prevention better than the cure?

Public health and the public pound multiplier
The UK’s population is ageing and so-called “lifestyle diseases”, such as type 2 diabetes, obesity and smoking and alcohol related conditions are on the rise. These issues are putting the NHS under unprecedented strain, a situation which looks set to worsen over the coming years, and is likely to be compounded by the serious financial problems faced by many trusts.

It is clear that structural reform and reorganisation will be needed to keep the NHS functioning. The most important strategic decision that health authorities can take is to renew their commitment to preventative measures and improving public health.

Prevention is always better than the cure, and it is usually more affordable. Investing in public health measures will lead to significant savings on acute healthcare in the long term and is the key to reducing the strain on the NHS in decades to come.

It is unlikely that existing funding models will be able to support ongoing health provision and public health all at once, so difficult choices will have to be made.

Unpopular approaches will have to be taken when dealing with some conditions, for example incentivising smokers to quit or reducing the availability of free surgical interventions for some patients. Measures such as these will increase funding in the short term and, in all of these instances, public services will have to closely align to make sure they deliver improved health outcomes.

In this paper we look at the changing delivery of public health following its transfer to local authorities, and the subsequent agenda in England. The paper considers the context of the debate around preventative measures and public health investment and whether the current methods of allocating resources are fit for purpose. It will then discuss how an integrated approach to allocating resources is vital if public health stakeholders are to improve outcomes - as well as some of the tough decisions that may be necessary to fund such interventions.
The body of evidence demonstrates that investing in public health measures that lower the risk of chronic conditions in the long term will lead to substantial savings in healthcare costs. All the resources spent on preventative action will pay for themselves several times over in cost savings; relatively inexpensive interventions can mitigate the spiralling costs of acute care down the line. The effect is a kind of “public pound multiplier” - targeting public investment effectively reduces financial pressures elsewhere.

Action on Smoking and Health (ASH) found in 2010 that existing tobacco control and prevention initiatives cost a maximum of £300m per year, with a net annual revenue benefit of £1.7bn - nearly six times the initial cost. For every £1 spent on psychosocial treatments for dependent drinkers, the public sector saves £5. A walking programme run by occupational health nurses that cost £56 per person - or £56,000 in total - saved a net £311,547 for the NHS overall. In each of these cases, £1 spent leads to savings of £5-6. If those kinds of savings could be replicated throughout the NHS, the health service would eventually see a reduction in financial pressure. To lock in those benefits, the government should commit to public health budget increases above inflation every year of the next parliament.

### Cost of health conditions to the NHS per year

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cost (Billion GBP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes</td>
<td>£10</td>
</tr>
<tr>
<td>Smoking</td>
<td>£8</td>
</tr>
<tr>
<td>Alcohol misuse</td>
<td>£6</td>
</tr>
<tr>
<td>Obesity</td>
<td>£4</td>
</tr>
<tr>
<td>Total</td>
<td>£26</td>
</tr>
</tbody>
</table>

There is also evidence on the benefits of services beyond core health spend, such as prevention of teenage pregnancy, leisure centre initiatives, investment in public transport, befriending services and housing improvements. For example, every £1 spent on preventing teenage pregnancy saves £11 in healthcare costs and every £1 spent on housing interventions saves £70 for the NHS over ten years.

In 2012 a team from NICE analysed 200 public health interventions ranging from smoking cessation to exercise on prescription. Their effectiveness was compared against a control. Overall, NICE found the interventions aimed at a whole population, such as mass-media campaigns to promote healthy eating or legislation to reduce young people’s access to cigarettes, were the most cost effective. Furthermore, of the interventions targeted at disadvantaged groups, such as those intended to reduce substance misuse among vulnerable young people or to help people return to work following long-term sickness absence, were less cost-effective but still met the value for money criteria.

Savings will be achieved over some years, so there is a period of ‘double running’ to tackle. Yet they are tangible and substantial - and crucially, they could go a long way towards relieving the financial pressures that have stricken the NHS. However, the long-term thinking that this shift in approach requires is often a low priority for governments working on a five-year electoral cycle.

Case study: SHU Wellness in the NHS

A six-month quasi-experimental workforce wellbeing programme was run in the Sheffield Teaching Hospitals NHS Foundation Trust. A representative sample of 50 hospital staff received a multi-level intervention based on an integrated motivational interviewing and cognitive behavioural approach and supported by workshops related to physical and mental wellbeing as well as healthy eating. Follow-up support was provided on a one-to-one basis.

