



SOCIAL MEDIA AND HEALTH: IMPLICATIONS FOR PRIMARY HEALTH CARE PROVIDERS

CRESI RESEARCH REPORT

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Summary

This report is the second deliverable of the "Digital Inclusion and Social Knowledge Media for Health: Frameworks and Roadmaps" project. The first discussed the concept of social and digital exclusion whilst this report focuses on the emerging phenomenon of social media. The report outlines current knowledge on the users and usages of social media for health and goes on to discuss social media in the context of a continuing focus (ref. D1.1) on the areas of mental health, smoking cessation and teenage lifestyles. The report concludes with an outline of an approach to a 'social media strategy' and with suggestions for directions for future research.

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EXECUTIVE SUMMARY

This report is the second of two produced by the University of Essex examining the role of new media in healthcare with a particular focus on the health challenges facing Solihull Care Trust. It draws on the first report to further develop a framework for considering the role of new media and specifically social media in helping SCT achieve some of its health service provision objectives.

Overall at the time of writing the use of social media (in contrast to web-based information sources and more familiar communication tools such as email) is still generally restricted to younger age cohorts although recent US research does suggest that education, income or other forms of social disadvantage do not play a particularly strong role in the level or effectiveness of the use of 'social networking services' for health purposes by internet users.

Given the evidence that people who have satisfactory levels of social support tend not to get ill, to have longer life expectancies or recover more readily if they do get ill then it becomes readily apparent that any interventions which can provide additional social support and which can also leverage the power of these social networks to increase positive health outcomes should be considered.

Our review of the evidence to date suggests that as yet there is a lack of systematic evidence on the clinical outcomes of 'social media' interventions. However the evidence available does suggest that a range of social media services might be of use in tackling a number of health conditions or public health priorities and we would argue, based not only on this evidence but also on the well-known evidence of the role social relationships play in health, that the role of social media should therefore be explored in more depth perhaps through the implementation of small scale trial services with groups more likely to be their early adopters which have the capability to be scaled up if they should prove successful.

By considering the different kinds of health care capabilities that can be supported by weak ties (social ties between generally dissimilar people but who share a common interest) and contrasting these with those that can be supported by strong ties (relatively scarce relationships between generally similar and sometimes related people) we show how different kinds of health care interventions need to carefully consider which kinds of ties they can best leverage. In some cases a mixture of approaches may work best but in others – such as mental health where anonymity might be key or in the support of long term carers – a focus on weak ties might have greater efficacy. In contrast situations where strong ties might have more power – such as in the reduction of teenage pregnancy or drug abuse – might require a different approach that recognises the tendency for such ties to be locally oriented.

Finally in common with our first report but perhaps with even greater emphasis we suggest that social media interventions need not only to acknowledge the history of social communication and the role of social relationships (as opposed to purely information consumption) in health but also to engage their potential users in the generation and maintenance of such services if they are to continue to be relevant, engaging and sustainable.

We provide examples of such interventions including a UK wide initiative focused on smoking cessation to illustrate this principle which illustrates the potential for citizen-driven interventions which may be both more effective, more engaging and substantially lower cost.

What is now required is the development of a programme of research to track the efficacy of such interventions and activities over an extended period of time in order to systematically assess their relative costs and benefits.

1 BACKGROUND

This report builds on our initial analysis of the relationship between social and digital exclusion in Solihull to consider the potential role of 'social media' in health care. In doing so we draw attention not only to the relatively long history of 'social media'¹ but also to the 'social' nature of health and the role that resources of various kinds gained through social relationships (i.e. *social capital*) can play in health.

As we will discuss in more detail below 'social media' or 'Web 2.0 services' are taken to mean (generally) internet based services that focus on a peer to peer (i.e. citizen to citizen) model of information exchange and communication. The concept is therefore contrasted with 'Web 1.0' services which are seen as predominantly central provision of information (content) through dominant players such as media companies, large institutions, governments and, in this case, health service providers.

The 'social media for health' model therefore emphasises:

- The role of 'self-provision' of information/content/media by any member of society at relatively low cost for consumption by any others as represented by YouTube's 'Broadcast Yourself' motto.
- the role of citizen information creation through tools to support the construction of information resources through collaboration. Such tools provide the means for the capture of 'alternative' views and tacit knowledge that is unlikely to be provided by 'official' information sources.
- the provision, by citizens of independent feedback on experiences of specific health service providers and treatments.
- the role of citizen to citizen communication in the provision of social support to and between those with health conditions and to and between those who provide care of all kinds
- the possibility of supporting more meaningful and collaborative relationships between practitioners, carers and those with health problems.

It is worth noting that the success of 'social media' tools has already led to the adoption of many tools and services which support existing models of health service provision. Thus the UK NHS has adopted 'citizen feedback' through the implementation of a 'customer rating' and satisfaction model via 'NHS Choices', has made use of services such as YouTube to support public health campaigns and used mass communication tools such as Twitter to rapidly communicate news and updates to anyone who wants to 'listen'.

On the other hand there is less evidence of the active evolution of existing healthcare practices to take advantage of other capabilities of social media. In this report we therefore concentrate on these aspects of social media and in particular how such services can support the social rather than the informational aspects of health. In this respect we focus on two aspects of social relationships:

- weak but plentiful relationships between generally dissimilar people but who share a common interest – such 'bridging' ties are known for their role in supporting access to novel information or opportunities e.g. (Granovetter, 1973).
- strong but relatively scarce relationships between generally similar and sometimes related people – such 'bonding' ties are known for their role in providing psychological and emotional support e.g. (Cattell, 2001b).

In this report we highlight the potential for social media to enhance the role of these kinds of ties in the maintenance of health lifestyles and in the support of those with or caring for those with health conditions. As we will see there is as yet a lack of systematic evidence on the clinical outcomes of 'social media enabled health interventions' but there are nevertheless a range of surveys, cases studies, trials and demonstrators on which to draw.

¹ Consider the telephone...

2 SOCIAL MEDIA FOR HEALTH

Data on the usage of online health information sources is now relatively widespread (Atkinson, Saperstein, & Pleis, 2009; Dutton, Helsper, & Gerber, 2009; Fox & Jones, 2009; Fox & Rainie, 2002). Dutton et al report that 68% of internet users in Britain used the internet to find information about health – a rise of 31% since 2005 and female internet users (73%) are slightly more likely than men (63%) to report this activity. Up to 70% of those who work or who are retired report doing so in the last year and this is the highest reported usage by the retired segment in Dutton et al's study.

More detailed US data suggests that whilst 83% of US adults look for health information online 86% of all adults still turn to a health professional and 68% to a friend or family member as well as to the internet or other information source (Fox & Jones, 2009). Income level appears to be an indicator of the likelihood of looking for health information online, and there are substantial differences between college (University) graduates (76%) and those with only secondary schooling (55%) although this may correlate with older age as those internet users aged 65+ are slightly less likely to do this. This suggests that informational use at least requires a level of 'health' and even basic literacy and confidence that is by no means widespread throughout the population although those with low income and education levels appeared no less likely to search for alternative treatments of medicines online than any other groups (c 35%).

In the context of information uses, (Nettleton, Burrows, & O'Malley, 2005) offer a critical overview of some of the implications of online health information for lay people. They characterise everyday lay usage of the internet (in the context of health) as either 'celebratory', 'concerned' or 'contingent'.

The 'celebratory' type is concerned with the (supposed) potential that the internet has for re-drawing the power relations between patients and professionals, such that patients can be empowered through access to information. The most recognisable example of this process might be seen in the successful mobilisations around issues of HIV/AIDS.

The second type, that of 'concerned' is dominated more by people from a clinical context. This type relates to concerns that health professionals have about the increased expectations and demands that this sort of information might offer service users. Concern is also expressed in terms of the management of the quality of the information being disseminated. Several studies have detailed the processes involved in issues of quality in regard to online information (see (Eysenbach & Kohler, 2002; Eysenbach, Powell, Kuss, & Sa, 2002; Fox & Rainie, 2002; Kisely, 2003; Slater & Zimmerman, 2002).

The third type is almost a midpoint between these other two, whereby the 'contingency' of the situation is developed, such that there is an acknowledgement that in most cases "lay people are well able to make 'reasonable' assessments about what constitutes appropriate information when it comes to their own health and illness," ((Nettleton, et al., 2005), p.974) The issue of contingency arises in that internet use is also conditional upon the specific health needs associated with the condition and indeed, to some conditions being more amenable to internet coverage than others. Furthermore, Nettleton et al. argue there is a growing concordance between lay use of the internet for health issues and a dominant biomedical frame for understanding these health issues. This is usually based on the lay persons assessment of what counts as 'quality information'. There is clearly a preference for information provided by a recognised healthcare body in this online context. The challenge for the healthcare provider then is to contribute to this context without undoing or undermining the peer-to-peer component of social media and the health and wellbeing gains peer-to-peer support can facilitate.

Looking in more detail at 'social media' Dutton et al report a substantial rise in the activity of 'social networking' over the period from 2005 (17% of internet users) to 2009 (49%) although it is not clear exactly what 'social networking' means in this context. Perhaps unsurprisingly only 12% of internet users who were retired engaged in 'social networking' compared to 89% of students. However we should not conclude from this that older internet users are 'asocial' as they are known to make extensive use of email and in fact Dutton et al report that 35% of them used instant messaging. As ever it is simply that in general older people are less likely to be early adopters of new technological products and services (Rogers, 1995) and Dutton et al's

report reinforces the point made by Figure 1 to Figure 4 that access to and usage of the internet by older people is still relatively low and appears resistant to change in contrast to both ownership of mobile telephones and digital TV.

