

The Best Laid Plans?
Avoiding unintended
consequences in public
policymaking



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Sound policies are urgently needed to reduce the profound health, social and economic harms associated with illegal drugs, and yet the most promising ideas are too often stifled by the fear of being perceived as somehow ‘weak’ in the face of an often hostile media.

“Events, dear boy, events.” That was Harold McMillan’s celebrated response to a journalist who asked what was most likely to blow governments off course. In politics in particular, and policymaking more generally, the best laid plans can be derailed by the unexpected.

In many cases, however, we should not be surprised when public policy comes unstuck. Too often policies fail to achieve their objectives not because of misfortune or unforeseeable events but because of mistakes in the policymaking process. Incomplete information, flawed assumptions, poor planning and evidence-defying political ideology are just some of the factors that can contribute to undermining sound judgment.

Drugs policy is an area that has suffered more than most where unintended consequences and ill-conceived approaches are concerned. The issues surrounding the use of controlled drugs are emotive, highly polarised and frequently elude objective analysis. Sound policies are urgently needed to reduce the profound health, social and economic harms associated with illegal drugs, and yet the most promising ideas are too often stifled by the fear of being perceived as somehow ‘weak’ in the face of an often hostile media.

Our job at the UK Drug Policy Commission is to be a voice of neutral objectivity in what can be a very heated policy debate. We are independent of government and special interests, and we do not come from any particular standpoint. Our mission is to identify and advocate better ways of making decisions about drug policy so that they are made consistently, with the best use of the evidence available.

One of the approaches we have been exploring is dependency modelling, a risk assessment strategy used first by the private sector to identify how a particular goal can best be achieved. A group of participants works together to state their goal clearly and build a layer-by-layer description of what is needed to achieve that goal. We’ve been working with Arium, an independent company specialising in risk modelling and decision support, on a pilot project to explore the use of dependency modelling to help avoid unintended consequences in drugs policy.

This paper is a report of that pilot project. Dependency modelling is not a silver bullet – it has its limitations, like every other form of policy analysis. What our experience has shown, however – and what this report reflects – is that Arium’s approach has the potential to be a powerful new tool in the policymaker’s armoury. It is a method that has helped us to anticipate and explore ways to rectify policies that are likely to prove ineffective or generate damaging unintended consequences.

Our hope is that this interim report will draw attention to what can be achieved through dependency modelling, and help to attract the funding that is needed to build on our pilot project with further research and development.

Nicola Singleton

Director of Policy and Research

United Kingdom Drug Policy Commission

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Executive summary

In 1936 the sociologist Robert Merton pointed out that unintended consequences can often be traced to challenges and flaws in the policymaking sphere

The past century of public policy is littered with examples of unintended consequences – the usually unforeseen, unplanned and frequently costly and damaging fallout from ill-conceived policymaking. Perhaps the most notorious case is the era of prohibition in the United States, when an honest attempt to curb alcohol abuse created a criminal leviathan of illegal bootlegging, extortion and gang violence.

This report sets out to dissect recent cases of unintended consequences in the UK and the United States, examining the flawed assumptions and incomplete thinking that lie behind them. It also explores how such unintended consequences might have been anticipated and avoided, and introduces a new approach to systematic policy analysis and risk modelling that has been developed and piloted in the UK.

In a seminal paper published in the 1930s, *'The Unintended Consequences of Purposive Social Action'*, the sociologist Robert Merton points out that unintended consequences can often be traced to challenges and flaws in the policymaking sphere. These include deeply entrenched value systems, flawed assumptions, the pressures exerted by political expediency and – most importantly of all – human error.

For Merton mistakes in policymaking may result from a lack of 'systematic thoroughness', or a failure to consider all of the pertinent facts when making a decision.

Arium, a company specialising in risk modelling and decision support, has developed an approach that can guide policymakers through the kind of structured, systematic thought process that Merton advocates. Using such a tool helps elucidate the linkages between a policy's goal and the steps necessary to achieve it. Explicitly outlining the 'how' of a policy unpacks the assumptions that might otherwise hide differences in opinion, competing intentions, or simple misconceptions about how the policy will actually achieve the stated goal. In this way it is possible to reduce the likelihood of error and improve the quality and effectiveness of policymaking.

The Best Laid Plans? features four case studies that show how well-intentioned policies can be derailed by unintended consequences:

- The introduction of waiting-time targets for accident-and-emergency units in the National Health Service was apparently successful in cutting waiting time and improving patient satisfaction. But health practitioners were found to be keeping patients waiting in ambulances, admitting some to the wrong departments and discharging others too early in order to meet the targets
- Biofuel subsidies in the United States, the EU and the UK succeeded in boosting the production of energy crops and bio ethanol, but only at the expense of inflated prices for food crops that have caused real hardship in poor countries
- The Bush administration's No Child Left Behind (NCLB) Act threatened tough penalties for poorly performing schools. In response some state education departments lowered their proficiency standards for literacy and maths to avoid punitive sanctions, instead of striving to attain a higher standard

Biofuel subsidies in the United States, the EU and the UK succeeded in boosting the production of energy crops and bio ethanol, but only at the expense of inflated prices for food crops that have caused real hardship in poor countries

- In seeking to empower US shareholders to curb very high levels of senior executive pay, the Securities and Exchange Commission's policy of mandating the disclosure of salaries and bonuses served only to fuel rocketing wage inflation. Once levels of remuneration were made public, senior executives could use the information to their advantage and boards found themselves under pressure to match what their competitors were paying.

In each of these cases, vague or poorly conceived goals were pursued through inappropriate mechanisms, often informed by flawed assumptions. Following a more systematic policy development process could have helped anticipate unintended consequences and guide policymakers toward better decisions.

Today's policymakers have a wide range of weapons in their policy development armouries. These including evidence-based analysis, pilot projects, academic inputs and learning from the practical experience of other countries. All have their benefits and their limitations, and Arium's new approach of systematic policy analysis and risk modelling is no exception. It is intended not to replace or supersede other approaches but to underpin them.

Arium has built on its extensive experience of risk modelling in the insurance, financial and aviation sectors to develop its approach. At the heart of that approach is dependency modelling – a risk assessment strategy used by the private sector to identify how a particular goal can best be achieved. A group of participants works together to state their goal clearly and build a layer-by-layer description of what is needed to achieve that goal.

The description created is built into a strict logical structure that provides a clear 'map' of what is needed to achieve the stated goal. The process of building this map lays bare the assumptions of participants, exposes gaps in thinking, and highlights areas where the causal connection between policy and goal is unclear.

One of the first applications of Arium's approach was an analysis of the UK's policy on illicit drugs, conducted in partnership with the UK Drug Policy Commission (UKDPC). Arium and the UKDPC explored the potential of risk modelling to provide insights into the UK's current policy towards illicit drugs and signal potential new approaches.

Arium and UKDPC created a partial model of drugs policy via a series of workshop sessions. A modeller worked with a team of staff from the commission to identify a clear policy goal and translate their knowledge and assumptions about the relationships between different aspects of the issue into a logical map.

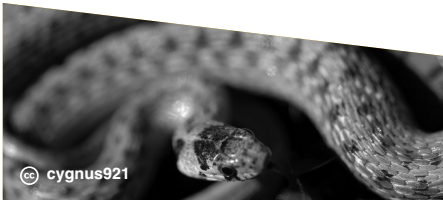
In this time of large-scale budget deficits and widespread austerity measures, policymakers can ill afford to make costly mistakes that put public-service goals in jeopardy or drain resources from the public purse. Never has there been a greater need to anticipate and avoid unintended consequences, and to do so in a cost-effective way.