Significant improvements were reported in total cholesterol, waist circumference and physical fitness in a six-month follow-up, while reduced systolic and diastolic blood pressure showed improvement alongside body mass index. In total 87 per cent said they had made changes to their lifestyle or health during the study, with 71 per cent increasing physical activity and a similar percentage making positive changes to their diets. Nearly a third introduced mental wellbeing strategies and 11 per cent reduced alcohol intake.

At a cost of £13,200, the programme was estimated to have saved the NHS Hospital Trust £36,223, based on measured reductions in sickness absence alone – meaning £3 were saved for every £1 spent.

---

8 The King’s Fund and Local Government Association, Making the case for public health interventions, 2014.


10 Data provided by Public Health England.
The combination of rising demand and tighter finances means the NHS is coming under tremendous financial strain. The National Audit Office found that by June 2014, NHS trusts were forecasting a £404m net deficit for the current financial year. Foundation trusts also projected a net deficit of £108m. Trusts that were in surplus were also likely to have seen these surpluses shrink. Although NHS England underspent by a net £279 compared to its original plans, specialised services reported a £377m overspend.11

However, more individual trusts were found to be in financial difficulties, indicating the picture is far from uniform. The financial position of individual healthcare bodies varies widely depending on trust structure, geographical location or the type of care on offer. London exemplified this. It had the highest surplus nationally, but also boasted the trust with the highest deficit in the country.

It is obvious that finances are not getting any easier: analysis from Monitor showed that in the first quarter of 2014–15, the foundation trust sector reported a deficit of £167m, with individual deficits at 86 trusts that totalled £227m.12 Cost savings were also far below expectations. Missed targets, such as the 62-day waiting time target for patients with cancer, were surely not coincidental.

These financial problems are compounded by increasing levels of acute care - usually the most expensive - for conditions that could have been avoided with the help of earlier intervention. The UK spends billions every year on issues such as smoking and alcohol-related diseases, obesity, diabetes, cancer and acute mental health services. Many of these expenses could be significantly reduced if authorities did more to promote healthy eating, exercise, immunisation and positive lifestyle choices. By providing better support for carers, early-stage mental health interventions and awareness programmes to encourage screening for different forms of cancer, they could go even further.

Failing to increase spending on public health and preventative measures clearly represents a false economy. Yet in a period where substantial budgetary increases are unlikely, there are serious questions to be answered regarding how to fund further public health investment.

86 trusts totalled a deficit of £227m


The factors that influence public health outcomes vary widely, from geographical location and ethnicity to household income and occupation. Specific health conditions, such as obesity and diabetes, are more common in disadvantaged areas and among specific ethnic groups. Lifestyle choices such as smoking and alcohol intake are related to these factors as well as the jobs people do and their household incomes. Worryingly, the groups at the highest risk include those who are hardest to reach – which means that even within ongoing programmes, different approaches will have to be taken to ensure the right people are receiving the message.

Investing in public health programmes that are targeted at these specific groups is likely to generate the most substantial cost savings. In practice it can be difficult to ensure that the public pound is being directed towards them effectively, but taking steps to maximise coverage in these high-risk populations will lead to the strongest public pound multiplier effect.

**24.6%** of year 6 children were obese in areas categorised as “Multicultural city life”, **22.9%** in “disadvantaged urban communities” compared to **13.7%** in urban fringe.

**In receipt, obesity stood at 6.6 per cent in the urban fringe, **11.1%** in disadvantaged urban communities and **12%** in multicultural city life.**

**43.4%** of Black or Black British children were obese by year 6 compared to **31.7%** of White children and **29.3%** of Chinese children.12.1

**Adults in households with income of £10,000 or less have the highest levels of drug use at **11.9%**, compared to **6.8%** in those with incomes of £50,000 or more.
It has been made very clear that public health and preventative measures represent the focus of future efforts to improve health outcomes and reduce the strain on the NHS. The coalition government established Public Health England to play a central role in delivering upon those aims. In October 2014, the organisation clarified its seven priorities to improve public health:13

Jonathan Marron, director of strategy at Public Health England, says that tight public finances in an age of austerity have put the focus on how best to spend the public pound. In the context of health, that has given the prevention agenda a fresh impetus – while a passionate community of professionals have favoured prevention for some time, that interest is at last becoming commonplace.

“The message that this is what we have to do is finally being shared across the political and clinical leadership,” he explains. “We’re in a position to do this in a much more serious way than we have in the past 20 years.”

With the NHS itself, moves are also being made to focus more heavily on prevention. NHS England’s Five-Year Forward View makes clear that the health service will play a central role in secondary prevention, insisting that it will back “hard-hitting national action on obesity, smoking, alcohol and other major health risks”.14 These will include a major nationwide diabetes prevention programme. In addition, the NHS will develop and support workplace incentive schemes to promote better health among employees, as well as calling for local governments to gain stronger powers regarding public health.