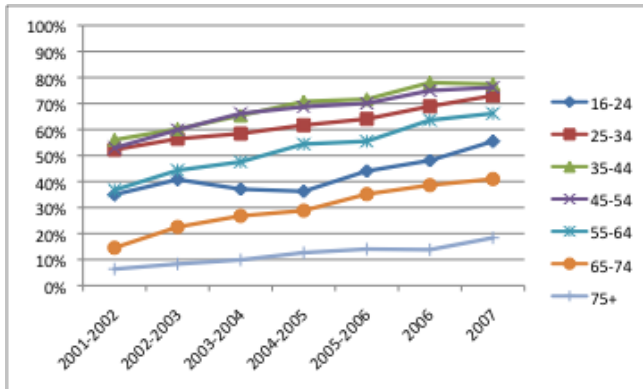


Figure 1: Household internet access by age of Household Response Person (HRP)²

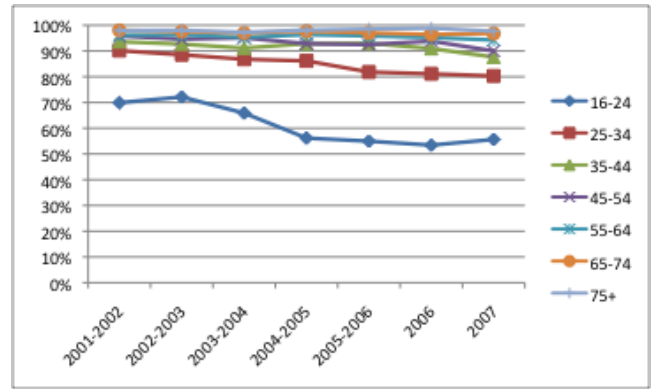


Figure 2: Households with a fixed line telephone by age of HRP

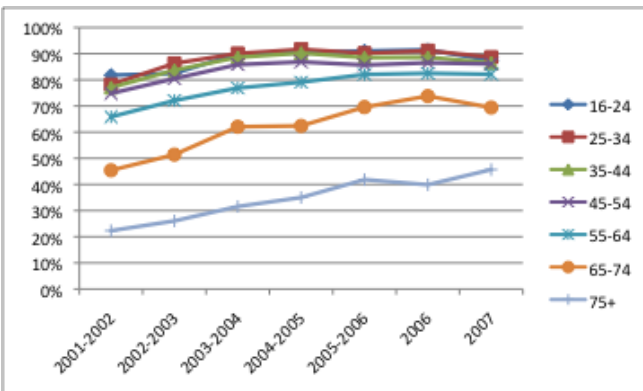


Figure 3: Households with at least one mobile phone by age of HRP



Figure 4: Households with digital television by age of HRP

With respect to social media for health, Fox et al report that 41% of those who looked for health related information online, whom they term 'e-patients', had read citizen's commentaries or experience reports, websites and blogs but that this is much more likely for the 18-49 age group (50%) than for the 50+ (33%). Similarly 24% had looked at rankings of online reviews of health care professionals or healthcare providers although it was noticeable that only 26% of internet users aged 65+ had done so compared to 52% of those aged 30-49 suggesting that older citizens are more likely to accept the 'usual' or practitioner recommended route without question. Interestingly Fox et al also report that 19% of e-patients had subscribed to customsied health bulletins and that this was more popular amongst the 50-64 age group (23%).

However the same study reports low levels of contribution to health information with only 6% of e-patients having posted comments or information via an online group forum or email list, 5% having posted on a blog and between 4% and 5% having posted healthcare service reviews or shared photos or other media about health or medical conditions. These low levels are not unexpected – Dutton et al's survey suggests that blog posting is much less frequent than blog reading. On the other hand a recent Dutch survey suggests that those patients who maintain contact with fellow-patients are much more likely to share their experiences (55% vs 9%), to discuss information found online with a practitioner (55% vs 30%) and to use online sources to compare potential service providers (44% vs 24%) RVZ/Zorgbelang Nederland survey, 2009 cited in (RVZ, 2010).

² Source: UK Expenditure and Food Survey, n = c. 7,000 households per year

As we pointed out in our first report, much research has shown that the benefits of online services may simply accrue to those who are least deprived or least socially excluded (Anderson, 2005; Neil Selwyn, 2005) thus exacerbating rather than ameliorating the social stratification of health. However there is now some evidence that lower socio-economic status groups and those in poor health are more likely to use peer groups/online forums (Atkinson, et al., 2009) as are those who tend to exclude themselves from face-to-face interactions such as those who suffer mental illnesses (Klemm & Hardie, 2002). Given that research such as Lasker's (Lasker, 2005) has shown that such networks can be "particularly valuable for those who are newly diagnosed and in need of health information" and can help them to make "sense of bewildering symptoms, reconstruct[ing] order, and maintain[ing] control over life", investing in the support of such networks may reduce the subsequent need for other kinds of care. This is especially the case when it seems that active participation in discussion is not required, simply reading ('lurking') also provides substantial benefits (van Uden-Kraan, et al., 2008).

In addition recent US data suggests that once they are users, education, income or other forms of social disadvantage do not play a role in the level or effectiveness of the use of 'social networking services' for health purposes (Fox & Jones, 2009). This result, set against the earlier comments on the 'literacy' requirements for informational uses suggests that benefits that may flow through access to the views of peers and fellow patients or carers may have the potential to be more evenly distributed across the population given effective levels of technological access.

With these analyses in mind we can then ask to what extent new 'social media' technologies might mediate and support social rather than the informational aspects of health.

2.1 Weak ties, strong ties, social media and health

In Section 1 above we introduced the concepts of weak and strong ties and suggested that they may play different roles.

Weak ties are seen as relationships between generally dissimilar people but who share a common interest. Each individual may have many such ties and such 'bridging' ties are known for their role in supporting access to novel information or opportunities and in aiding diffusion of innovations through populations (Granovetter, 1973).

Strong ties on the other hand are generally between similar and sometimes related people. Each person may have only a few such 'bonding' ties and they are known for their role in providing psychological and emotional support (Cattell, 2001b).

Drawing on the characterisation of well-being concepts presented in our first report have attempted to show these differing roles in Figure 5 (overleaf). Pink indicators are those where strong ties have a role and green indicators are those where we see a role for weak or bridging ties. We have also suggested that mobility has an important role to play in social well-being and we will return to this issue in due course. This distinction between strong and weak ties is we feel the key distinction in terms of social media interventions, and it is an exploration of the implications of strong and weak ties that will concern this report. The figure is included here as an exemplar of the sorts of ties we wish to consider.

As was noted in our first report the social factors we highlight above are known to have an important role in maintaining health. When people have satisfactory levels of social support then they tend not to get ill, to have longer life expectancies or recover more readily if they do get ill (Pahl, 2003). Stansfield (2006) has outlined the positive impact that social support can have on mortality, physical morbidity, prognosis, mental health, social integration and social cohesion whilst recent results show that increases in social participation (social capital) can have significant mediating effects on mental and physical health (Cattell, 2001a; Kritsotakis & Gamarnikow, 2004; Mohana, Twigg, Barnard, & Jones, 2005). This is especially true for those not in work and especially for women (Pevalin & Rose, 2003). Further, evidence suggests that social and civic participation drops sharply when an individual starts to experience poor health (Marmot, Banks, Blundell, Lessof, & Nazroo, 2003). In this context personal mobility is therefore a crucial aspect of healthy lifestyles as it enables the continuation of an active social life. As we will discuss below those who are immobile and/or who are geographically isolated are must therefore be a prime focus for support and it may be that 'virtual mobility' (Kenyon,

Rafferty, & Lyons, 2003) can offer a partial solution for at least some people.

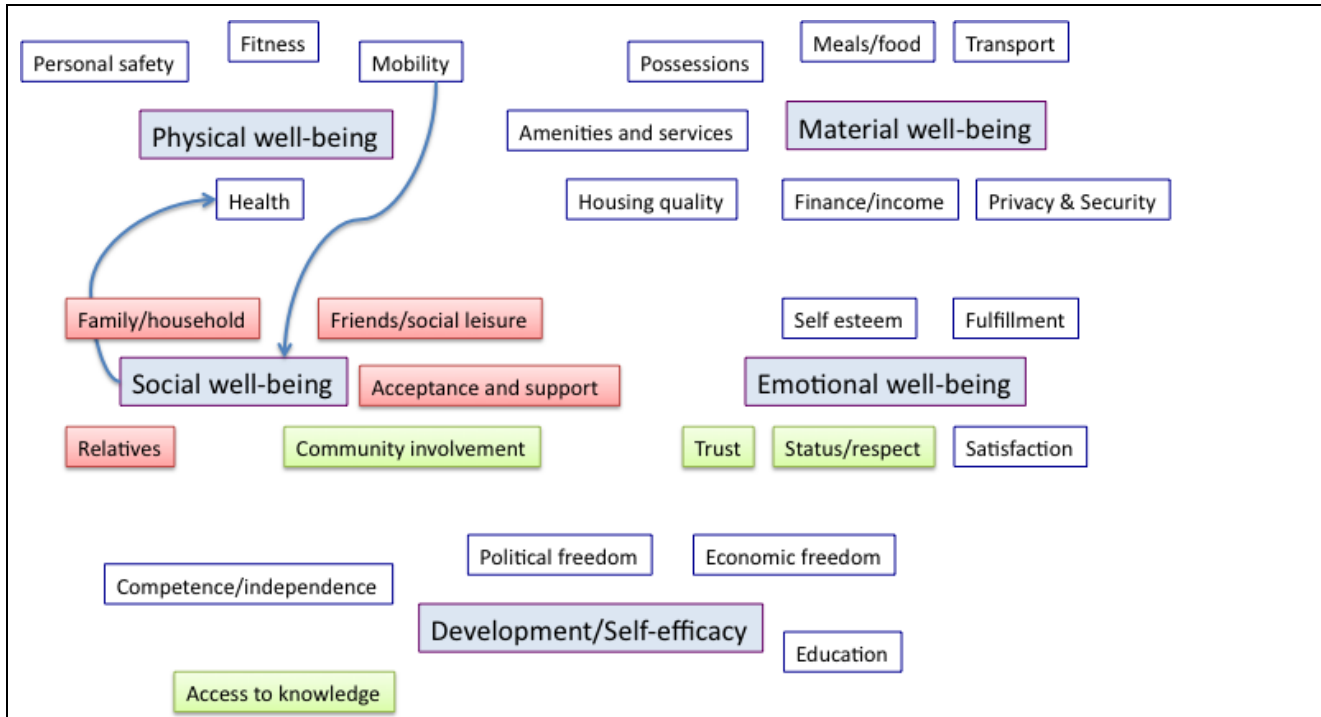


Figure 5: 'Well-being' concepts (blue boxes) and indicators (after Anderson and Speed (2009)).