The experience of the UKDPC in its work with Arium is that risk modelling has the potential to play a very useful role in anticipating and avoiding damaging unintended consequences. By carefully selecting a clear, achievable goal, and identifying systematically the conditions necessary to reach it, policymakers can potentially inject greater objectivity and thoroughness into the process of policy development.

The next step is to test this methodology further. The UKDPC commends Arium's work to date, and Arium itself is seeking funds and partners for further research into and piloting of the risk modelling approach. Risk modelling is an idea that Arium hopes will attract particular interest and support from policy think-tanks and charitable foundations with an interest in promoting and delivering sound and cost-effective public policy.

In this time of large-scale budget deficits and widespread austerity measures, policymakers can ill afford to make costly mistakes that drain resources from the public purse.

Introduction



Creating a market for snakes

Writing at the turn of the 20th century, the American journalist William Ellroy Curtis highlighted an example of a government effort to control snakes that had distinctly unexpected results.

In British-controlled India, Curtis explained, deaths from animal attacks were common. In the ten years from 1892 to 1901, official statistics showed that more than a quarter of a million people were killed in attacks by snakes, tigers and other dangerous animals. To combat the obvious danger from such attacks, the Government of the Province of Bengal began offering a bounty on dangerous animals. Hunters were rewarded for every snake, tiger or other wild animal skin turned in.

The scheme was initially a great success, with tens of thousands of skins turned in every year. As the years went by, however, officials began to question how the animals concerned could still exist in such large numbers in the wild.

A change in the rules, requiring bounty hunters to provide proof that the snake skins they were submitting had come from wild snakes, led to a sharp drop in the number of submissions. It also revealed an unwelcome truth: it turned out that the bounty had encouraged enterprising Bengalis to farm snakes for the reward money.

On 14 February, 1929, at around 10.30am, seven people were shot dead in a Chicago parking garage. The culmination of a years-long struggle for territory and influence between Al Capone's 'Chicago Outfit' and Bugs Moran's 'North Side Gang', the St Valentine's Day Massacre is one of America's most notorious organised crime killings. But it means more today than a quick stop on a Chicago tourist bus. The massacre itself, and the policy of prohibition with which it is associated, are an enduring reminder of the dangers of ill-considered and ill-designed public policymaking.

The unintended consequences of prohibition

By 1917 American policymakers had been trying to constrain the use of alcohol for over three decades. Under unremitting pressure from prohibitionists, who decried alcohol's detrimental effects on individual health and social well-being, Congress and the various states enacted a constitutional amendment in 1919 that prohibited the sale or consumption of alcohol anywhere in the United States. Provisions for enacting the ban, including a 1,500-strong federal agency to enforce it, were elucidated in the 1920 Volstead Act.

The ban led to at best modest reductions in alcohol consumption¹. But alongside these reductions it facilitated catastrophic increases in individual and organised crime. Traditional saloons were replaced by illegal 'speakeasies', with estimates of their number ranging from 200,000 to 500,000². In the years following the amendment the number of distilleries seized by federal agents ballooned, from 95,933 in 1921 to 282,122 in 1930, while convictions for alcohol-related crimes nearly doubled, from roughly 35,000 in 1923 to 61,383 in 1932³.

Thirty prohibition agents were killed in just the first three years of the Volstead Act. Organised criminals, attracted by the profits of selling bootlegged liquor, fought an increasingly fierce battle against both federal agents and other gangs. The St Valentine's Day Massacre was that battle's most infamous salvo. At the same time the federal government was deprived of the revenue from excise taxes on alcohol. The income lost to the public purse amounted to \$483 million in 1919 alone: a little over 9% of federal budget receipts⁴.

Thus, in one of the worst law-enforcement episodes of modern American history, policymakers with well-intentioned goals created a criminal leviathan that only began to recede with the repeal of the law⁵. It would be easy to think of prohibition's failure as a largely unavoidable tragedy, its catastrophic unintended consequences the unforeseeable outcomes of an honest attempt to improve the quality of life for all Americans. While it is true that some policies are genuinely waylaid by unforeseeable misfortune, however, prohibition was not one of them.

¹ Miron, Jeffrey (1999) *The Effect of Alcohol Prohibition on Alcohol Consumption* NBER Working Paper No. w7130, Harvard University Department of Economics: National Bureau of Economic Research.

² Lee, Henry (1963) *How Dry We Were: Prohibition Revisited* Englewood Cliffs, NJ: Prentice-Hall.

³ Internal Revenue Service figures quoted in Cherry, Andrew et al (2002) *Substance Abuse: A Global View* Westport, CT: Greenwood Press.

⁴ US Census Bureau (1949) *Historical Statistics of the United States, 1789-1945* (http://www.census.gov/compendia/statab/past_years.html)

⁵ <http://www.cato.org/pubs/pas/pa157.pdf>



The Tyndale Bible

When William Tyndale set about creating the first English translation of the Bible, it was a controversial and dangerous project. A vernacular translation would break the hold of the Latin-speaking priesthood on interpreting scripture, presenting a real challenge to the role and authority of the Catholic Church.

Tyndale wrote his first translation while in hiding in Germany. Thanks to the new technology of the printing press, copies were soon being printed in Antwerp for distribution in England.

Cuthbert Tonstal, the then Bishop of London, was determined to suppress the book. His idea was to employ Augustine Packington, an Antwerp merchant, to buy up all unsold copies so that they could be destroyed. Unfortunately for Tonstal, however, a complete sell-out was very much in Tyndale's interest. As his contemporary John Foxe put it: "The Bishop of London had the books, Packington had the thanks, and Tyndale had the money."⁸

The unintended consequences of buying up unsold copies were demonstrated by one of Tyndale's associates, George Constantine. Apprehended by the Church, Constantine was asked how it had been possible to distribute so many bibles. "I will tell you truly," he responded. "It is the Bishop of London that hath holpen us, for he hath bestowed among us a great deal of money upon New Testaments to burn them; and that hath been... our only succour and comfort."⁹ Far from stamping out Tyndale's Bible, Tonstal's intervention funded a second, much more extensive print run and so became a key part of its success.

Policymakers failed, for example, to consider that their policy addressed only the supply of alcohol and not the demand for it. That demand was substantial prior to prohibition and did not meaningfully abate afterwards⁶. In addition the authorities did not anticipate the scale of the enforcement problem that would arise in criminalising the social activities of a large swath of the population. Nor did they learn the lessons of criminalising other activities. Prostitution and gambling had both been outlawed for the betterment of society, and both businesses had been willingly taken up by criminal gangs. Yet even as their policies were turning alcohol into highly coveted contraband, policymakers failed to see the extent to which their approach might serve the interests of illegal organisations with little interest in maintaining peace.

Chance failure and human error

Robert Merton, a leading sociologist at the time, was puzzled by this phenomenon and explored it in his seminal 1936 paper, 'The Unintended Consequences of Purposive Social Action'. Merton suggested that unintended consequences could only sometimes be attributed to "chance consequences...occasioned by the interplay of forces and circumstances which are so complex and numerous that prediction of them is quite beyond our reach". They could also be traced, he asserted, to the 'limitations' of policymakers' behaviour, including the imperatives of their value systems, political expediency and, most importantly, error.⁷

For Merton mistakes in policymaking may result from a lack of 'systematic thoroughness', or a failure to consider all of the pertinent facts when making a decision. It is how today's politicians might learn the lessons of episodes such as prohibition, and do a better job of avoiding unintended consequences, that is the subject of this report.

Let us be clear. We are not arguing that any particular outcome can be predicted. Rather, we posit that the likelihood of generating unintended consequences, particularly those arising through error, may be anticipated or foreseen – if policymakers systematically analyse proposed policies thoroughly before enacting them.