Although English regions will not all need or suit the same model of care provision, they will be offered a range of options to decide which will best meet the needs of the population. This is presented as a balance between localism and oversight, choice and standardisation, but there are still concerns that either the different models will increase the administrative burden on public health providers, or the options will be too restrictive to make much of a difference to the provision of care.

A renewed emphasis on prevention is certainly welcome, but coming at a time when funding is tight, challenges will only be met if sufficient resources are allocated in the fairest and most accurate way.

Public Health England’s seven priorities:
- Tackling obesity, particularly among children
- Reducing smoking and stopping children starting
- Reducing harmful drinking and alcohol-related hospital admissions
- Ensuring every child has the best start in life
- Reducing the risk of dementia, its incidence and prevalence in 65-75 year olds
- Tackling growth in antimicrobial resistance
- Achieving a year-on-year decline in tuberculosis incidence

---

13 Public Health England, From evidence into action: opportunities to protect and improve the nation’s health, 2014.
14 NHS, Five-Year Forward View, 2014.
The biggest cost savings are likely to be found through primary prevention strategies – those which work to prevent individuals from developing health problems in the first place. These can range from maintaining school playing fields and ensuring local government planning strategies encourage walking, to taxes on unhealthy foods and revised food labelling laws.

Significant cost savings can still be achieved through secondary preventative measures, which enable people to manage health problems effectively within the community, eliminating the need for acute care and minimising the risk of complications. Technology that could be used for self care may come at an initial cost, even though it is coming down in price rapidly, but could pay for itself several times over in the short and long term.

Crucially, education lies at the heart of both issues. Not only do people need to be aware of what constitutes a healthy lifestyle, but they need to be able to understand and manage their conditions if they do develop health problems. Information will form the basis of a new era of prevention – and marketing campaigns such as the government’s Change4Life are known to offer big rewards for comparatively small outlays.

Tam Fry spokesperson for the National Obesity Forum and patron of the Child Growth Foundation, says education is the crux of the issue when it comes to obesity. In particular, teaching children about a healthy lifestyle in schools will lead to huge long term benefits as it allows them to raise their own children to lead healthier lives.

“We need to stop obesity before it ever takes hold,” he says. “To do that you need to go back to preconception, pregnancy, first two years of life and preschool.

“Already by school entry we have a quarter of our children who are overweight and obese. We’ve got to do what we can to stop children becoming obese in the first place and a huge amount of effort needs to go into that to make it successful.”
Local authorities receive ring-fenced grants from the Secretary of State to cover these responsibilities. Following recommendations from the Advisory Committee on Resource Allocation, funding is apportioned according to the under-75 years standardised mortality ratio (SMR<75). Providing greater funding to areas with higher ratios is intended to prevent higher levels of early preventable deaths and other problems. However, local government still faces budgetary pressures elsewhere that are affecting other methods through which they can contribute to improving public health.

‘Local authorities are under significant pressure on resources, particularly those that impact on health, but are not part of the public health ring-fence. The ring-fence itself is holding up relatively well. All the more important to make more of the funds that are available.’

David Buck, senior fellow, public health and health inequalities, The King’s Fund
In the wider health economy, too, worries remain that proper funding allocation has also been slowed down by concern for the status quo. According to the National Audit Office, the impulse to protect local health economies - or rather, to maintain them as far as possible - has slowed NHS England’s and the Department of Health’s progress towards allocating funding fairly.\textsuperscript{15}

The report stated that funding allocation decisions are becoming more transparent and are generally sound. But tightening finances have made it difficult to achieve fairness while achieving financial stability, and as a result there is huge variation in the gaps between target and actual allocations. However, the speed at which trusts move towards the target allocations is decided not based on data, but judgment calls regarding what the local health economy can tolerate. That could mean that it will take a long time reach a point where funding is properly allocated, leaving some public health initiatives underfunded and some areas at a disadvantage.

\textbf{Case study: Trust for America’s Health}

Trust for America’s Health found that a five per cent reduction in type 2 diabetes and high blood pressure could save more than $5bn in healthcare costs, while reducing rates of heart disease, kidney disease and stroke by the same amount could take savings above $19bn.

An investment of $10 per person per year in proven disease prevention programmes based in the community could lead to $2.8bn net savings in healthcare costs per year over one to two years. Within five years that would rise to over $16bn, and in ten to 20 years nearly $18bn.\textsuperscript{16}

\textsuperscript{15} National Audit Office. Funding healthcare: Making allocations to local areas, 2014.