We can therefore start to think about the kinds of 'social media services' that might benefit different sections of the population. Thus people who are retired may find it harder to develop and maintain affective relationships, and those with a long term or limiting condition may find it difficult to maintain friendship (strong tie) networks and to participate in weak tie acquaintance networks.

3 SOCIAL MEDIA FOR A HEALTHY SOLIHULL

Before moving on to consider specific kinds of services it is worth re-visiting some of the underlying social geography of Solihull in order to provide context for the following discussions (see Figure 6 to Figure 9 overleaf). As was noted in our first report it is generally the case that the central, south western and eastern areas are less urban and have a higher risk of poor geographical access to services. There are however urban areas in the northern central region which are also relatively lacking in geographical access to services.

This is further highlighted by Figure 10 and Figure 11 which show the relationship between geographical barriers to services and high rates of health and disability and also high rates of caring. It is noticeable that there are some LSOAs where there are high rates of health and disability and increased geographical barriers to services (top right quadrant) such as parts of Chelmsley Wood, Fordbridge as well as the more rural Bickenhill and the same is true of the presence of those giving 20+ hours of care per week. Similar patterns (not shown) are found for the levels of individuals suffering from a long term limiting condition or illness.

These patterns suggest that there may be multiple components of the Solihull population who may benefit from 'social media' services. Bearing in mind the current socio-demographics of usage (see above) we might speculate that early adopters would include younger people and especially those who are less mobile. We might expect services revolving around information construction/provision and service review to be more readily adopted by those with the required levels of health literacy, computer literacy and self-confidence whilst more communication oriented services may be more widespread across the population but inevitably initially adopted by younger age groups.

Later adopters, for whom there may be substantial benefits given the suggestion of 'virtual mobility' might include older, less mobile individuals and those involved in significant care

provision who may be balancing multiple demands and so may have little ready access to support, advice and guidance. It should be noted however that 'virtual mobility' services are unlikely to be effective on their own. Dutton et al report that those who score higher on 'loneliness' indices are also narrower users of internet based communication tools (Dutton, et al., 2009) and it is unlikely that providing more such tools will resolve this issue for these people – after all, who are they to communicate with?

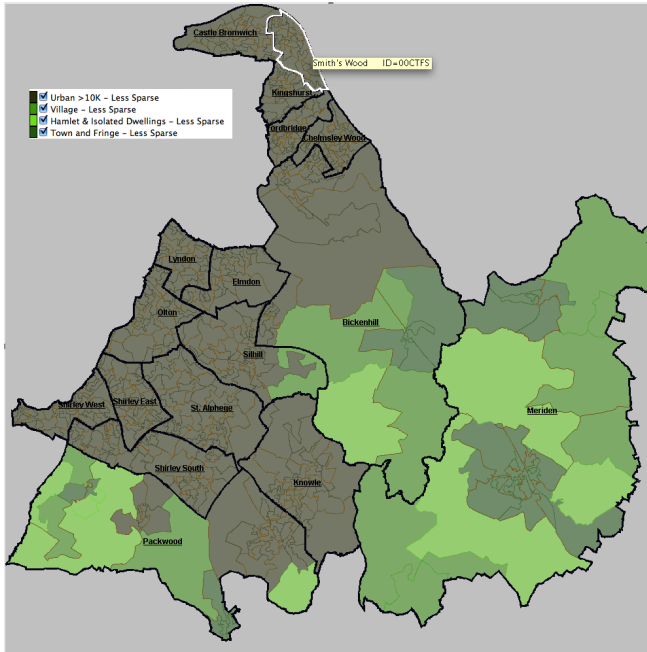


Figure 6: OA level rural/urban classification by OA (ONS 2001) showing ward boundaries and labels.

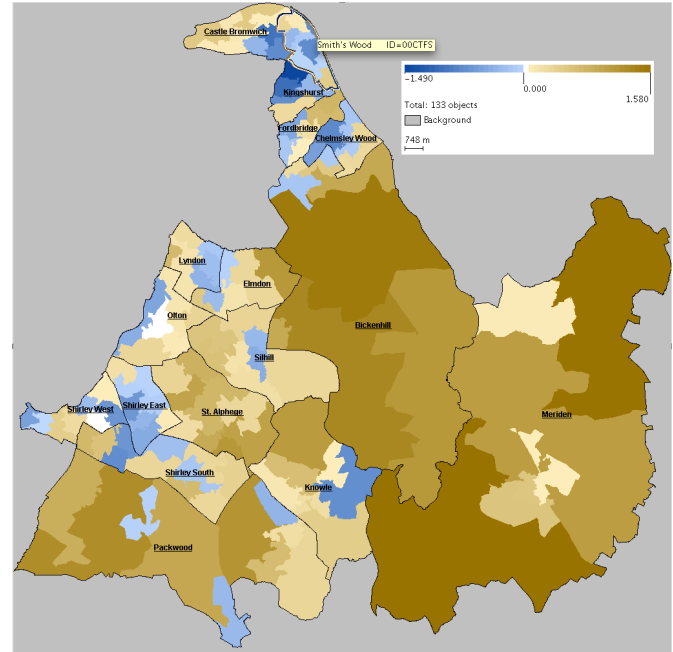


Figure 7: LSOA level IMD Geographical barriers subdomain score (CLG, 2007) showing ward boundaries and labels.

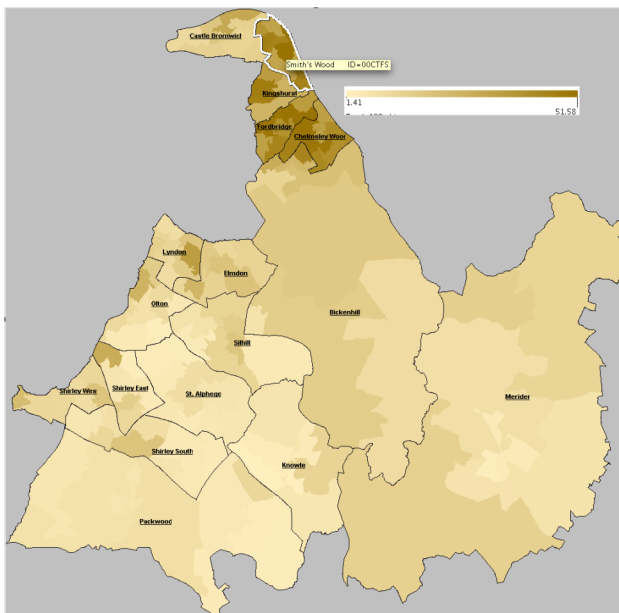


Figure 8: LSOA level overall IMD 2007 score (CLG, 2007) showing ward boundaries and labels.

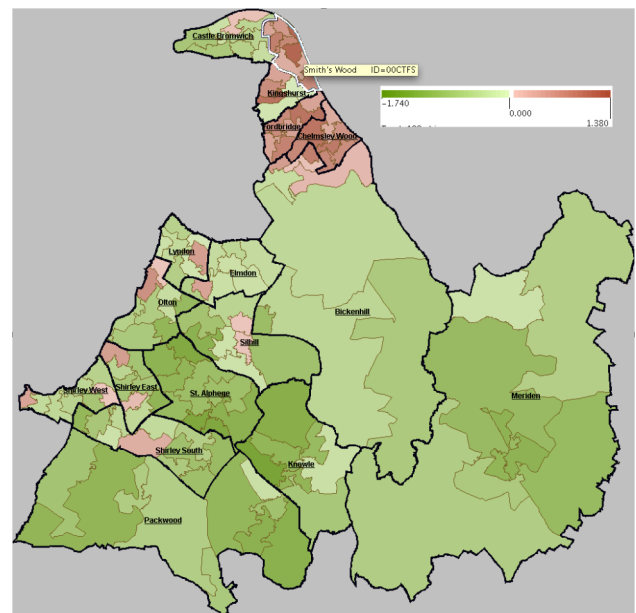


Figure 9: LSOA level IMD 2007 Health & Disability subdomain score (CLG, 2007) showing ward boundaries and labels.

On the other hand providing these tools as part of an overall 'social communication service' which may include locally based offline activities that provide initial weak tie contacts could be an effective strategy. Indeed Dutton et al's study also indicated that most internet users considered that online communication had increased their contact with both friends and family who live further away (who may, although not necessarily, be considered weaker ties)

although this is not the case for students who emphasised its role in contacting their local friendship networks. In similar vein 19% of internet using retirees said that internet use had increased their contact with 'people who shared their interests' reinforcing the message that for many online services provide a way to expand their social networks through common ground.

In remainder of this section we discuss a number of concrete examples in order to ground some of the above discussion. This then allows us to sketch out some of the general benefits (and problems) associated with the application of social media process to the delivery of health and social care. As with our first report, these issues are then explored in more specific detail through applying them to the three priority areas of children, adults of working age and older people.