Our report features a case study, for example, in which policymakers might have better anticipated some of the negative consequences of championing the growing of biofuel crops. Had they done so, they might have changed policy or enacted parallel policies to mitigate any detrimental effects.

The role of wrongful assumptions

It is our contention that the errors policymakers make are often linked to their assumptions about the world – assumptions about the nature of the problems they are trying to address, the appropriate means of solving them, and the likely outcomes of any particular action. If these assumptions are not challenged through a systematic, rigorous policymaking process, they may turn out to be the root cause of costly 'errors' that lead to grave unintended consequences or less effective policies.

Modern politicians are facing many challenges Merton would have recognised in the 1930s – economic stagnation, high unemployment, an uncertain international environment, and entrenched social immobility. They are also grappling with many new problems. For today's policymakers to succeed where others have fallen short, it is imperative that they do not repeat past errors, and that will require innovative new decision-making techniques and tools.

⁶ <http://www.cato.org/pubs/pas/pa157.pdf>

⁷ Merton, Robert (1936) 'The Unintended Consequences of Purposive Social Action' *American Sociological Review* 1(6). Merton's reflections on unintended consequences also include the phenomenon of self-fulfilling prophecy, in which the very predictions that policymakers make can directly or indirectly increase the likelihood of such predictions coming true. There is much literature on self-fulfilling prophecies; it is the other aspects that lead to unintended consequences that are the subject of this paper.

⁸ Curtis, William Ellroy (2008) *Modern India Gloucester*: Dodo Press.

⁹ Ibid

Explicitly outlining the ‘how’ of a policy unpacks the assumptions that might otherwise hide differences in opinion, competing intentions, or simple misconceptions about how the policy will actually achieve the stated goal.

Finding a new approach

Arium, a company specialising in risk modelling and decision support, has adopted an approach that can guide policymakers through the kind of structured, systematic thought process that Merton advocates. Using such an approach helps elucidate the linkages between a policy’s goal and the steps necessary to achieve it. Explicitly outlining the ‘how’ of a policy unpacks the assumptions that might otherwise hide differences in opinion, competing intentions, or simple misconceptions about how the policy will actually achieve the stated goal. In this way, we believe, it is possible to reduce the likelihood of error and improve the quality and effectiveness of policymaking.

Our report is divided into three sections. The first explores a series of case studies to illustrate the various ways in which unintended consequences can manifest themselves. The second describes the decision-making approach that Arium has developed and explains its application to the policymaking process. Finally, our third section looks at a project undertaken by the UK Drugs Policy Commission and Arium, using Arium’s approach to explore the unintended consequences of UK drugs policy.

1: Exploring unintended consequences in public policy

For nearly every imaginable policy problem there are myriad mechanisms being advocated by companies, organisations, foundations, think tanks, and other voices in the policymaking sphere.

Unintended consequences arising from government action are an all-too-familiar pattern in public policy. In this chapter, we examine a number of prominent examples to clarify how they can arise. Before beginning, however, it is useful to define some key terms. ‘Policymaking’ and ‘unintended consequences’ are both common words or phrases with seemingly obvious meanings. For the purposes of this paper, however, we need to pin down exactly what we mean.

‘Policymaking’

Most public discussion of ‘policymaking’ actually focuses on politics. Citizens hear about the progress of a Bill through Parliament, or the number of votes an amendment has achieved, or the potential of an embarrassment for the Government. This process is critical to the enacting of policy, of course. But by the time a policy reaches Parliament its goals and preferred methods have, for the most part, already been defined. Policymaking, for the purposes of this paper, is the earlier, planning phase, during which those making policy:

- Identify the problem or issue to be addressed, such as illiteracy among children
- Define the desired outcome or ‘policy goal’, such as the education of illiterate children
- Select a method or ‘policy mechanism’ to achieve that goal, such as enforcing sanctions against schools that fail to meet testing standards.

At each stage of this process, there is the potential for error. Illiteracy is undesirable, of course, but the real problem might be that children entering school do not have the social skills required to learn. Having children who are educated may be considered a laudable goal, but there may be little agreement as to what ‘educated’ means and whether and how educational achievement should be measured. Different interest groups may also attach conditions to the goal: they may want education to come at a low cost, for example, or to fulfil other social goals such as social equality or mobility.

For nearly every imaginable policy problem there are myriad mechanisms being advocated by companies, organisations, foundations, think tanks, and other voices in the policymaking sphere. Sanctioning poorly performing schools could be one of dozens of proposed mechanisms, including extending the school day, reducing class sizes, eliminating art or music to spend more time on the basics, or increasing teachers’ pay to attract better-qualified candidates.

As we will see in the following case studies, choosing a clear goal and an appropriately matching policy mechanism is far from easy. But policies with poorly defined goals and inappropriate policy mechanisms are likely to generate unintended consequences and are more likely to fail.

'Unintended consequences'

The basic definition of 'unintended consequences' is, seemingly, clear: they are outcomes that were not meant to occur. In the policymaking sphere, however, this explanation oversimplifies the problem of unintended consequences that we set out to define and discuss in this report. Policies might generate unintended consequences while nevertheless achieving their stated goals, or they might singularly fail to meet their primary objectives as well as creating unforeseen side-effects.

Revenge effects and side effects

The historian Edward Tenner¹⁰ argued that unintended consequences were not all created equal. He identified several types of unintended consequences, which we can summarise as falling into two basic categories:

- Revenge effects undermine, counteract or detract from the original goal. Taxes on high earners, for example, are a popular means of raising revenue, but may come with the revenge effect of some wealthy people emigrating or switching to non-domiciled status. While such effects often result in a policy's failure, they do not always do so. If additional tax revenue from wealthy people who remain in the country significantly outweighs the lost revenue from those who emigrate, then the tax in this example will achieve its goal of earning additional revenue.
- Side effects are consequences outside the realm of the intended goal. The prohibition example in our introduction is a classic case of unintended negative side effects. A policy intended to improve public health led to a significant growth in organised crime.

The case studies in this paper highlight examples both of revenge effects and side effects in public policymaking. We briefly explore the key mistakes made by policymakers in each case, arguing that more rigorous policy modelling might have helped to mitigate or avoid unintended consequences.

¹⁰Tenner, Edward (1996) *Why Things Bite Back: Technology and the Revenge of Unintended Consequences* London: Vintage Books

Case study 1 NHS Accident and Emergency waiting times



The policy mechanism chosen – a target enforced by sanctions and incentives – invited manipulation by hospital administrators and staff. A great deal was at stake for individual managers and hospitals, including institutional independence, funding, and even managers' jobs.

Labour swept to power in 1997 on a platform of public service reform. Commitments to measurable targets for improving public services became the hallmark of Labour's first two terms in office, and nowhere was this approach more prevalent than in the National Health Service.

In 2000, in response to public demand for more timely treatment in A&E departments, English hospitals were given four years to reach the target of treating, admitting or discharging 100% of patients within four hours. Each hospital was to be awarded an annual 'star rating' based on its progress towards achieving this and other targets.

High star ratings afforded both personal and institutional benefits. Managers had more opportunities for advancement. Hospitals were given public praise, freedom from some government oversight, and financial rewards. Low ratings, on the other hand, could mean dismissal for senior managers and hospitals being placed under closer scrutiny. The Government hoped that this combination of carrot and stick – of significant incentives, measurable performance targets and possible sanctions for under-performance – would improve patients' experiences in hospital¹¹.

The outcome has been complex. A 2004 National Audit Office study found significant reductions in A&E waiting times throughout England. In 2002, it reported, nearly a quarter of patients spent over four hours waiting for treatment. By 2004, however, that proportion had fallen to just 5.3%. And the same report found that patients' satisfaction with their care improved alongside waiting times¹². The self-reported progress reports provided by hospitals and the annual reviews conducted by the Government were also positive¹³.