\textsuperscript{16} Trust for America’s Health, Prevention for a Healthier America: Investments in disease prevention yield significant savings, stronger communities, 2009.
Given that health and social care provision is arguably under more pressure than ever, “joined-up” care is essential. The emphasis on integration will grow further as demand becomes greater and more complex.

Local authorities make their funding allocation decisions according to the needs of their communities. However, the data that sheds light on these specific circumstances is often collated and analysed by the NHS. At the same time, the NHS retains responsibility for much secondary prevention - for example, the Five-Year Forward Plan indicates that NHS England and Public Health England will establish a preventative services programme - but they will need local support to make sure these services are delivered effectively on the ground. Total Public Health spend is £5.8bn of which local authorities’ spend this year is £2.7bn.

Information sharing is therefore a crucial element of the puzzle. NHS organisations and local authorities need to increase integration so they can share information and their resources to match need in each area. Yet at the same time, local authorities cannot be expected to wait until external sources have compiled and analysed data before they act.

This could mean that investment in big data, analytics and software integration has to be factored into the future funding model as a facilitator of effective service provision. Not only would that represent yet another budgetary pressure for providers, but it could prove unpopular, given that the NHS has a difficult history with ICT projects. Public and governmental appetite for such an undertaking may therefore be weak, yet it is likely the benefits would outweigh the inevitable cost.

In addition, responsibility for public health will go beyond NHS and local government organisations. Clinical commissioning groups also play a role in promoting public health initiatives, such as encouraging healthy lifestyle choices among patients. Local authorities will find themselves needing to work closely with multiple stakeholders and other commissioning bodies if they are to deliver continuity and consistency in their services.

On top of these concerns, an integrated approach must consider the impact of broader social issues which touch on other policy issues. Jobs, skills, education and housing all have serious impacts on mental health, income and lifestyle choices such as diet, alcohol and tobacco intake. A truly integrated approach would take all of these aspects into account - yet the financial and administrative requirements to make that a reality will be even harder to satisfy.

“Most of this isn’t new and a lot of people are doing it already,” says Jonathan Marron, director of strategy at Public Health England. “The question is about how we get good approaches everywhere.”

Any initial investment will be painful, given the existing strain on resources. As a result, achieving buy-in from every stakeholder may well prove impossible. But however the landscape of public opinion lies, difficult decisions will have to be made if we are to reshape the UK’s approach to the health of the nation.

“It’s not just about the public health part of local government but leveraging spend across all services - housing and social care have a public health angle as well.”

Michael Brodie, finance and commercial director, Public Health England
The focal point of integrated approaches is the Health and Wellbeing Board. As the forum within England in which leaders from health, social care and local authority services work together to improve public health among the local population, it holds the key to effective integration to ensure that every appropriate measure is being taken to reduce health inequalities and improve outcomes within its community.

Representatives on the Health and Wellbeing Board are best placed to understand the causes of poor health at the local level and develop the right interventions – as well as disseminating them in the right way. Effective co-operation, as well as frank and honest discussion, will be crucial if they are to realise their considerable potential.

David Buck, senior fellow, public health and health inequalities at The King’s Fund, says that Health and Wellbeing boards potentially have a major role to play – but there is likely to be regional variation regarding how effective they are. The important thing should be to ensure that they have the impetus to make the right collective decisions.

“There are no set priorities - this should be an explicitly local decision. What is key is that they have a proper process for deciding on, implementing, sharing with the public, and being held accountable for the priorities they choose,” he says.

‘The best decisions are taken locally. What you need is an informed local leadership tackling these problems and Health and Wellbeing Boards offer a great opportunity. When you answer the question of “What does my local population most need?” - that’s when you get the real advantages of local decision-making.’

Jonathan Marron, director of strategy, Public Health England
To accrue additional revenue to support these vital public health projects, it will be necessary to reduce some of the costs of acute care and/or generate additional income. It has already been heavily discussed in the media that high-risk groups, such as smokers, alcoholics or obese people could be made to pay at least a proportion of the cost of their care - or the availability of some surgical interventions on the NHS could be reduced.

If a cost reduction approach is to be taken, the NHS flagged bariatric surgery as a point of concern in the Five-Year Forward View. The fact that the NHS is currently spending more on these interventions than it is on an intensive lifestyle intervention plan prompted the report to state that over the next five years, the NHS plans to change that situation.

Though the report does not say that funding for bariatric surgery would be cut, it seems logical that if support for some operations was reduced it would be a prime candidate. However, Tam Fry, spokesperson for the National Obesity Forum, feels that this is the wrong target. In fact, bariatric surgery offers quick return on investment.