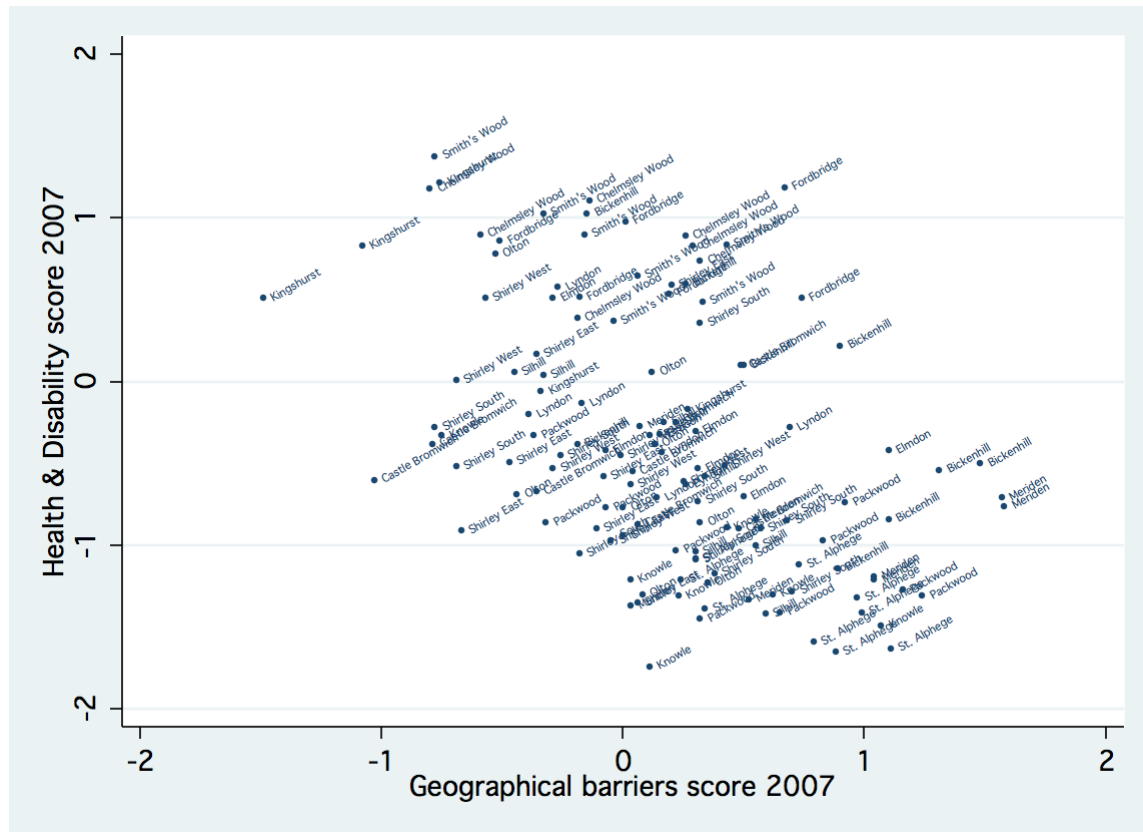


Figure 10: LSOA level IMD 2007 Health and Disability vs Geographical barriers to services scores (CLG, 2007).

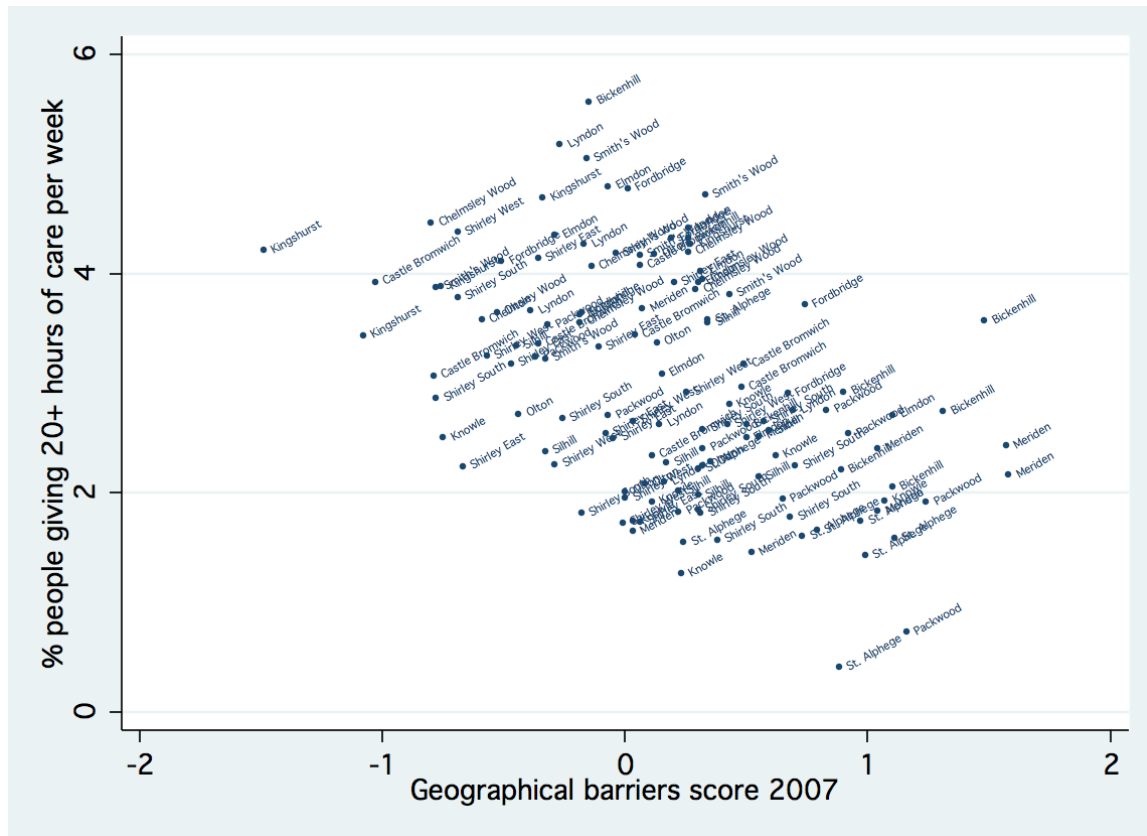


Figure 11: LSOA level % people who provide a high degree of care (Census 2001) vs Geographical barriers to services scores (CLG, 2007).

3.1 Access to social media technologies in SCT

Before moving on to discuss social media in the context of care and health in Solihull it is worth reminding ourselves of the estimates of the spatial distribution of internet and mobile uptake discussed in the first report (Anderson & Speed, 2009).

Figure 12 shows the estimated distribution of households with internet access whilst Figure 13 Figureshows the estimated take-up of mobile telephony. As was discussed extensively in the first report there are areas where both levels are high but also some areas where internet uptake is estimated to be relatively low but mobile uptake to be relatively high such as Solihull 006D (Fordbridge) and Solihull 005B (Kingshurst). In addition higher rates of high unpaid care correlate with areas of relatively low household internet access so that services for areas where there are high proportions of 'heavy' carers may need to consider service delivery 'channels' other than household internet access. It would seem apparent that the most immediate task facing social media initiatives in these types of areas would be ones of access.

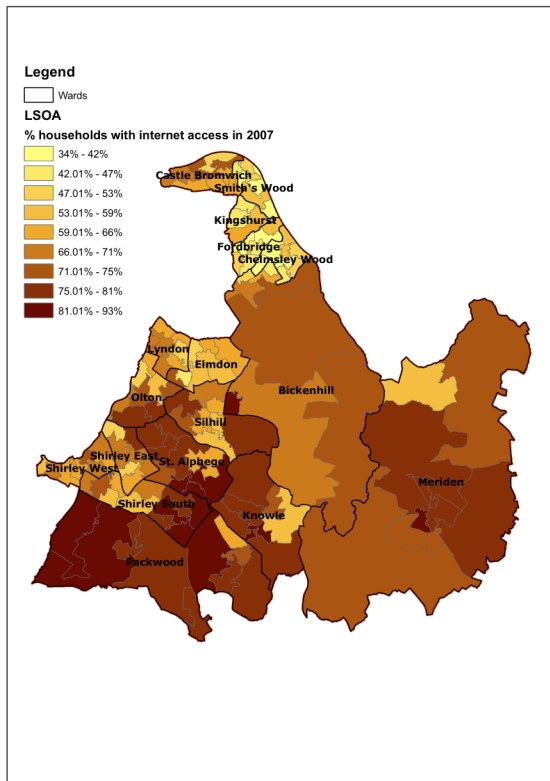


Figure 12: LSOA level estimates of the % of households with internet access in 2007 (Spatial microsimulation model using EFS 2007 & Census 2001)

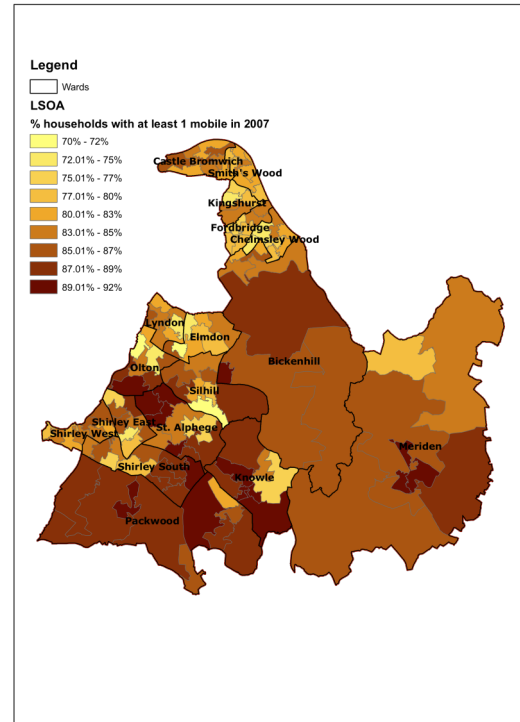


Figure 13: LSOA level estimates of the % of households with at least one mobile telephone in 2001 (Spatial microsimulation model using EFS 2007 & Census 2001)

In addition there are many zones where health deprivation is high but mobile uptake rates are also relatively high. This would indicate that an effective social media intervention in these specific high deprivation areas would be campaigns centred around mobile phone technologies, such as text messaging campaigns. As an example a study by Free et al (2009) reported that a mobile phone smoking cessation project (called TxT2Stop) doubled the self-reported quit rate in the short term. They conclude that this sort of intervention could represent an important, but as yet largely unused, medium to deliver age-appropriate public health measures.

