

# Money well spent?

Assessing the cost effectiveness and return on investment of public health interventions



This briefing for councillors and officers explains the importance of assessing value for money in helping local authorities fulfil their public health responsibilities.

## Introduction

US statesman and scientist Benjamin Franklin once said “an ounce of prevention is worth a pound of cure”.

That, in a nutshell, sums up what public health is about – and the potential it has for achieving value for money.

In the 21st century, a huge burden of ill-health is avoidable.

About a third of all deaths are classed as premature – that is they could have been prevented by lifestyle changes undertaken at an earlier time of life.

That equates to 44 years of lost life per 1,000 people or 2.6 million years each year across England and Wales.

The main causes of these are smoking, lack of physical activity, obesity and alcohol misuse.

But when considering the cost of that illness it is not just the bill for the treatment and care that should be taken into account.

The economic consequences of premature death and preventable illness are considerable too.

These can include loss of productivity in the workplace and the cost of crime and anti-social behaviour.

For example, Dame Carol Black’s review of the health of the working-age population in 2008 estimated that the annual cost of sickness absence was over £100 billion a year.

Meanwhile, alcohol-related crime accounts for about 1m violent offences each year - half of the overall total.

If this avoidable ill-health could be reduced the savings would be considerable.

However, the funds available for prevention are limited. Local government has been given £2.7 billion this year – rising to £2.8 billion in 2014-15 – as a ring-fenced public health budget.

So any spending in this area needs to be clearly justified on cost-effectiveness grounds.

## Local government's role

Responsibility for public health transferred from the NHS to local authorities in April 2013 under the wider shake-up of the health service. It means upper tier and unitary authorities have become responsible for improving the health of their population.

The new duty is backed by a ring-fenced public health grant and a specialist public health team, led by the director of public health. Each top tier and unitary authority has a health and wellbeing board (HWB) which has strategic influence over commissioning decisions across health, social care and public health. Statutory board members include a locally elected councillor, a Healthwatch representative, a representative of a clinical commissioning group, a director of adult social care, a director of children's services and a director of public health.

HWB members from across local government and the health and care system work together to identify local needs, improve the health and wellbeing of their local population and reduce health inequalities.

The HWB is a key forum for encouraging commissioners from the NHS, councils and wider partners to work in a more joined up way. Central to achieving this is the HWB's responsibility for producing a Joint Strategic Needs Assessment (JSNA) and a Joint Health and Wellbeing Strategy (JHWS).

Local authorities will also have a statutory function to provide public health advice to clinical commissioning groups, while HWBs will have to monitor performance.

In terms of cost-effectiveness, this requires local authorities to provide advice to local partners about what works as well as prioritising spending on their own public health initiatives.

Under the reforms local government is responsible for commissioning a whole range of public health interventions, including smoking cessation, alcohol and drug misuse services, programmes to tackle obesity, behavioural and lifestyle campaigns and many sexual health services.

From April 2015, public health services for under 5s including family nurse partnerships and health visiting will also become their responsibility. This will enable public health services for 0-19 years old to be joined up.

Some of these interventions are mandatory, but many are discretionary interventions and therefore require councils to make informed decisions about what is the best way to spend money.

## How is the cost-effectiveness of public health interventions judged?

The National Institute for Health and Care Excellence has been responsible for assessing public health interventions since 2005.

Up to 2012 it principally based its calculation on a method known as cost-utility analysis. This considers someone's quality of life and the length of life they will gain as a result of an intervention.

The health benefits are expressed as Quality-Adjusted Life Years (QALYs) – or years of good health in lay terms.

As it does with drug treatments, NICE works on the basis that interventions costing less than £20,000 per QALY are cost effective. Those costing between £20,000 and £30,000 per QALY may be deemed cost effective under certain circumstances.

However, NICE has now further refined its approach to produce a more wide-ranging assessment process for public health.

It has done this by also placing emphasis on cost-consequences and cost-benefit analyses.

These methods consider all the health and non-health benefits of an intervention across different sectors. It includes direct costs, including health, care and transportation, indirect costs, such as productivity losses and criminal justice expenditure, and intangible costs related to improvements to an individual's quality of life.

## Case study

To illustrate the costs and benefits of public health interventions, NICE ran an analysis with Bury MBC to assess its range of smoking interventions using a dedicated tobacco return on investment tool.

