be made readily available at the moment of need. This approach is helping to address health literacy levels in communities across the UK.

Web-based interventions can interact with the user by providing tailored healthcare advice and by enabling users to communicate together. Together, there is a real opportunity to provide an online platform with the forms of interactivity for individuals to connect online, much like social networking sites. These can then be used to provide formal behaviour change support, decision support and peer support. Increased social support has been found to be an important component in sustaining behaviour change.¹¹

The web has increasingly become an open arena where people meet, discuss their ideas and engage in dialogue with each other.

The web has increasingly become an open arena where people meet, discuss their ideas and engage in dialogue with each other. Users continue to spend more time in social media than in any other category of website. Social networks and blogs now account for around 46% of all time spent online in the UK.¹² Social media has increasingly become a mainstream vehicle for information and experience sharing.

What happens in 1 minute on the internet:¹³



There are two main populations to target for behaviour change in this sense:

- Healthy people who are engaging in unhealthy behaviours likely to result in future physical health problems
- People who are currently unwell and need to change their health behaviours to prevent further deterioration of their health status.¹⁴

Online web-based interventions have been shown to work in a variety of health settings and formats.

The use of Interactive Health Communication Applications (IHCAs) was shown to demonstrate a positive increase in knowledge, social support, clinical outcomes and self-efficacy.

Web-based interventions and online tools can also be used to assist self-management for individuals with long-term conditions. In this instance, these could be made up of reminders and prompts to assist with medication management and the infrastructure to manage interactions with health professionals. Online tools and trackers have been successfully used to assist individuals in adopting healthy behaviours such as healthy eating, exercising more, stopping smoking and reducing alcohol intake. The effectiveness of internet-based interventions is proven to be enhanced by the use of additional methods of communicating with participants, especially the use of SMS text messages.¹⁵

Online web-based interventions have been shown to work in a variety of health settings and formats. Interactive Health Communication Applications (IHCAs) are computer-based, usually web-based, information packages for patients that combine health information with social support, decision support, or behaviour change support. In a study identifying 24 randomised control trials involving 3739 participants, IHCAs appeared to have largely positive effects on users, in that users tend to become more knowledgeable, feel better socially supported, and may have improved behavioural and clinical outcomes compared to non-users. Specifically, the use of IHCAs was shown to demonstrate a positive increase in knowledge, social support, clinical outcomes and self-efficacy.

Web-based interventions have also been shown to work through systematic reviews concerning specific behaviours such as smoking cessation, reducing alcohol consumption, safer sexual behaviours and increasing physical activity. In particular, web-based, tailored, interactive smoking cessation interventions, have been found to be more effective compared with untailed booklet or e-mail interventions and are shown to demonstrate higher levels of user satisfaction.

The success of online tools to support behaviour change relating to the management of long-term conditions¹⁶ and lifestyle factors¹⁷ has been also been documented. In recent years, there has been an increase of online tools and trackers to help individuals monitor their lifestyle related behaviours and receive personalised tips and feedback to help them achieve their goals.¹⁸ Research has suggested that using tools to break down large goals into smaller, more manageable parts may help patients better manage long-term disease such as diabetes.

Research has also demonstrated the potential for more structured behavioural-led weight loss websites to produce greater weight loss and maintain a greater loss than self-help commercial websites. Using goals and smaller tasks that get patients to their ultimate goal, step-by-step, has also been found to be useful for goals like weight loss and exercising several times a week. Using online tools and trackers to provide feedback such as progress charts, physiological calculators and journals has been shown to be the best predictor of weight loss whilst an individual is losing weight. The “social support” factor such as web chats and biographical information has been shown to be the best predictor during maintenance. Overall, weight loss in an online weight control programme has been found to be most positively related to dynamic web features that provided feedback, support and motivation to participants.¹⁵

Web-based interventions have been shown to be effective in mental health as well as physical health and lifestyle related behaviour change. Interventions based on computerised cognitive behavioural therapy (CCBT) have been shown to be acceptable, effective and cost-effective across a range of mental health problems including anxiety, moderate depression and phobias. Qualitative data also suggests that alternative to using CCBT, social networks and personal stories may be used to provide emotional and informational support by reading about 'someone like them' who has had a similar experience in them managing their health or a specific condition.

The use of computer mediated social support (CMSS) networks for single mothers with young infants concerned with parenting issues has been shown to be particularly effective.

Web-based interventions and online support have been shown to be particularly effective within certain population groups. The use of computer mediated social support (CMSS) networks for single mothers with young infants concerned with parenting issues has been shown to be particularly effective. The network operated 24 hours per day over a period of 6 months, permitting public message exchanges, private e-mail and text-based teleconferencing for as many as 8 participants at any one time.

During the 6 month intervention, the network was accessed over 16,670 times and descriptive analysis of the messages exchanged on the network disclosed that 98% of the replies to concerns posted in the public forum provided positive social support. The majority of the supportive replies fell into the category of emotional support, followed in order by informational and tangible support. Programme evaluation revealed changes in the level of parenting stress, with mothers who participated regularly in this CMSS community more likely to report a decrease in parenting stress following the intervention.

Specific subpopulation groups in which web-based interventions have also been shown to work included severely disadvantaged groups such as drug users. Projects to develop and implement electronic access to HIV/AIDS information resources are being developed in the USA.

Action - the case for
creating an online
health ecosystem

The Medical Research Council (MRC) suggests that all successful web-based interventions will have a strong theoretical foundation for developing, evaluating and implementing complex interventions. Theoretical frameworks for the intervention should be selected and used in both development and evaluation; the key constructs of the theory must be identified and consideration given to how the intervention will act on these constructs.

At ICE, we provide a theoretical underpinning to all our behavioural change research and interventions. Naturally, this also underpins all of our web-based intervention work.

Please see our next 'yellow paper' on behavioural theories and behaviour change to highlight the key constructs and how they address each behavioural determinant or a web-based intervention.

We believe that web-based interventions are an essential tool in promoting and facilitating wellbeing by harnessing the power of social and digital media to connect people together, both virtually and in the real world.¹⁹

At its most effective, the online environment can be a driving force behind building a truly asset-based community – by empowering people and communities to realise their own potential and sense of responsibility to each. We believe that an effective, co-created and community-owned health ecosystem is the ideal starting point to build resilience and sustainability within communities, and to create a culture of wellbeing and mutual support.

At its most effective, the online environment can be a driving force behind building a truly asset-based community.

The UK government's digital service design principles should form the basis of any effective online health ecosystem:

- 1. Start with needs*
- 2. Do less*
- 3. Design with data*
- 4. Do the hard work to make it simple*
- 5. Iterate, then iterate again*
- 6. This is for everyone*
- 7. Understand context*
- 8. Build digital services, not websites*
- 9. Be consistent, not uniform*
- 10. Make things open: it makes things better.*

It is by employing such an approach that public health professionals and organisations will create sustainable, needs-led online resources that will facilitate the culture of wellbeing and community support to help people to live longer, healthier, happier lives.

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