3.2 Social media and care giving

As we noted in our first report, involvement in the provision of high levels of unpaid care has numerous implications. Most immediately it can impact upon the carers' ability to participate in paid employment but it can also lead to higher rates of social isolation (see digital inclusion report). Many of the people in this particular group are both time poor and cash poor. In real terms this means they often have neither the time nor the resources to engage in care giving as they would like. Social media, in this context can function to offer them support, but at a time and place where they are ready and able to engage with the support available from others (M. Seeman, Seeman, Seeman, & Seeman, 2010). Rather than requiring them to be in a specific place, at a specific time, social media can be there, waiting to be accessed at a location and time of their own convenience. In terms of this particular demographic group, this has to be the primary positive in terms of social media.

In this context, social media can offer the opportunity for these time-poor carers to access the tacit knowledge and experiences of others that play a central role in making sense of and coping with an illness (either directly or within a family). Indeed in this sort of context, it is useful to characterise social media as a proxy form of lay referral system. The processes involved in lay referral have been studied by medical sociologists for the past 50 years, since the publication of Friedson's work on these systems (Friedson, 1960). Within this work

Friedson identifies the processes that lay people go through before they contact a health professional. The primary frame is one informed by pre-diagnosis activities, but there is no reason why this model cannot be applied to ongoing help seeking behaviour. Friedson characterises the lay referral model as

“...the whole process of seeking help involves a network of potential consultants, from the intimate and informal confines of the nuclear family, through successive, more select, distant and authoritative laymen (sic), until the “professional” is reached. This network of consultants, which is part of the structure of the local lay community and which imposes form on the seeking of help, might be called the ‘lay referral structure’,” (p. 377).

This quote, from Friedson, is a clear example of the way in which social media will be characterised in this project. Social media can be thought of as just this network, only where the local community is replaced by a community of identity, whether this identity is geographical (tied to an area) or biographical (tied to an illness or experience). The major issue, from the perspective of the healthcare provider, is in making sure that the lay referral system or structure, deals in accurate rather than erroneous information. In precisely this context, an organisation, such as SCT, could be involved as a ‘knowledge broker’ on social media platforms, where a lot of the content and discussion might be determined by the participants, but that SCT might be able to interject, not with clinical advice or direction, but with accurate information that might inform the discussions of the group. This does raise the issue of clinical responsibility in terms of social media content, and this is one that will be returned to later in the report.

Many of the issues identified in terms of the digital inclusion report also apply in relation to social media. Access to many social media processes is dependent upon access to digital content. As such, those issues identified in relation to increasing levels of digital inclusion also have some impact on the deployment and utilisation of social media as a public health tool. Whilst the emphasis is different, the former being about access and the later being about health education and peer support, a central issue overlaps the two in that the characteristics of the constituent groups within SCT will have a major effect on the ways and means in which social media might be most effectively utilised across the area.

Cotton and Gupta (2004) detail how in the case of economically disadvantaged people, there is less likelihood that they will be able to fully draw from the range of social media resources. This is due to generally lower levels of educational attainment, limited modes of access (as already outlined in the first report, witness the different levels of internet penetration versus mobile phone penetration in areas of high deprivation). In addition, a number of research studies (M Blaxter, 1990; M Blaxter, 1997; Tardy & Hale, 1998) have demonstrated a propensity to invoke an external locus for poor health amongst populations in areas of high deprivation. People in areas like this tend to see their health status as something that is beyond their own control. Social media projects in these areas might give them a very real and very important sense of control over their own behaviours and consequently their own health.

SCT faces an aging population, with the numbers of people aged 65+ in the population expected to grow by 24% by 2018, and the number of people 85+ expected to increase by over 55%. In terms of the impact on care, this has already been explored in the digital inclusion report. Within the current report, we will spend more time considering the implications of this growth in the elderly population in terms of social media platforms.

High rates of unemployment will obviously also impact upon people’s ability to engage with these processes, and the technologies required to support them. In addition the relatively lower levels of educational attainment will also directly impinge upon social media processes within SCT. This does not mean to say that social media cannot be an effective tool for dissemination of public health information and support, rather that it will need to be very carefully calibrated with the existing technologies that are on the ground in SCT, such that there is minimal need for additional technical equipment or expertise on the part of the service user in order to take part in the social media processes.

3.3 Health, social media and age

As with the mental health studies, the efficacy of social media in relation to clinical aspects of

old age is inconclusive. The emphasis, as it was in the mental health studies, has to be on the potential social capital benefits of social media. There are clearly a number of factors affecting the uptake and deployment of social media across different socio-demographic groups. Selwyn (N Selwyn, 2004) posits the idea of a digital divide between younger and older adults, and indeed, the research evidence shows digital use is highly stratified by age (see above and Russell, Campbell and Hughes (2008) with older people much less likely to engage in the use of ICTs. According to Russell et al, older people experience issues of exclusion from online material because they have not had "the same exposure (through education and work) to opportunities to develop familiarity with and competence in using ICTs," (p. 78). With this in mind, we need to consider how social media might best fit into the social geography of care giving within SCT.

Russell et al (2008) were interested in the potential for the internet to develop social capital amongst 'silver surfers'. They collected data from 154 respondents, the majority of whom were aged between 60-69 years. In terms of their health status, the most frequently reported disability was sight related, whilst a third of the sample needed some assistance to get around their community. In terms of their internet use, nearly 100% reported using the internet for email, whilst 80% used it to check on medical/health information. They also used it for current affairs and news, shopping, sending and receiving photos and online banking. This range of activities suggests a high degree of competence in terms of internet use. In terms of building social capital, Russell et al build on the work of Granovetter (1973) and suggest that their study demonstrated "strong evidence...that the internet significantly enhanced the ability of our participants to access the economic, social and political institutions and services of their community," (p. 81) through the weak ties it supported. However, this report does acknowledge that their respondents faced no 'issues of exclusion' such as disability, cost of technology or lack of proficiency. These are major barriers to silver surfing that are obviously going to be more evident in areas of high material disadvantage in SCT. It is for this reason that issues around exploitation of social media must be centrally aligned with the strategies outlined in the digital inclusion report. The implementation of social media processes within SCT will not be successful, not matter how well thought out, unless integrated with digital inclusion criteria.

In terms of young people the reverse context emerges. Research from Australia indicates that 85% of 14-24 year olds use the internet (Dept of Communications, Information, Technology and the (2005)). Lenhart (2009) highlights that the 2008 data illustrates that 93% of 12-17 year old American teens go online (63% of them daily). Of these, 89% go online from home. In terms of ICT platforms, 77% of teens own a games console, 74% own an iPod or MP3 player, 71% have a mobile phone, 60% have a desktop or laptop computer, and 55% have a portable gaming device, such as a Sony PSP or Nintendo DS. In terms of the types of activities that these American teens are engaging with online, 97% play games, 81% go to entertainment websites, 65% use social networking sites, such as facebook (Lenhart reports that teens do not use twitter). In terms of specific issues regarding health, 28% were reported as looking online for health, dieting or physical fitness information. This compares to 79% of young people aged 18-29.

In terms of demographics, Lenhart (2009) reports that income and race/ethnicity were not found to be significant in determining who used social networking sites (SNS). Age (15-17 years olds more than twice as likely to report SNS activities than 12-14 year olds). Also, Gender proved significant, with 86% of girls aged 15-17 with onlione profiles compared to 69% of boys aged 15-17).

Hargittai and Hinnant (2008) reported that these young adults also lead the way in terms of web access and web use. Instant messaging, online chatting and hobby and entertainment activites (like downloading music or playing online games) are all much more prevalent. However, those aged between 29-59 are more likely to use the internet for job research and accessing government sites (demonstrating a changing age dynamic). In terms of health information seeking activities, Cotton and Gupta (Cotton & Gupta, 2004) showed that "individuals who seek health materials online are more likely to be younger than those who report seeking health information only offline as the analysis presented above would confirm. An example of a youth based online project is outlined by Webb, Burns and Collin (Webb, Burns, & Collin, 2008). They describe an internet based mental health service for people aged

16-25 in Australia. The study details how within this online support group the young people safely and anonymously share and explore their experiences, defining and directing discussions. This anonymity also has implications regarding topics in sexual health, which often are a source of embarrassment for adolescents.

The point to make salient here is that internet and social media use, whilst it may be concentrated amongst a younger demographic, does have a profile across all groups. The key issue then is to be aware of the different dominant modes or fashions of internet access and social media utilisation amongst these different demographic groups in order to exploit the potential that social media services might offer to SCT.

From the evidence discussed in D1.1 evidence it appears that the areas within Solihull with the highest concentrations of 60+ populations are areas of relatively low deprivation. However, this would be to ignore LSOA 018B Shirley East, 33% 60+ population and IMD score of 1353, and LSOA 013D, Olton, which has 32% 60+, an IMD score of 1635 and relatively poorer geographical access to services. Additionally, the high number of higher rate care and mobility awards across all three LSOAs is indicative of a substantial need for services focused on older people, particularly in terms of care assistance.

As we have discussed, social media strategies for this particular group might be best tailored around issues of social capital and social support as a means of increasing and maintaining levels of general health and wellbeing. This may involve training and support for older people to engage in emailing friends and family in the local community and fostering online discussion groups, where issues around long term limiting conditions and the provision of care as an older person could be discussed amongst the local elderly population.

3.4 Summary

The evidence presented in the preceding sections demonstrate the diversity of health care needs in SCT, particularly when considered in tandem with indices of deprivation. Couple this to the diversity in terms of population patterns regarding internet access (see Anderson and Speed 2009 (2009)) and social media use and the picture quickly becomes a complicated one. Areas of high deprivation also contain pockets of low or mild deprivation; areas with population concentrations of elderly people also contain pockets of younger people. All of these factors interplay with each other in terms of internet use, levels of social capital and general levels of health and wellbeing. The conclusion to be drawn from this is that there is a need for SCT to carefully consider its patient and citizen service delivery and engagement strategies so that they are accessible and amenable to a diverse group of current (and future) patients and their carers across SCT. This means a cautious approach needs to be taken to the 'digitalisation' of these strategies. A key issue for consideration is that whilst the social media platforms need to appeal to the key demographics of different populations with SCT, this is not contingent upon any localism. That is to say, the Social Media materials need to make sure they offer material in a way that relates to 12-14 year olds, to 15-19 year olds and to 50+ (to name but three groups). It does not need to relate to any local context per se, as this is the role and function of the 'social', in social media. It is the local communities and the ways in which they access and utilise these technologies that will make them local. As such, this simplifies the task for SCT, what is crucially required is a platform that plays to the expectations and fashions of the different demographic groups.