Smoking rates in the Lancashire town are slightly above the national average at 23 per cent. It is estimated that smoking costs the town £10.7 million a year once the cost to the local economy and NHS is taken into account.

The analysis showed investment of just over £750,000 in smoking interventions for one year leads to a return of 63p over two years, £1.46 over five, £2.82 over 10 and £9.35 over a lifetime.

In terms of QALYs, this equates to £34,199 per QALY over two years, £12,574 per QALY over five, £5,040 per QALY over 10 and £80 per QALY over a lifetime.

Cost-consequences results in a balance sheet of outcomes that can be weighed against the costs, while cost-benefit converts them into a single monetary value.

But there are also a host of other variables that need to be considered when carrying out these assessments.

One is the timeframe over which the analysis is to be done. The nature of public health interventions means quite often the benefits are only realised over the medium to long-term – and, as such, this can have a significant bearing on the results.

Another factor that needs to be weighed up is what priority should be given to addressing health inequalities. This was demonstrated by an exercise carried out by Health England which assessed cost-effectiveness alongside reach.

Its 2009 report *Prioritising Investments in Public Health* looked at a range of measures. Using cost-utility calculations, mass media campaigns were four times more effective than getting GPs to discuss problem drinking with patients. But the GP intervention was nearly twice as good at reaching out to the most disadvantaged groups.

## Case study

Be Active is Birmingham City Council's scheme to provide free leisure services to its residents.

Participants register and are given a card which allows them to use a range of facilities from swimming pools and gyms to exercise classes and badminton courts for free during certain times.

A third of the local population has got involved since the project was launched in 2008.

But to help it build a business case the council asked Birmingham University to evaluate the project.

The research showed that three quarters of users were not previously members of a leisure centre, gym or swimming pool and half were overweight or obese. It also had a knock-on effect in other areas with rises seen in the numbers seeking help over smoking and alcohol.

Overall, for every £1 spent on the scheme £23 is estimated to have been recouped in health benefits. This has helped the team behind the project put the case for its continued funding.

## What works?

Last year a team from NICE analysed 200 public health interventions ranging from smoking cessation to exercise on prescription.

Their effectiveness was compared against a control. This included measures such as the background quit rate for smoking interventions, standard treatments or in some cases no intervention at all.

Thirty were found to be cost-saving, 141 were deemed good value for money – in other words they cost less than £20,000 per QALY - while seven fell into the £20,000 to £30,000 per QALY range.

The rest were deemed not to provide value for money or to actually cost more than they saved.

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.

Many of the interventions targeted at disadvantaged groups, such as interventions to reduce substance misuse among vulnerable young people or to help people return to work following long-term sickness absence, were less cost-effective although still met the value for money criteria.

Of course, NICE is not the only organisation to have looked at the cost effectiveness of public health interventions to help local decision-makers.

For example, in 2008 the Matrix Knowledge Group and Bazian were commissioned by the Department of Health to look at the issue. They analysed 41 different programmes and highlighted several areas that should be prioritised for investment, including smoking cessation, school-based programmes for obesity prevention and falls prevention for the elderly.

Another source of evidence is the supporting documents produced by government to accompany policy papers. For example, the 2011 cross-government strategy, No Health Without Mental Health, included an economic case paper setting out the available evidence on a host of interventions.

It cited research which showed alcohol screening and counselling by GPs had the potential to save the NHS and criminal justice system £40 million a year each, while parenting interventions aimed at those most at risk were estimated to save £9,288 a child over 25 years.

Meanwhile, the Public Health Interventions Cost Effectiveness Database includes data from the UK and abroad.



## Case study

It is important to think outside the confines of addressing direct health needs – as the work of St Mungo's and the local authorities the group partners shows with homeless people. Many homeless people suffer from health problems – one in 10 have drug, drink or mental health problems while two thirds have a physical health condition.

Take the case of Mark (not his real name). He was moved into a St Mungo's hostel from a psychiatric hospital, which was costing the taxpayer over £84,000 a year. He had diabetes and was frequently admitted to hospital. At the hostel he got care and was given help to get his diabetes under control. He also started exercising regularly and within two years had got his own flat. The cost to the taxpayer afterwards was just over £21,000, including his pension. The two years of help cost in excess of £80,000, meaning the intervention paid for itself in just over a year.