Yet the target's apparent success masked problems. On average, waiting time performance dropped by 20 points in the week following an inspection. A survey of doctors conducted by the British Medical Association (BMA), a regular critic of targets in general, suggested widespread manipulation and abuse of the system. Doctors from half of the A&E departments surveyed reported that patients had been admitted to inappropriate departments simply to meet the target, and 40% reported discharging patients who had not been appropriately assessed or stabilised¹⁴. Twenty-seven per cent of respondents believed that the target had adversely affected patient care¹⁵.

Other surveys have found similarly troubling issues. The Commission for Health Improvement found evidence that patients were required to wait in ambulances to delay their arrival into A&E until the four-hour target could be met¹⁶. Unison, the union that represents EMTs (emergency medical technicians), echoed that claim two years later when it reported that patients were being 'stacked' in ambulances if the target could not be met¹⁷.

A study by the academic Christopher Hood found more subtle effects. Performance was not always accurately recorded or reported, he found, casting doubt on the Government's statistics. Treatments might be started within four hours but the outcome for the patients was often unclear because there was no target for completing treatment or even ensuring that the treatment given was appropriate. And since there was no reward for treating patients as rapidly as possible, some patients still found they were waiting for hours for a procedure that takes only minutes.

¹¹ National Audit Office (2004) *Improving Emergency Care in England* London: NAO.

¹² *ibid*

¹³ BBC News (2003) 'A&E target survey rubbished' <http://news.bbc.co.uk/2/hi/health/2955942.stm>

¹⁴ BBC News online (2005) 'Target putting A&E care at risk', March 13 <http://news.bbc.co.uk/1/hi/health/4339653.stm>

¹⁵ *ibid*

¹⁶ Hood, Christopher (2006) 'Gaming in Targetworld: The targets approach to managing British public services' *Public Administration Review*, July/August.

¹⁷ BBC News (2008) 'Anger at 'patient stacking' claim' http://news.bbc.co.uk/2/hi/uk_news/7249514.stm

Since there was no reward for treating patients as rapidly as possible, some patients still found they were waiting for hours for a procedure that takes only minutes.

Targets are a tempting tool for policymakers. They help to define a problem in simple terms and provide a measure of progress, making success easy to track and communicate. In this case, however, selecting and enforcing a target created serious side effects. Admitting patients to inappropriate departments, discharging them early, leaving them waiting in ambulances...all these unwelcome consequences of the target are clearly detrimental to patient well-being.

Furthermore, the apparent success of the target at lowering waiting times cannot be fully trusted. Many hospital staff dramatically changed their behaviour in order to meet the target on inspection days, cancelling surgeries and bringing in temporary workers. It is difficult to assess what the target actually achieved on an average day, without the extra measures introduced for the benefit of the inspectors.

The target regime, then, created damaging side effects that undermined patient care in return for significant (but probably flawed and certainly unsustainable) declines in A&E waiting times. Errors and flawed assumptions are apparent at several points in the process. First, the selection of an individual target elevated the importance of reducing A&E waiting times above other priorities, including patient care. A medical goal that does not have patient well-being at its apex is likely to be an inappropriate one.

Furthermore, the policy mechanism chosen – a target enforced by sanctions and incentives – invited manipulation by hospital administrators and staff. A great deal was at stake for individual managers and hospitals, including institutional independence, funding, and even managers' jobs. Policymakers assumed that potential negative consequences would motivate doctors and hospitals to improve the quality of their care. With so much resting on a narrow target, however, there was every incentive to play the system to guarantee success, even at the expense of patient health. And with infrequent inspections providing the only check on hospitals' achievement, there was plenty of scope for abuse.

Had the policy been more thoughtfully designed, policymakers could have unpacked their assumptions about how hospitals and doctors might behave. They could also have analysed properly how or whether a waiting time target might contribute to patient care. Had they designed an enforcement regime with the health system in mind, rather than an individual target, they could have better ensured consistency of quality rather than simple adherence to targets.

Case study 2

Transparency in executive pay



Instead of reducing excessive executive pay, “public knowledge of salaries has created in the US a sort of ‘race to the bottom’ in which companies have to be willing to pay unjustifiable amounts of money to retain good management”

Though the recent financial crisis brought public outrage over ‘fat cat bosses’ to fever pitch, moderating executive pay has been a long-term goal in the United States. The Securities and Exchange Commission (SEC) has had some form of compensation regulation on its books since the 1930s and has updated its regulations at least once every decade¹⁸. Despite this regulatory action, however, the growth in senior executives’ compensation has continued to outpace that of their employees. In 1980 the ratio of chief executive to employee pay was about 40:1¹⁹. By 1990 this ratio had rocketed to 85:1²⁰, and in 2008 it reached an incredible 319:1²¹.

Over the past 20 years one of the SEC’s key strategies for curbing the growth of executive pay has been to require greater disclosure to shareholders about what executives earn. Financial regulators argue that in the corporate world it is ultimately shareholders who are responsible for executive compensation. In order for the market to function, noted an SEC official, shareholders must be able to make informed decisions about their investments and hold directors to account²². It is shareholders, after all, who elect the board of directors that negotiates the executives’ pay packets and who are free to replace those directors.

In 1992 the SEC passed an important set of reforms that was intended to provide shareholders with greater insight into the compensation being awarded to their executives. Public companies were required to provide key pieces of information on each of their top four executives, including salary, bonuses, and numbers of shares awarded in stock options²³.

Regulators went further down this path in 2006, with even more detailed disclosure requirements. Many more forms of compensation – the dollar value of stock options, perks, bonuses, retirement benefits and salary – had to be reported in a single, bottom-line figure. Boards had to provide a detailed narrative of how they agreed each pay packet. And they had to comment on each award’s relationship with company performance²⁴.

Larry Bumgardner, a Pepperdine University-based academic, was convinced that these policies would lead inexorably to higher executive pay. No board would pay less than a competitor, he reasoned, and no chief executive would accept less than he could get elsewhere²⁵. It now seems that he was right. Subsequent studies have shown that these disclosures did little to curb executive pay. Instead, as we have seen, executive pay has rocketed since 1990 – just before the first significant disclosure policies were promulgated.

Paolo Cioppa, of the University of California at Berkeley, argues that this dramatic growth in remuneration alongside the introduction of disclosure regulations is not a coincidence. While it is likely that pay disclosure helps to ensure that shareholders are better informed, Cioppa writes, “the availability of these numbers constitutes an enormous advantage for CEOs and CFOs”. Unless paid at a level equal or above the market average, “a CEO/CFO may well decide to move to a different corporation”. And instead of reducing excessive executive pay, “public knowledge of salaries has created in the US a sort of ‘race to the bottom’ in which companies have to be willing to pay unjustifiable amounts of money to retain good management”²⁶.

¹⁸ Breheny, Brian (2009) Testimony concerning the oversight and regulation of executive compensation, given before the US House of Representatives, Committee on Financial Services, June 11, 2009. Available at www.sec.gov/news/testimony/2009/ts061109.bvb.htm

¹⁹ Bumgardner, Larry (2008) ‘High CEO pay could draw renewed attention in an election year’ *Graziado Business Report* <http://gbr.pepperdine.edu/082/ceopay.html>

²⁰ *ibid*

²¹ AFL-CIO (2008) *Trends in CEO Pay* (2008) <http://www.aflcio.org/corporatewatch/paywatch/pay/>

²² Breheny (2009) *op cit*.