Around issues of social care, it is known that people engaged in social care tend to be in more routine and manual occupations. These occupations are also more insecure and more likely to be affected by seasonal employment patterns. Digitally mediated services in this context might be best tailored towards offering some form of social support and identifying suitable resources within different community settings that might be accessed to facilitate carers in maintaining their levels of care but also enabling them to continue in employment. Such a service might constitute information sharing via weak (bridging) ties across people from local communities regarding flexible employment opportunities, issues around working and welfare entitlement and such like. If such services can be tailored towards increasing awareness and knowledge of direct payment schemes and individualised budgets, then it might prove possible for more service users to take more of a direct role in the provision of their care, whilst simultaneously easing some of the load from the unpaid voluntary carers (this also corresponds with a stated

priority in the JSNA). As we will see, this group may not have high levels of access to the internet but it is anticipated that a high percentage would have mobile phones and digital television. These groups may be from what are traditionally regarded as 'hard to reach' populations and it might be that deployment of appropriate public patient involvement (PPI) programmes via suitable digital infrastructures and services, may function to engage people in a process of engagement with SCT.

In relation to issues of mental health, it is difficult to disaggregate mental illness from other factors of deprivation. The evidence as presented suggests that the major mental health issues within SCT relate to lower level issues of depressive related disorders. In conjunction with the social care population, this group might also benefit from informational activities which deal with issues of awareness about and involvement in direct payments schemes and individualised budget programmes. As the evidence reviewed above demonstrated, issues of mental health appear to be particularly amenable to social media approaches, due primarily to the anonymity that they offer people (particularly young people). Social media in this context offers the opportunity to find out information about conditions that carry a high degree of social stigma and to participate (anonymously) in peer-based support groups.

From the JSNA report in terms of child and adolescent health it is apparent that there is a strong need to engage children and adolescents around key public health criteria and it may be that the relatively higher usage levels of digital media (and especially it's frequent 'anti-establishment' positioning) in this group can be used to good effect. However any public health message would need to be tailored to be accessible to areas with relatively lower levels of education, skills and training. Having said this, it is worthy of note that such is the diversity of platforms through which social media information and processes can be disseminated and utilised, that this educational factor may be counteracted somewhat. Use of mobile telephony, internet chat rooms or social networking sites, digital television messaging or such like present a number of different platforms for SCT to exploit in terms of communicating Public Health information in a manner that uses young people's social networks to aid the diffusion process.

For the adults of working age, the analysis presented above suggests that a more effective starting point may be the female population. This may be for example, an online smoking cessation network, where people from SCT can come online and share their experiences with other people trying to stop, offering a level of peer to peer social support. In the event that people find these sites useful (and the evidence suggests they will (Seale, Ziebland, & Charteris-Black, 2006)), then it would be anticipated that the use of these sites may extend to male adults of working age. Similar sites in terms of alcohol consumption and exercise could also be initiated. The important point in this regard would, we think, be to start small and to try and engender the organic growth (through community take-up) of these initiatives.

In terms of the elderly, as already discussed, the key issue would appear to be around social support and increased engagement with independent living programmes, and this also has the benefit of assisting high volume voluntary carers. In addition the provision of 'virtual mobility' services to ease the increased social isolation associated with deteriorating health and mobility may be a useful avenue to pursue. Social media initiatives in regard to this demographic are best targeted towards those activities that could facilitate the building of bridging capital, information sharing across people, in a move reminiscent of Friedson's lay referral system.

In conclusion, the key outcome of this section of the report is an awareness of the diversity of need across different population groups within SCT. Any public/patient service delivery and engagement strategy that is considering 'digital options' must address this diversity. In addition, SCT contains pockets of high advantage and high disadvantage. Any strategy must incorporate different modes of 'social media digital provision', such that it is accessible by these different groups within the SCT, and this will require that the strategy is tailored for specific populations in terms of their access to and awareness of ICT and associated technologies.

The analysis suggests a number of potential avenues for targeting specific technologies for use in specific health services for specific groups of people. Thus whilst lifestyle management services may be deliverable via PC based household internet access for some areas, in others different technologies may be required such as Digital TV or mobile telephones. In terms of a social media strategy, there is sufficient evidence to support the effectiveness of social media interventions as a means of improving health behaviours and offering/increasing levels of

social support. The obstacles to effectiveness are the technologies themselves (in terms of populations levels of access) and the need to understand the seemingly dynamic nature of social media 'fashion'. SCT needs to identify key health behaviours/criteria that it might choose to target through social media initiatives. SCT then needs to assess the profile of the groups identified with these key health criteria and marry the design of the social media intervention to the demographic group through detailed user analysis. So, for example, a mobile phone text messaging based smoking cessation programme might work best for that population group of female adults of working age. A similar campaign may not work for adolescent members of the community who may be more effectively reached through a social network service based campaign. The key point, and this was touched upon earlier, is that any social media campaign whilst it needs to be informed by the geographical distributions of deprivation, actually needs to progress by identifying what will work for the different populations. It has to be realised therefore that there may be three or four different approaches to social media initiatives intended to target smoking cessation, all aimed at different audiences who favour different social media platforms.

It should also be realised that the flexibility of social media, with the users equally able to produce content and information, means that 'unanticipated use' (Robinson, 1993) should be expected as should 'user re-design'. Rather than seeing these phenomena as a potential cost or risk the PCT must see these as a way to capture users' creativity and fold these innovations back into the service in order to ensure their appropriateness for their target groups. As evidenced by the growth of 'users as producers' (Bruns, 2007) and the 'betaworld' concept, engaging the potential audiences in the co-design and onward maintenance of these services will be crucial to their success.

4 PRELIMINARY SUGGESTIONS FOR A SOCIAL MEDIA STRATEGY

Following D1.1 we recommend an approach that retains the concepts of **Digital Leverage** To ensure a focus on the role of social media in enabling and supporting the health and social processes of interest and of **Digital Proofing** to ensure that known patterns of access to and skills in the use of social media do not prevent equitable outcomes.

In what follows we illustrate the value of these considerations in the context of social media by considering three different potential interventions that follow from the preceding discussions of Solihull's main social and care needs/drivers and evidence 'to date' on what works.

Before we do so however we want to elaborate the point made in Section 3.4 above regarding unanticipated use and the 'co-production' that characterises social media and to which we alluded in the introduction.

This approach acknowledges that many people like to customise and more than are commonly supposed will seek to construct products and services for themselves (Oudshoorn & Pinch, 2003). Drawing on a range of empirical studies Eric von Hippel for example estimates that up to 40 percent of users actively develop or modify products (von Hippel, 1986). First mooted under the rubric of mass customisation (Davis, 1987) and more recently observed and advocated again by von Hippel (2005) amongst others, the model involves the potential users/customers in a rapid cycle of design, use and re-design – betaworld.

To give one excellent example, a recent study of the creation of a teen-oriented website recorded the rapid transition of the site from an "Editors know best: we create, you use" model to a "They know best, we supply the framework, they do the content model" (Neff & Stark, 2004). Indeed the executive interviewed said

"We don't have people sitting around thinking. 'What do teens want?' It doesn't work. Even if you could figure it out, it wouldn't last. You can try to write for them but it doesn't work. Now 95% of our content is written by teens themselves." (Neff & Stark, 2004, p. 182)

This model can now be seen at work in a plethora of internet-based services which implicitly or explicitly support users in the creation of their own content (blogs, wikis, flickr, facebook, youtube et al) and their own applications and services (google, facebook, ning). It is a model

radically different from the traditional 'innovate, design, build, launch, market, sell, wait for revenue' pipeline model because it allows the business case/model to evolve during development, and thus respond to unanticipated use, rather than being (usually) incorrectly specified in advance (Anderson & Stoneman, 2009). It may be that such *adaptive development models* can enable and adaptive organisation to exploit emerging uses rapidly. This requires organisations to admit both institutionally and emotionally that they are no longer in total control of the services they provide.

On the other hand such an approach can substantially reduce the cost of production of information and the costs of 'community maintenance' provided the service provider is willing and able to relinquish control.

4.1 Mental health needs and social media

As was noted in the initial report, the Solihull JSNA identifies the commissioning of *community based health and social care services for common mental health conditions and to support people with serious mental illness to live independently in their homes* (p75) as a key priority especially given a relatively high rate of diagnosed depression in deprived areas and the relatively high rate of use of secondary mental health care services.

Berger, Wagner and Baker (Berger, Wagner, & Baker, 2005) analysed a national survey of internet use in the USA. Drawing from a sample of 7014 internet users, they found that those with "stigmatized illnesses, including depression and anxiety, were significantly more likely to have used the Internet to access health information and to communicate with professionals about their condition than those with non-stigmatized conditions," (p. 1821). In addition they found that people with psychiatric stigmatised conditions "were more likely to report that using the internet increased their health care utilization and communication with a health care provider," (p. 1825). The specific impact or health gains of this process are difficult to assess, but the fact that more uptake was witnessed amongst this stigmatised group points towards the utility of social media as a means of building social capital and bridging capital amongst hard to reach populations. Berger et al. conclude that this study demonstrates that the internet "may be a useful tool for contacting and communicating with people with a psychiatric diagnosis," (p. 1826).

The more recent data discussed earlier (Fox & Jones, 2009) provides useful background to this discussion. It reported that 35% of female internet users looked online for information about depression, anxiety, stress or mental health issues compared to 22% of men. Only 12% of internet users aged 65+ report this activity compared to 33% of the 18-29 age group. Income levels make little difference to the likelihood of going online for this kind of information but those with higher educational levels are more likely to do so. Unlike Berger et al the rate is therefore lower than for 'non stigmatised' conditions although these data do not refute Berger's claim that communication may be improved since Fox and Jones' study concentrated on informational uses.