“Bariatric surgery is the one thing which could practically overnight get obese people down to a healthy weight,” he explains. “It’s been proven to be cost effective and reverse the trend of co-morbidity such as diabetes.”

Instead, Mr Fry argues that a “punitive” tax on “indulgence foods” such as sweets and chocolate would either put people off buying unhealthy foods or raise money that could be invested in prevention.

In other cases it will be harder to determine where the axe should fall, but even if a small cut was made from every area, stakeholders would be unlikely to universally back the move. Perhaps reducing the availability of operations would prove more effective as a deterrent. However, it is clear that funding will have to be found, whether by cuts elsewhere or by raising additional revenue.

However the necessary savings are made, it’s vital that every penny saved from cutting these services is pumped back into preventative action. While cost reductions that can go back into paying off the UK’s structural deficit may seem like a prudent economic decision, it will represent another false economy. Reinvesting the funds that have been freed up will lead to even more dramatic savings over the long term as the public pound multiplier takes effect.

17 NHS, Five-Year Forward View, 2014.
A number of areas that may merit investment are likely to be unpopular, but could be important elements of a long-term strategy to reduce the strain of treatment costs on the NHS - for example, offering financial incentives to encourage smokers to quit.

“Evidence suggests that incentive-based schemes can help some smokers to quit. Programmes targeted at particular groups, such as pregnant women and those on low income, appear to be the most successful and cost effective,” says Amanda Sandford, information manager at Action on Smoking and Health.

On the other hand, investing in specialist care may be a worthwhile option. Robin Hewings, head of policy at Diabetes UK, explains that people with diabetes spend three days longer in hospital on average, largely as a result of complications related to their condition.

“If the hospital invests in training staff to be more knowledgeable about diabetes and has input from specialists, you can easily cut that length of stay and get patients out of hospital quicker,” he explains. “We have examples where this has been done and healthcare providers have saved three to four times the cost of the initiative.”

However, one of the most promising areas for future investment could not have been anticipated even two decades ago. Mobile technology has grown in complexity and functionality yet continued to fall in price, and that means that there are more opportunities to engage the public in their own health and wellbeing than ever before. The rise of wearable technology opens even more doors.

“There are real opportunities to use digital technology with the science of behaviour change that will allow us to have much more personalised interventions and conversations with a much wider range of people, at a low cost we couldn’t have dreamed of ten years ago,” says Jonathan Marron, director of strategy at Public Health England.

Mobile apps and wearable technologies such as smartwatches could be used to empower individuals to track the exercise they take, monitor their eating habits and even keep track of their blood pressure. Not only does this give them a sense of control and engage them in managing their health, but it reshapes the public mindset on who is responsible for their health.

‘The long-term answer has to be somewhere at the intersection of big data, behaviour change, digital and wearable tech.’

Michael Brodie, finance and commercial director, Public Health England
Conclusion

There are significant cost savings to be made by investing in public health initiatives to prevent rather than treat chronic diseases. Current spending at £18.5 billion per year on obesity, type 2 diabetes, smoking and alcohol misuse will spiral in coming years unless investment is made now to take advantage of the public pound multiplier.

Some interventions will bring their own rewards in a short space of time, but others will take longer to bear fruit. Striking the balance between the two is vital to develop the public health agenda for the next decade and beyond.

The diversity of organisations now involved in delivering public health strategies means the need for collaboration and integration is greater than ever - especially when difficult strategic decisions need to be made that will have knock-on effects for all organisations.

Tough choices lie ahead, and the public sector as a whole needs to find the revenue to pay for preventative measures without crippling the health system. With the financial strain on the NHS evident and chronic diseases on the rise, the case for aligning public services and other stakeholders behind the health agenda can no longer be ignored.

If there is to be new money made available to the NHS, either in the short term pre-election or during the next parliament, that money must be used on primary and secondary prevention and not just on fire-fighting for high profile crises such as waiting times and urgent care overloads. It is likely that a combination of finding new money, raising additional revenue and strict prioritisation will be necessary.

There is evidence highlighted in this paper that preventative action can generate long term savings and that prize is sufficient to justify radical decisions in spending and revenue-raising. Now is the time to make bold decisions about funding and supporting public health interventions that will save the NHS billions.

5 key learning points
- Prioritise public health spending
- Channel cost savings back into preventative measures
- Focus on localised, integrated approaches to public health through Health and Wellbeing Boards
- Make difficult and unpopular decisions to fund preventative measures
- Strategically invest in the most promising technologies and programmes