²³ Baird, Jonathan and Stowasser, Peter (2002) ‘Executive compensation disclosure requirements: the German, UK and US approaches’ <http://crossborder.practicallaw.com/4-101-7960>

²⁴ Grant, Terry and Grant, Gerry (2008) ‘Can regulations curb excessive executive pay?’ *Strategic Finance* www.allbusiness.com/company-activities-management/company-structures-ownership/11726561-1.html

²⁵ Bumgardner (2008) *op cit*.

²⁶ Cioppa, Paolo (2006) ‘Executive compensation: The fallacy of disclosure’ <http://works.bepress.com/paoloccioppa/>

Policymakers tried to limit the growth of top executive pay without reference to any external measure, such as an annual percentage increase, or executive-to-employee salary ratio, or even a salary cap. Lacking a clear goal, policymakers were hard pressed to effect a successful policy.

Transparency is a popular policymaking tool. In theory it gives people the information they need to make a decision without limiting their freedom to choose. In this case, however, transparency not only failed to curb the growth of executive pay rates but also speeded their rise – a dramatic example of a revenge effect.

This serious unintended consequence can be traced to two key errors. First, the goal that policymakers were trying to achieve was not defined closely enough. The intention was to limit the growth of executive pay, but in relation to what? There was a general sense that pay rates were unseemly, but policymakers tried to limit their growth without reference to any external measure, such as an annual percentage increase, or executive-to-employee salary ratio, or even a salary cap. Lacking a clear goal, policymakers were hard pressed to effect a successful policy.

Second, transparency proved to be too indirect as a mechanism for achieving the goal in this case. Shareholders, the targets of the information, could influence pay rates only through the hiring and firing of directors. If shareholders were broadly happy with the returns from their shares, or simply did not feel that taking an active role in controlling executive pay was an efficient use of resources, then they did not need to devote their time or attention to replacing directors.

Even activist shareholders displeased with levels of executive pay may weigh any consideration of action against a number of other variables in the hiring and firing of directors. Activists' anger at exorbitant salaries might be counterbalanced, for example, by a commitment to securing high dividends or to pursuing a promising new direction for the company. Furthermore, if alternative candidates for the board prove to be equally committed to securing top executive talent whatever the cost, then firing the old directors will have little impact.

Perhaps most importantly, while the shareholders being supplied with pay information often have a range of varying interests and motivations, there are others with access to that information who are powerful and highly motivated not to curb senior executive remuneration. Because of disclosure regulations senior executives themselves, pay committees and headhunters could all observe what other executives were earning. And their interests tended to lie in increasing pay, not controlling it.

Once information is made public one can no longer discriminate between consumers of that information. That is precisely the point of transparency. While policymakers might have assumed that publicising exorbitantly high pay would shame executives into accepting lower pay, this outcome appears not to have occurred. Instead information empowered those with an interest in higher salaries far more than it enabled effective control for shareholders.

Interestingly, the SEC anticipated exactly this outcome. In a 2006 speech Chester Spatt, its Chief Economist and Director of the Office of Economic Analysis, noted that pay could well increase with greater disclosure. He speculated that changing the level of information could have detrimental competitive effects between companies and between executives. Gauging the results over the coming decades would be an interesting challenge for economists, Spatt opined²⁷.

Had policymakers thought more carefully about what they wished to achieve, perhaps they could have identified effective mechanisms and measures to help curb executives' pay. At the very least, they might have unpacked some of their assumptions about how and why they expected the policy to work. While more careful thinking might not have mitigated the political pressures inherent in such a touchy subject, it is possible that a systematic analysis could have provided the basis for identifying a better policy.

²⁷ Spatt, Chester(2006) 'Financial regulation: economic margins and unintended consequences' Speech given on 17 March 2006 - www.sec.gov/news/speech/spch031706css.htm

Case study 3 Biofuel subsidies



US, EU and UK policies created powerful incentives for growers to alter what they were planting and to bring new land – whether fallow or wild – into production.

In recent years there has been a flurry of legislation to encourage the production and use of biofuels – in the UK, the United States and around the world. Policymakers have promoted plant-derived fuels as a secure, carbon-neutral and renewable source of fuel with the potential to improve energy security while reducing carbon emissions. The jury is still out on their value as an environmentally friendly energy source²⁸, however, and the shift of agricultural resources from food production to fuel production has contributed to a significant rise in global food prices, causing real hardship to some of the world's poorest people.

In 2005 the US President, George Bush, signed the Energy Policy Act into law. This \$14 billion piece of legislation included provisions to nearly double American ethanol production²⁹, calling for 7.5 billion gallons of ethanol to be produced annually by 2012. In 2007 the Bush administration raised and extended ethanol production targets, challenging US growers to produce 36 billion gallons annually by 2022. If this target is reached, it will mean there has been a ten-fold increase on 2005 production levels in less than 20 years³⁰. Achieving the president's targets has been made easier by government incentives, including a 51-cents-per-gallon payment to blenders to add ethanol to gasoline, and tariffs of 54 cents per gallon to protect the domestic market from international competition³¹.

The European Community set a similar production target in 2006, when it announced that biofuels should meet 5.75% of Europe's transport fuel needs by 2010³². The target was helped by a 2004 subsidy of €45 per hectare for fields planted with biofuel crops such as sugar beet, switchgrass and maize³³.

The UK introduced an additional set of targets and subsidies. These included the Renewable Transport Fuel Obligation, which called for 5% of Britain's transport fuels to be made from renewable sources by 2010³⁴, and subsidised their sale with a 2005 cut in the fuel duty for ethanol³⁵.

These policies created powerful incentives for growers to alter what they were planting and to bring new land – whether fallow or wild – into production. In 2006 14% of the US corn crop was processed into ethanol; by the 2009 harvest, ethanol was projected to use 30% of America's corn. New and expanded ethanol refineries have sprung up throughout the Midwest to process corn into fuel, and 14 million acres have been brought into corn production since 2006³⁶. In the UK non-food crop production increased by 75% between 2003 and 2005³⁷. In the EU as a whole ethanol production more than doubled from 2004 to 2006³⁸.

For every acre that farmers used to grow corn for ethanol, they had to bring an acre of fallow land into production or take an acre out of production for food crops and animal feed. In the United States and Europe there are only so many fallow acres that can be brought back into production. Because of this limited availability of land it was foreseeable that food production would suffer as biofuels boomed, and that worldwide prices for staple crops would rise.

²⁸ Romm, Joseph (2007). 'The Fuel on the Hill'. Salon, 20 December 2007, <http://www.salon.com/news/feature/2007/12/20/biofuel/#>. See also 'Global biofuel trends' (<http://earthtrends.wri.org/updates/node/180>); Barclay, Christopher (2008) 'Biofuels and farming' Standard Note SN/SC/4269, House of Commons Library <http://www.parliament.uk/commons/lib/research/briefings/snsc-04269.pdf>; Rubin, Ofir, Carriquiry, Miguel and Hayes, Dermot (2008) 'Implied objectives of US biofuel subsidies' http://www.econ.iastate.edu/research/webpapers/paper_12866.pdf

²⁹ 'Global biofuel trends' op cit.

³⁰ Romm, Joseph (2007) op cit.

³¹ Westcott, Paul C (2007). 'US ethanol expansion driving changes throughout the agricultural sector'. *Amber Waves*, September - <http://www.ers.usda.gov/AmberWaves/September07/Features/Ethanol.htm>

³² Department for Environment, Food, and Rural Affairs (2009), <http://www.defra.gov.uk/foodfarm/growing/crops/industrial/energy/energy2.htm#biofuels>

³³ Barclay, Christopher (2008) op cit.

³⁴ Renewable Fuels Agency website (2011) 'About the RTFO' (<http://www.renewablefuelsagency.gov.uk/aboutthertfo>)

³⁵ Department for Environment, Food, and Rural Affairs (2003) 'The facts on biodiesel and bioethanol' <http://www.defra.gov.uk/foodfarm/growing/crops/industrial/energy/pdf/Biofuels-leaflet.pdf>

³⁶ Westcott, Paul (2007) op cit.