More specifically, Houston, Cooper and Ford, (Houston, Cooper, & Ford, 2002) undertook a 12-month study of an internet support group for people with depression. They recruited 103 participants, all of whom were chronically depressed and socially isolated. They measured them pre and post the use of the internet support group and their main outcome measure was the resolution of depressive symptoms over time. They found the majority of forum users were women, with a median age of 40 years. Over 40% of forum users were unemployed and over 80% had attended college in some form (only 44.7% completed college). In terms of their results, and based on a clinical measure of depression, they established that depression was resolved in 33.8% (n=24) of the sample. This is not to say that the internet support group effected the resolution, but Houston et al argue it had a positive impact. Their analysis showed that almost all of the participants stated that interacting online helped them with their symptoms, and one third of the sample preferred online interaction over face-to-face interaction. The hypothesis that those people who engaged in the group would tend to be people with low levels of social support was confirmed. Furthermore, the study showed that these levels of self-reported social support did not improve over time regardless of the improvement in their depressive symptoms. This may be indicative of a virtual form of social support being enacted through the social media platform, or an example of what Granovetter

termed 'bridging capital'. Houston et al (2002) conclude that the participants themselves reported "deriving considerable support from their online interactions, placed a high value on the support groups, and seemed to incorporate information from the online support groups into their relationship with their health professional," (p. 2067). This is an important point, if the information from social media platforms is integrated with the professional-patient interaction, then there is a real possibility that these sorts of positive outcomes may emerge from the social media activities.

4.2 Smoking Cessation

The JSNA is clear that smoking cessation is a priority across nearly all demographic groups in Solihull and there seems to be growing evidence that digitally mediated interventions and self-help groups can help to support counselling, clinics and similar traditional services. We therefore suggest that SCT may wish to develop a suite of services to support smoking cessation that are based on the holistic and co-production approach described above and which also provide peer-group and self-management support services (Brendryen, Drozd, & Kraft, 2008) as well as online facilitated counselling (Woodruff, Conway, Edwards, Elliott, & Crittenden, 2007). In doing so they may well engage a range of citizens in contributing to overall current and future well-being in Solihull. We have already noted the research by Free et al (Free, et al., 2009) which indicated a 50% increase in self reported quitting activities amongst people on the text messaging based cessation programme. Similarly, an earlier study by Rodgers et al. (Rodgers, et al., 2005) found that in a study of a New Zealand cessation programme, 28% of those in the intervention group had stopped smoking, compared to only 13% in the control group. Rodgers et al (2005) assert that text message based cessation programmes offer potential for a new way to help smokers stop smoking and they list the benefits as affordability, personalisation and location independence. Given the age distribution of mobile uptake (Figure 3) we might also add that near ubiquity across all age groups apart from the 65+ is another.

Both of these studies deal with short term impact of these programmes. In a more recent systematic review of the published evidence attention is drawn to the discrepancy between short and long term gain on these initiatives. Whitaker et al (2009) reviewed four studies of text messaging. They report that when combined by meta-analysis the text message programme trials showed a significant increase in short-term self-reported quitting (RR 2.18, 95% CI 1.80 to 2.65). However, there was considerable heterogeneity in long-term outcomes. They conclude that the "current evidence shows no effect of mobile phone-based smoking cessation interventions on long-term outcome. While short-term results are positive, more rigorous studies of the long-term effects of mobile phone-based smoking cessation interventions are needed" (p. 7). The social component of these interventions is related to getting people signed up to the service through peer-to-peer networks. By exploiting weak social ties between groups of people who are interested in trying to stop, then it will be possible for this intervention to access harder to reach populations. The primary modus of the scheme is peer-to-peer, as such it would be anticipated that these peers would get friends signed up for the SMS programme, whilst simultaneously also offering social support. SCT might look to accompany a smoking cessation SMS programme with a number of social media suites that might foster social capital within this health behaviour specific group.

In terms of the role of networks in smoking cessation, a study by Christakis and Fowler (2008) found that there were clear effects for the networks which people belonged to. They were not interested in digitally mediated networks per se, but the same rules apply. They studied networks of people longitudinally, from 1971 to 2003 and found that;

there appear to have been local smoking-cessation cascades, since whole connected clusters within the social network stopped smoking roughly in concert. This finding suggests that decisions to quit smoking are not made solely by isolated persons, but rather they reflect choices made by groups of people connected to each other both directly and indirectly at up to three degrees of separation. People appeared to act under collective pressures within niches in the network. As a further reflection of this phenomenon, persons who remained smokers were observed to move to the periphery of the network, and the network became progressively more polarized with respect to smokers and nonsmokers over the

period from 1971 to 2003, with relatively fewer social ties between these groups," (Christakis & Fowler, 2008), 2256.

This would be the anticipated effect of a smoking cessation social media campaign, which might be structured around a facebook style template, so that the effort to stop smoking would be a collective as opposed to individual one. Also, as already touched upon, the effect of the social media intervention, as highlighted in Christakis and Fowler, may well be viral, whereby the success of the scheme may extend it out to harder to reach groups, such as adolescents or males of working age via the social networks of early participants.

Christakis and Fowler (2008) conclude that "cessation programs for smoking and for alcohol use that provide peer support — that is, that modify the person's social network — are more successful than those that do not,". They continue that "medical and public health interventions to encourage people to quit smoking might be more cost-effective than initially supposed, since health improvements in one person might spread to others," (p. 2257). This evidence indicates a clear basis for the utility of network approaches to smoking cessation.

4.3 Teenage Lifestyles

The second suggestion is to focus on teenage lifestyles with a particular focus on sexual health, teenage conception and diet/exercise (Stinson, Wilson, Gill, Yamada, & Holt, 2009). As above we suggest a holistic approach (Fletcher, Harden, Brunton, Oakley, & Bonell, 2007) which includes lifestyle management functions (Skinner, Biscope, Poland, & Goldberg, 2003) with (potentially anonymous) peer-group discussion/support functions.

The JSNA identified teenage sexual health and childhood and adolescent obesity as key public health criteria. In terms of research evidence for research in sexual health, there is obvious commensurability between some of the anti-stigma initiatives made in relation to adolescent mental health. Teenage talk about sex in general and STD's in particular can be a source of great embarrassment for teenagers, leading to them not seeking out the requisite information. Social media, with assurances of anonymity, has an obvious benefit here. For example, Levine, McCright et al report on a sexual health project carried out in San Francisco (Levine, McCright, Dobkin, Woodruff, & Klausner, 2008). They report how, in response to increasing rates of STD's like Gonorrhoea, the department of public health initiated a SMS service for local teenagers. "SEXINFO"³ is an information and referral service that can be accessed by texting "SEXINFO" to a 5-digit number from any wireless phone. A consortium of community organizations, religious groups, and health agencies assisted with identifying culturally appropriate local referral services". They go on to report that "...usage of the service has been greater than expected, and an initial evaluation to assess the impact of SEXINFO on increasing access to sexual health services among at-risk adolescents has had promising results." (Levine, et al., 2008). Obviously this type of programme could be tailored to meet the needs of SCT and again, tailored to be responsive to individual queries. It is social in the sense that teenagers are able to initiate contact themselves, and that it can be tailored to be responsive to their specific problems.

In terms of issues of obesity, we want to initially draw attention to an interesting study into the effect of networks on weight loss activities (Wing & Jeffrey, 1999). They carried out a study looking at the effect of peer/social support on the likelihood of adolescents completing a weight loss programme. The main finding in this study was that recruiting participants with a team of 3 friends and treating them with a strong social support intervention decreased the number of dropouts and markedly increased the percentage of participants who maintained their weight loss in full over a 6-month follow-up period when the social support intervention was still in effect. Ninety-five percent of participants recruited with friends and given the social support manipulation completed the 10-month study. Sixty-six percent of these participants maintained their weight loss in full. Both being recruited as a group and being given the social support intervention contributed significantly to the high success at weight-loss maintenance. Social media interventions, whereby groups of adolescents could be facilitated to make new friendships, or build on existing ones, as part of weight loss programmes could be just the sort of project that SCT could be involved with. The important point to stress is that the role of SCT

³ <http://www.isis-inc.org/index.php>
cresi.essex.ac.uk

in this is not simply an information provision one. The key function is in setting out the processes such that the (virtual) social interaction of the participants can be facilitated by SCT. This virtual socialization could have a clear impact upon the success of weight loss programmes within SCT.

Finally, given recent research that suggests an increased willingness to use e-Health technologies by young people who have multiple risk factors (Tercyak, Abraham, Graham, Wilson, & Walker, 2009) social media services might enable engagement with traditionally hard to reach and difficult to engage groups. Further, there is growing evidence that fun-based activities can have stronger positive effects than problem or behaviour focused messages (DeBar, et al., 2009) and it is also becoming clear that engaging young people in the production of their own content provides a powerful engagement tool and a sustainable strategy (Neff & Stark, 2004). This resonates strongly with the suggestion, informed by the holistic approach, that attention should also be given to projects which can "provide ... volunteering and social support for young people who are at "high risk" of teenage pregnancy and other problem behaviours [since these] have been shown to be effective in modifying young people's behaviour, promoting safer sex and reducing teenage pregnancies." (Fletcher, et al., 2007, p. 33). It is quite possible that the co-creation of their own content and services by young people in partnership with a range of local service providers and stakeholders will not only engage them in healthy lifestyles *but also* provide structured life and vocational skills *and* social support.

5 SUMMARY AND NEXT STEPS

Overall it can be seen that as yet there is a lack of systematic evidence on the clinical outcomes of 'social media' interventions. However the evidence available does suggest that a range of social media services might be of use in tackling a number of health conditions or public health priorities and we would argue, based not only on this evidence but also on the well-known evidence of the role social relationships play in health, that this must be seen as just another set of 'marketing' channels.