## Is enough being invested in public health?

Many experts would argue not as early intervention can help reduce the long-term cost on hard-pressed health and care services.

A strong case was put for investing more in public health as long ago as 2002 when the Wanless Report estimated that effective public health policy which led to high levels of public engagement in terms of their health could be saving the NHS £30 billion a year by 2022-23.

But despite the warning little seems to have changed. Calculating public health expenditure over the past decade is difficult because how much is invested has been up to local discretion until this year. However, there is widespread agreement it has remained pretty static at about 4% of the NHS budget – that is about the same as it is now once the national spending is added to the ring-fenced local government budget.

In 2007 Health England was saying that level of public health spending remained “relatively low compared to other advanced economies”, while last year the Journal of Public Health said there was insufficient investment in the area.

But it is not just for the sake of individual health that some argue public health investment needs to increase. Enabling Effective Delivery of Health and Wellbeing, an independent report which was produced by Sir Howard Bernstein, Dr Paul Cosford and Alwen Williams in 2010, made the case that extra investment could help the country prosper and flourish in light of the economic hardships being experienced.



More recently, the health regulator Monitor published a report, Closing the NHS funding gap, which said investment in public health along with greater innovation in clinical care was the key to helping keep the NHS sustainable in the long-term.

But with money so tight surely this is just wishful thinking? Not so, according to the Association of Directors of Public Health. The organisation has argued that the ring-fenced public health budget should not be seen as the totality of the money available for prevention. Instead, as everything from social care and transport to housing and leisure can have an impact the entire local government spend should be seen as a public health resource.

To help argue the case for extra investment, help is at hand. One of the key roles of Public Health England (PHE) is to support local authorities in their new public health role. While it is NICE's responsibility to carry out cost-effectiveness analyses, PHE is in the process of pulling together examples of best practice and key data to help key officers and members develop the business case for investment in public health.

## How councils can prioritise public health funding

- ✓ Agree public health objectives by drawing on the JSNA and JHWS.
- ✓ Identify options and interventions for reaching objectives.
- ✓ Consider what NICE guidance and other research has to say about these.

- ✓ Work out what your priority is. Is it to reduce health inequalities or have the greatest impact on the whole population?
- ✓ Carry out own assessment – perhaps a form of cost-consequences analysis - to determine how local factors influence cost-effectiveness.
- ✓ Also consider factors such as burden of disease in population and considering the measures and interventions that are already in place.
- ✓ Ask the key questions before proceeding. Have you tailored services to address multiple needs rather than commissioning a plethora of single-issue services? Are you using new technologies to develop services that are easier and more convenient for users?
- ✓ Evaluate interventions as they are rolled out. Those that are already tried and tested will need less monitoring than new approaches.
- ✓ Ensure elected members understand the benefits of investing to save.
- ✓ Take a council wide approach across all services to address public health issues.
- ✓ Consider pooling resources across sectors to enable greater integration of services which will lead to better health and wellbeing outcomes and cost savings.

## Want to know more?

### **NICE local government briefings on value for money**

<http://tinyurl.com/oxlbycv>

<http://tinyurl.com/pvqh5sx>

Local authorities can get tailored estimates on the potential cost effectiveness of their own stop-smoking schemes using NICE's tobacco return on investment tool:

<http://tinyurl.com/8c75g9s>

Similar tools will be published in the near future for alcohol and physical activity interventions.

Journal of Public Health article on NICE research into public health interventions  
<http://tinyurl.com/6rmsgvb>

Prioritising Investments in Public Health (Matrix Knowledge Group and Bazian 2008 report)

<http://tinyurl.com/nwt54ta>

Shifting the Gravity of Spending programme (National Institute for Health Research-funded programme which is looking to develop support for councils to prioritise public health spending)  
<http://tinyurl.com/nyw6ze6>

Public Health Interventions Cost Effectiveness Database (includes assessments carried out in the UK and abroad)  
<http://tinyurl.com/2wpm9oe>

LGA public health resources including tackling drugs and alcohol, teenage pregnancy, and obesity:  
<http://tinyurl.com/napyup6>

LGA website [www.local.gov.uk/health](http://www.local.gov.uk/health)





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