³⁷ Barclay, Christopher (2008) op cit.

³⁸ 'Biofuel production in EU member states' <http://dataservice.eea.europa.eu/atlas/viewdata/viewpub.asp?id=3507>

For consumers, price increases for staple crops are not an academic matter. They can make the difference between feeding one's family and going hungry.

The 2008-2017 edition of *Agricultural Outlook*, published jointly by the UN's Food and Agriculture Organisation (FAO) and the Organisation for Economic Cooperation and Development (OECD), described biofuel demand as "the largest source of new demand in decades and a strong factor underpinning the upward shift in agricultural commodity prices".

The FAO/OECD commodity price projections to 2017 are telling. Prices for all four major crops (wheat, coarse grains, rice and oilseeds) are expected to fall back from their peak levels but to stabilise at significantly higher average levels than before the crisis, reflecting structural economic changes including biofuel production. Furthermore, the average prices forecast for oilseeds and coarse grains – the crops most used in biofuels – are nearly identical to their peaks³⁹. High prices will provide a long-term market incentive to plant these crops at the expense of food production, and there is little chance that the subsidies in either the US or the EU will be removed any time soon.

The upward trend in prices has not been limited to these four basic crops; high grain and oilseed prices reverberate through the entire food chain. The US Department for Agriculture projects that 10% of the total US corn crop will be diverted from animal feed into biofuels, making poultry, hog and steer production more expensive. In 2007 one observer correctly predicted that retail price increases for red meat, poultry and eggs would exceed the general inflation rate between 2008 and 2010, as the livestock sector adjusted to higher feed costs⁴⁰.

For consumers, these price increases are not an academic matter. They can make the difference between feeding one's family and going hungry. During the price spike of 2006-2008, to which increased biofuel production was a major contributor, developing countries were hit hard by staple price increases. In countries such as Haiti and Kenya, where families spend upwards of 50% of their income on food, food price inflation reached 12% and 24% respectively, causing real hardship⁴¹.

The World Bank predicted that the food crisis caused by the price spike could push 100 million additional people into poverty⁴². Food riots were all too common during the crisis, as people in Mexico, India, Burkina Faso and a number of other countries protested loudly about rocketing food prices.

Subsidies are a blunt policy tool. They are used to encourage a variety of behaviour, from increasing production of steel to building a particular kind of car or opening a supermarket in a particular neighbourhood. What subsidies cannot do is prevent the knock-on effects that may follow.

In the case of biofuels, subsidies to encourage production were spectacularly successful at increasing the supply of plant-derived ethanol. In their success, however, were sown the seeds of undesirable unintended consequences. Land devoted to ethanol production could not be used to grow food, contributing to both a short-term price spike in 2006-2008 and structurally higher food prices for at least a decade to come. These side effects were especially devastating because they affected primarily the poor, particularly people in developing countries whose situation was already precarious.

³⁹ OECD-FAO (2008) *Agricultural Outlook, 2008-2017* <http://www.fao.org/es/ESC/common/ecg/550/en/AgOut2017E.pdf>

⁴⁰ Westcott, Paul C (2007) op cit.

⁴¹ OECD-FAO (2008) op cit.

⁴² World Bank web site news (2008) 'Food price crisis imperils 100 million in poor countries, Zoellick says' -

<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21729143~pagePK:64257043~piPK:437376~theSitePK:4607,00.html>

In this case study we can again see the consequences of unacknowledged assumptions, poorly conceived goals and ill-matched policy mechanisms. Here, increasing the supply of domestically produced biofuels was chosen as the centrepiece of energy policy, in preference to other possible options.

Ethanol's place in the energy mix is hotly debated, particularly outside the agricultural states that gain most from subsidies. Decision-makers could have benefited from a systematic analysis of both what their energy needs were and what was really required to fulfil them. Even if corn-based ethanol was deemed the most vital new energy source of all those available, a thorough planning process could have helped anticipate and plan for some of the knock-on effects of increased production, including land use changes and price rises.

³⁹ OECD-FAO (2008) Agricultural Outlook, 2008-2017 <http://www.fao.org/es/ESC/common/ecg/550/en/AgOut2017E.pdf>

⁴⁰ Westcott, Paul C (2007) op cit.

⁴¹ OECD-FAO (2008) op cit.

⁴² World Bank web site news (2008) 'Food price crisis imperils 100 million in poor countries, Zoellick says' - <http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21729143~pagePK:64257043~piPK:437376~theSitePK:4607,00.html>

Case study 4 No Child Left Behind



President Bush's 2014 objective of 100% proficiency in reading and maths was highly ambitious, given that virtually no improvements had been made in national literacy or numeracy tests in the previous decade.

No Child Left Behind (NCLB), signed into law in January 2002, was the centrepiece of President George Bush's first-term domestic agenda. This ambitious policy had several interlinked objectives, including:

- Making the education system more accountable to parents and children
- Raising educational standards in each state and nationwide
- Eliminating the achievement gap between white and minority-ethnic students.

Standardised testing, the Government argued, could help achieve all these three goals by providing an objective measure of annual achievement that could be easily communicated to parents and other stakeholders. Each state was therefore required to test its students in the core subjects of reading and maths, with the goal of achieving 100% proficiency in those subjects nationwide by 2014. Those schools and districts that did not make adequate yearly progress towards proficiency would be subject to a series of increasingly harsh penalties, ranging from a redistribution of federal funding to managerial restructuring and even school closure.

NCLB appeared to set tough standards. Many of the states' old strategies for masking poor test scores were outlawed. Unlike previous federal testing requirements, which allowed states to report average scores and thus hide low achievement in some groups, NCLB test scores had to be disaggregated by gender and race. At least 95% of students overall and in each gender and racial sub-group had to participate in the testing, so schools could no longer send their worst-performing pupils home on test day.

Each school or school district had to be judged on an additional indicator. For secondary schools this indicator was graduation rates, while primary and middle schools were allowed to choose from a variety of indicators, including retention rates and attendance statistics.

President Bush's 2014 objective of 100% proficiency in reading and maths was highly ambitious, given that virtually no improvements had been made in national literacy or numeracy tests in the previous decade. Equally challenging was the expectation of Adequate Yearly Progress (AYP), which called on states to make steady annual increases towards the 100% proficiency goal. If a school missed AYP targets, tested fewer than 95% of its students, or fell short on its additional performance indicator, it was subject to a series of increasingly harsh penalties.

Though schools were given a pass for a single instance of missed AYP, two consecutive years of missed targets triggered a series of negative consequences. Initially a transgressing school would be labelled 'in need of improvement' and required to draw up a two-year plan for improvement. It would also be compelled to permit students to transfer to another school – a potentially costly requirement because federal funding for schools is allocated on a per-pupil basis.

After a third year of failing to meet targets, schools were required to spend some of their federal budget allocation on private tutoring for their students. A fourth consecutive year of missed AYP required the school to implement 'corrective action', including hiring new staff, implementing new curricula, and employing outside consultants. In the fifth year schools had to develop a restructuring plan, which might require fundamental alterations such as re-opening as a charter or privately run school, and in the sixth year restructuring plans would have to be implemented.

⁴³ Dillon, Erin and Rotherham, Andrew (2007). 'States' evidence: what it means to make Adequate Yearly Progress under No Child Left Behind' - www.educationsector.org/research/research_show.htm?doc_id=511096

⁴⁴ *ibid*

⁴⁵ Institute of Education Sciences (2009) *NAEP 2008: Trends in Academic Progress* Washington, DC: IES.