Social media interventions need not only to acknowledge the history of social communication and the role of social relationships (as opposed to purely information consumption) in health but to engage their potential users in the generation of such services.

To return to the work of Granovetter, his distinction between weak and strong ties must form a key component of the proposed SCT Social Media strategy. In terms of weak ties (i.e. those ties between people brought together by shared common interest) then SCT should look to build on these weak ties by creating conditions for these people to come together to provide (virtual) social support and information resources for each other. If we take smoking cessation as an example, then the picture overleaf taken from Facebook provides an interesting example. This is a Facebook page⁴ that has been set up by the Smokefree NHS campaign. It is a general smoking cessation website that is open to anyone. As the page shows, it has over 20,000 people who have visited and declared that they 'like' the page. This is an example of the weak ties approach to social media. There is little to tie the social media intervention to place, it is much more about specific health behaviours. As can be seen from the picture, there is a repeated practice of the NHS Smokefree team posing questions and prompts for people using the page, in an attempt to elicit responses that might in turn, encourage other people to stop smoking. The emphasis is on the specific health behaviour rather than the locality. This is a key distinction between weak and strong ties within the social media context. For social media interventions that operate on basis of weak ties the emphasis needs to be placed on the condition or health behaviour (with no emphasis necessary in terms of place). This does not mean that place cannot feature in terms of how SCT might think about exploiting weak ties in relation to social media, just that this is not primary organising feature of the strategy in a weak ties context. For example (and very pertinent geographically) there is a reference to Sandwell Quitters United⁵ which is a weak ties intervention (mobilised around smoking) applied

⁴ <http://www.facebook.com/home.php?#!/NHSSmokefree?v=wall&ref=ts>

⁵ <http://www.facebook.com/home.php?#!/pages/Sandwell-Quitters-United-Smokefree/161821930500773?v=wall&ref=ts>

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Filters

Joe Callery i have started a new support group in the renfrewshire area and also on facebook page at help and support for stopping smoking if anyone is interested in having a look,thank you :) i stopped a year ago and now do voluntary work for the nhs to help people stay stopped
11 hours ago · Flag

Sandwell Primary Care Trust For those in the Sandwell area who are looking to quit, have quit or just slipped up , feel free to join a new page "Sandwell Quitters United: Smokefree" , make quitting a bit easier for someone else and share your stories, tips and news!!
19 hours ago · View feedback (1) · Flag

Paul Reid i quit smoking yesterday at 12 n doing ok on the nasal spray
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Tobi Frenzen "If you have already quit, what would you say to someone who was unsure about stopping?" – Answer: Nothing, I show them my iPhone :)
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NHS Smokefree If you have already quit, what would you say to someone who was unsure about stopping?
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Photos

to a specific geographical area. The focus is primarily on smoking cessation, so it would be regarded as a weak ties based intervention, but there may well be the possibility or opportunity for this intervention to draw on stronger ties within Sandwell. So whilst it might be about locality, it is the condition/behaviour specificity that is the key driver. Weak ties interventions may also be more suited to conditions that may cause embarrassment to people, or potentially stigmatised conditions, so anything related to sexual health, or issues of alcohol or substance use, and also mental health issues. All of these sorts of conditions may operate better in a social media where a degree of anonymity might be accorded to the participants⁶. In this context social media initiatives could be centred around the specific health issue, and the social media intervention would be geared towards creating a virtual meeting space for people with similar concerns. The emphasis would be placed on sharing experiences and personal understanding of these health issues (functioning in much the same way as Friedson's Lay Referral Networks (Friedson, 1960)). The key point is that social media can be mobilised around weak ties on a condition specific basis.

Granovetter characterised strong ties as those where people are bonded with people similar to themselves, and where they provide each other with emotional and social support. Given that in deprived communities strong ties tend to be locally based through dense local networks of family and friends, it would seem the most immediate way to utilise these strong ties within deprived areas of SCT would be in terms of a more community focussed approach. The efficacy

⁶ Although it should be noted that facebook as an example platform affords little anonymity if the user logs in with their 'real' identity.

of the strong ties based approach would be determined by the focus for the ties. For example, these strong ties could be conceived of at the level of a geographical area, or they could be characterised through reference to groups within the community, e.g. different BME groupings. These interventions would differ from the weak ties ones, in that the focus would be on the community, it would be the community that would provide the initial impetus for people to come together. Rather than being condition specific, strong ties social media interventions would enable SCT to tackle a range of deep-rooted and enduring health inequalities associated with specific areas or groups within the community. In regard to specific areas, rather than targeting specific behaviours, it might be more appropriate within a strong ties context to tackle issues such as post-16 participation in formal education, and the knock on effects this might have in terms of levels of social capital and social wellbeing within the community (see Anderson and Speed, 2009, for a summary of these effects). For example, some areas within Solihull report higher rates of teenage pregnancies. In previous work we have highlighted how those areas with high rates of teenage conception (areas such as Kingshurst, Chelmsey Wood and Smiths Wood), have high levels of IMD scores in relation to Education, Skills and Training (Anderson & Speed, 2009). This may offer evidence that areas of high teenage conception rates are areas of low educational, skills and training attainment. A weak ties approach may involve a sexual health education programme. The strong ties approach might target engagement with post 16-education as a means of countering teenage conception rates. The strong ties approach would look to involve family groups and peer groups, and seek to engage them with local further and higher education providers. Making this age group aware of the education and training possibilities may have an impact upon levels of teenage conception. It would be important in engaging these groups that they set the agenda in terms of the information made available from FE and HEI colleges and universities. This could be a place at which social media could be brought to bear. A forum could be introduced to this group to discuss education and training opportunities (where they could be encouraged to exchange views with each other) and where they could register whichever areas they were interested in. Within this forum they would be setting the agenda and being responded to by providers and this may serve as an effective means of engagement.

Of course, this example is a simplification. In the context of a strong ties intervention consideration must be given to other factors such as social class, ethnicity, family structure, family function and a range of other psychosocial factors (see Anderson and Speed, (2009), p. 39-40 for breakdown of interplay of these factors).

The focus in terms of strong ties interventions is area-based social interventions. Khunti et al outline the processes involved in developing a diabetes prevention programme for a South Asian population (Khunti, Yates, Troughton, & Stone, 2009). This is not a social media programme but it raises similar issues. There may be ethnic specific risks attached to specific conditions, or as the teenage conception example demonstrated, there may be ethnic variations in the complex interplay of psychosocial factors. Closed member Facebook pages, for example, could be used to facilitate interventions within and across specific ethnic groups. Areas with high levels of Bangladeshi residents could have tailored social media packages aimed at them, whilst other areas, with high levels of Pakistani groups could have similar. The same principle applies for any discernible community group. This type of approach would require the development of partnerships with representatives of these different community groups, as a means of engaging strong ties within the project. It is important in the strong ties context that ownership and membership be clearly tied to the constituent group, otherwise the group may well become topic or condition focussed rather than group focussed. Seeman details the positive role that strong ties have in relation to mortality risks and mental health (T. Seeman, 1996). She states that "individuals' networks of social relationships represent dynamic and complex social systems that affect health outcomes," The emphasis needs to be on how levels of general wellbeing can be improved through the development of

These strong ties based initiatives would require more public health information and more public health involvement (initially at least). This could be accomplished through the deployment of health trainers or even volunteer health advocates within the community who could be given some degree of training in terms of meeting the health needs and then deployed as advocates for the social media intervention (where knowledge could be shared (via weak or bridging ties) and social support could be fostered). These strong ties initiatives could also be targeted at community areas where there are high levels of informal support and

informal caring. Specifically social media platforms could be put together to provide information (provided by SCT) and support (provided by other members of the local community, and further afield). To clarify, in those instances where social media initiatives are aimed at issues characterised by weak ties (such as stated public health programmes mobilised around specific behaviours or conditions) then the emphasis should be placed on providing social media projects which can create the opportunity to foster social support amongst groups of people who want to stop smoking or to lose weight. These people already have the information they require (for example they have decided to stop smoking). The inculcation of social support networks amongst people connected by a single issue will improve the efficacy of those programmes.

In those instances where strong ties are present then the emphasis needs to be more on information provision, or a combination of information, clinical intervention and social support. To be clear, in areas where strong ties exist, then there is no real need to create the situation to foster social support. This is because social support is already a characteristic of the strong ties. In these contexts, the social media intervention would be better suited to engaging people with the idea of stopping smoking, or practicing safe sex, or taking more exercise. This is a key component to any successful social media intervention, it must build on the existing situation on the ground and be tailored to the specific nature of the social ties within the social groups or specified conditions.

In summary it is through social media, with its emphasis on peer-to-peer communication and the collaborative 'co-production' of content that truly 'patient-centric' health care can come about. With the recent proposals to restructure the English Health Service (DoH, 2010) there may be opportunities for Foundation Trusts, General Practitioner consortia and third parties from the 'social media' sector to introduce innovative services that go well ahead of the relatively timid information/choice/transparency oriented approach enshrined in the 'no decision about me without me' concept (DoH, 2010). For GPs such services may provide low cost means to improve patient outcomes or reduce demand for appointments whilst for the Foundation Trusts and other service providers they may be seen as a 'competitive edge' that support improved clinical outcomes and enhance their reputation for innovation.

Finally it is worth noting that we do not envisage SCT or any other future service provider developing their own bespoke social media services. It is far more likely that they will, and indeed should, make use of existing social media platforms in innovative ways. Thus online interventions should be developed with 'social media' hooks in mind so that the advantages of embedding them within existing social media platforms either by design through embedded applications/plugin/etc or through the actions of users/patients becomes the strategy of choice. It is only when interventions can be linked into and flowing through the widest possible sets of social networks that the full network externality effects⁷ of social media can contribute to a healthier population.

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⁷ A network externality effect is found when the value of a service (intervention) to an individual increases with increasing numbers of users. It tends to lead towards lock-in and a bandwagon effect. The telephone is of course a 20th century example but social network services are more recent examples.

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