⁴⁶ *ibid*

Although the Government required 100% proficiency in reading and maths, it was left to the states to decide what 'proficient' should mean for them in each subject and at each grade level, and to develop and administer a test of the proficiency levels they defined.

It is notable that these penalties do not seem to be designed to support a school in improving its results. Rather, they seem to be designed to be onerous, in order to give schools the greatest possible incentive to avoid falling into punitive measures. This approach reflected policymakers' belief that schools possessed untapped capacity to deliver better results and lacked only the incentive to do so.

Most experts agree that the reforms did not drive up school performance. Under pressure to deliver ever-improving performance or face serious penalties, states tended to manipulate the targets regime to avoid penalties. The state authorities responsible for setting tests were sometimes complicit in this manipulation because some relaxed standards to avoid pushing schools into penalty performance.

Although the Government required 100% proficiency in reading and maths, it was left to the states to decide what 'proficient' should mean for them in each subject and at each grade level, and to develop and administer a test of the proficiency levels they defined. Like the accident-and-emergency waiting time targets in the UK, NCLB assumed that states would honestly pursue improved outcomes despite the extremity of demands placed upon them and the seriousness of the consequences associated with failure. But like the A&E time targets, NCLB was a system ripe for manipulation. The evidence suggests that as the system was implemented, state standards plummeted nationwide.

On the surface, at least, educational achievement appeared to be improving dramatically. In 2005 Mississippi reported after state exams that 87% of its fourth-graders were proficient in reading. In Alabama 72% of fourth-graders were said to be proficient in maths⁴⁷. Both were remarkable figures in states with chronically low literacy and numeracy rates. But both had to be called into serious question when compared with the states' results on the National Assessment of Educational Progress (NAEP).

The NAEP, a federally administered test given to students nationwide since 1971, is commonly used as an external check on state NCLB results. It found that just 18% of Mississippi's fourth-graders could read proficiently, and that only 19% of Alabama's fourth-graders were proficient in maths .

Paul Peterson and Frederick Hess found similar contradictory evidence when they examined exam results and NCLB findings in other states. According to their study, just a handful of states had NCLB and NAEP scores close enough to call them honestly comparable; the vast majority had considerable gaps between state and federal achievement levels, which the authors interpreted as evidence of widespread manipulation of the targets regime⁴⁸. And although the Government trumpeted improvements in NAEP scores after NCLB's implementation⁴⁹, a closer look at the data shows that NAEP scores were already following an upward trend before NCLB measures were introduced⁵⁰. This context suggests that subsequent improvements may have had little or nothing to do with President Bush's reforms⁵¹.

⁴⁷ Saulny, Susan (2005) 'Meaning of 'proficient' varies for schools across country' *New York Times*, January 19 <http://www.nytimes.com/2005/01/19/education/19scores.html>

⁴⁸ *ibid*

⁴⁹ Peterson, Paul and Hess, Frederick (2006) 'Keeping an eye on state standards: a race to the bottom?' *Education Next*, Summer.

⁵⁰ US Department of Education (2005) 'No Child Left Behind Act is working' www.ed.gov/nclb/overview/importance/nclbworking.pdf

⁵¹ Institute of Education Sciences (2009) *op cit*.

⁵² Lee, Jaekyung (2006) 'Tracking achievement gaps and assessing the impact of NCLB on the gaps: an in-depth look into national and state reading and math outcome trends' Harvard Civil Rights Project, June.

Far from providing an incentive for improvement, the demanding standards and severe penalties for failure introduced by the No Child Left Behind Act prompted states to try to get around the targets regime.

Far from providing an incentive for improvement, the demanding standards and severe penalties for failure introduced by the No Child Left Behind Act prompted states to try to get around the targets regime. The Act not only failed to deliver the hoped-for improvements in achievement but also ended up significantly undermining public faith in state tests. These failures are partly due to the context in which the Act was introduced. One observer noted that states were already struggling to deal with President Clinton's ambitious reforms of the 1990s and many state-level departments of education simply could not keep up with the administrative requirements imposed by both programmes⁵³.

In many cases the 100% proficiency standard was virtually unreachable by legitimate means. It is no accident that the South, home to some of the lowest literacy rates in the country, posted the highest discrepancies between NCLB and NAEP results⁵⁴. The southern states faced the greatest challenges in meeting the NCLB goals and had to contend with the greatest potential for missed AYP. They thus had the greatest incentive to play the system. Lee echoed this point in 2006, writing that "the higher the stakes of the state assessments, the greater the discrepancies between NAEP and state results"⁵⁵.

Like the attempts to limit senior executive pay discussed above, NCLB stands as a stark and sad reminder of the perils of revenge effects. A policy designed to improve educational achievement not only failed to do so but also reduced the rigour of curricula and standardised tests nationwide.

It is difficult to argue that improving educational performance is a poor goal — it is a common and important one for governments across the world. But the means chosen to achieve that goal under NCLB were poor. The Government wanted to improve educational achievement, but emphasised standardised test results above all other measures of such achievement. It failed to account for schools' socio-economic context. And it threatened severe penalties for schools that failed to make the grade on standardised tests, only to decline the opportunity to set those tests. The Government's approach left the states free to write their own exams and to do so in such a way that they could ensure the required progress. The policy was doomed to fail almost from the start.

Conclusions

We can safely conclude that none of these unfortunate outcomes was the result of chance or the ineffable complexity of the world. Each of the above case studies demonstrate how error — what Merton called a lack of systematic thoroughness — can lead to damaging unintended consequences in a variety of fields.

In each case, vague or poorly conceived goals were pursued through inappropriate mechanisms, often informed by flawed assumptions. And in each, a more systematic process could have helped anticipate unintended consequences and guide policymakers toward better decisions. In the remaining chapters, we will explore what we mean by such a systematic process, introducing a policymaking tool developed by Arium and examining its application to a real policymaking project.

⁵³ Carey, Kevin (2007) 'The Pangloss Index: how states game NCLB' www.educationsector.org/wr_doc/The_Pangloss_Index.pdf

⁵⁴ Peterson and Hess (2006) op cit.

⁵⁵ Lee (2006) op cit.

2: A new systematic policy analysis and modelling approach

The new policy development framework offered by Arium is not meant to replace or supersede other approaches but to complement them and so strengthen the policymaker's armoury.

Policymakers have an immensely difficult task. In environments complicated by the competing agendas of different stakeholders, they must address problems that often have no obvious solutions. They need tools to help them make sense of social issues and map a course to a solution.

In this chapter we briefly explore the principles of systematic policy analysis, and why it is an approach that can help policymakers anticipate unintended consequences. We also look specifically at the systematic policy analysis and risk modelling approach that Arium has developed.

Before introducing the concept of systematic policy analysis, it is worth mentioning some of the other policy development tools at the disposal of policymakers and highlighting their potential disadvantages. The brief overview of more established approaches that follows does not pretend to be comprehensive. Nor is it our intention to question the undoubted merits of other approaches. The point we wish to make is that all methodologies have their limitations – including systematic policy analysis and risk modelling. The new policy development framework offered by Arium is not meant to replace or supersede other approaches but to complement them and so strengthen the policymaker's armoury. Established approaches include...

Evidence-based policy development

Evidence-based policy is public policy informed by rigorously established objective evidence. It focuses on asking 'does it work in practice?', which is an essential question for policymakers to address. It raises challenging questions of its own, however, such as what should be measured to quantify the effectiveness of policy, and what forms of measurement should be used. There are also some limitations to the evidence-based approach that mean that it needs to be complemented by other approaches.

One such limitation is how difficult it is to unravel precisely which actions and events have contributed to a particular set of consequences. Merton calls this attribution of contributory factors 'causal imputation'⁵⁶, and it involves considering both the intended and unintended consequences of policies. In the NCLB case study earlier in this report, for example, to what extent were improvements in literacy due to a myriad of previous policies beginning to take effect or to NCLB itself?

Another factor that needs to be considered is potential damage. If the answer to the question 'does it work?' is that a policy intervention has been ineffective or had unintended consequences, then harm has been done and that needs to be quantified. For example, our executive pay case study illustrates an increasing disparity between average and executive pay that might not be rolled back even if disclosures cease.

An evidence-based approach alone is inadequate if a situation is not readily reversible, because it may prove too difficult to apply the policy lessons learned. In some cases, as with subsidies such as Europe's Common Agricultural Policy or the invasion of Iraq or Afghanistan, achieving an exit or reversal could be very challenging.

⁵⁶ Merton (1936) op cit.

Trying to measure whether an intervention is working can cause its own problems.

Many measurement tools have not fulfilled their intended roles and yet the checklists, paperwork and multiple standards that accompany them have burdened and demoralised those who have to use them.

There is also a concern that trying to measure whether an intervention is working can cause its own problems. At a conference called 'Valuing Impact' convened by New Philanthropy Capital in 2009, representatives of non-profit organisations discussed a number of unintended consequences that can arise in measuring performance. These included:

Distorted behaviour. Setting targets can negatively affect people's behaviour if they pursue those targets to the detriment of an important overall goal – see our A&E case study. Management priorities and competition for money can end up being driven by a single measurable variable rather than an understanding of the total value of what organisations have to offer.

Selection bias. Focusing on measurement could introduce a selection bias for projects: those that are easier to measure, for example more replicable projects, may become easier to fund or justify than those projects that may be necessary or most appropriate.

Measurement burden. Many measurement tools have not fulfilled their intended roles and yet the checklists, paperwork and multiple standards that accompany them have burdened and demoralised those who have to use them.

Disproportionate impact on small organisations. Small organisations bear a heavy burden relative to their larger counterparts because they have fewer resources to devote to measurement.

Discouragement of innovation. There was a fear that the emphasis on measurement might discourage organisations from trying riskier or innovative projects that might be more difficult to achieve or measure.

Pilot projects

To help identify effective policies and avoid unintended consequences, policies are often piloted before being rolled out on a wider scale. When well conceived and well managed, this approach can be very illuminating. But piloting policies is a costly and time-consuming business that has its limitations.

Geographically circumscribed and time-limited pilots can often fail to reveal unintended consequences that arise as a result of greater scale, longer duration or wider context. For example, a pilot smoking ban conducted in summer, if it is truly summer weather, may not capture the potential impact of cold weather on the effectiveness of a ban on smoking indoors.

Another limitation on the reliability of pilot projects can be a tendency for them to be conducted by organisations that are highly committed to an idea and/or very comfortable with innovation. This tendency can make the conditions in which pilots are conducted deceptively positive in terms of the prospects for successful implementation on a larger scale.

Some policies, such as changes in taxation or criminal law, simply cannot be feasibly piloted on a limited scale. They may involve introducing subsidies or incentives which, once offered, are not easily withdrawn.

Adopting ideas from other countries

As well as or instead of developing pilot projects, policymakers often look to the experience of other countries for ideas on how to solve difficult policy problems. They may also lean towards implementing solutions that have already proved to be effective at a smaller scale in other places. There is a danger, however, of selecting policy mechanisms that are well suited to a particular set of local conditions, without necessarily translating well into different circumstances. The smoking ban in Italy, for example, might not have the same effect as bans in more northern countries.

Dependency modelling provides a potentially powerful tool for anticipating – and rectifying – policies that are likely to prove ineffective or generate damaging unintended consequences.

Systematic policy analysis

As we have seen, unintended consequences frequently arise when goals are poorly defined, assumptions remain unchallenged, and policy mechanisms are selected that do not clearly match the goal. Throughout this paper, we have argued that many unintended consequences are the result of errors that can be anticipated through ‘systematic thoroughness’. But what does that mean in practice?

Stated simply, a systematic approach of the type developed and championed by Arium will carefully define what, precisely, a given policy intends to achieve. It will also walk policymakers through the step-by-step process required to reach that goal. It is a deliberate process that leverages policymakers’ knowledge of the problem and their environment to anticipate and avoid unintended consequences.

The Arium approach

Arium, an independent company specialising in risk modelling and decision support, has worked with policy experts in a number of fields to develop what it believes has the potential to offer a real step forward: a sophisticated, software-based approach to systematic policy analysis. Support is now needed for further research and development.

Underpinned by a problem-solving strategy that provides an innovative approach to risk modelling, Arium has already successfully tackled problems that many analysts considered too complex or unpredictable to be usefully modelled. Now the company has built on its extensive experience of risk modelling in the insurance, financial and aviation sectors to develop a unique new approach to public policy analysis.

Modelling risk and dependencies

At the heart of the Arium approach is dependency modelling – a risk assessment strategy used by the private sector to identify how a particular goal can best be achieved. A group of participants works together to state their goal clearly and build a layer-by-layer description of what is needed to achieve that goal. The description created is built into a strict logical structure that provides a clear ‘map’ of how to achieve the stated goal.

Unlike simple ladder diagrams or timelines, dependency modelling applies a rigorous form and consistent rules to policy analysis, leading not just to a more useful diagram but also a logically sound structure that can be used to calculate the probability of various outcomes. The process of building this map lays bare the assumptions of participants, exposes gaps in thinking, and highlights areas where the causal connection between policy and goal is unclear. Dependency modelling therefore provides a potentially powerful tool for anticipating – and rectifying – policies that are likely to prove ineffective or generate damaging unintended consequences.

Defining goals carefully

Identifying an overarching goal is the first step in the process. Defining such a goal is as simple – or perhaps we should say as difficult – as stating precisely what one wishes to achieve. This wished-for outcome should be stated as clearly as possible, without jargon or artifice, and should describe an attainable, measurable objective.

Where there are limiting conditions, these should be included in the goal. For example, one’s goal might be to travel to Edinburgh, but only under acceptable conditions in terms of ticket price, arrival time and comfort. If this is the case then these conditions should always be factored into the goal.

Keeping it simple

In some cases policymakers attempt to design complex instruments that tackle numerous goals simultaneously. Rather than simply travelling to Edinburgh, to take our example above, these instruments attempt to achieve multiple goals: travel to Edinburgh, learn to make haggis, shear a sheep, ride a Shetland pony. While all of these things may be individually possible, they are not inherently connected in any way. One can shear sheep outside of Scotland, and enjoy Scotland without shearing sheep.

The more complex the goal, the less likely that a policy can achieve it.

By using Arium's approach to systematic policy analysis and dependency modelling, policymakers can think more clearly and carefully about what they wish to achieve.

The increased complexity of the entire enterprise is not only intellectually confusing but also increases the chance that the policy will either fail to meet its goals or produce unintended consequences. The more complex the goal, the less likely that a policy can achieve it.

Identifying dependencies

Even with a clear goal in mind, it can often be difficult to determine which of the myriad available policy mechanisms will best achieve it. Rather than arguing about the competing virtues of different ideas, a systematic policy analysis asks you to think about the conditions that must be met to achieve the goal.

These conditions are known as dependencies, because reaching your goal depends on achieving them. In defining dependencies⁵⁷ and the steps necessary to achieve them, one can build a chain of dependency that links a high-level goal to very specific steps or actions.

Limitations and benefits

Like any tool, dependency modelling has its limitations. Although it can help determine which outcomes are more likely than others, it cannot guarantee that any particular outcome will definitely occur.

It can, however, help politicians and stakeholders of all perspectives to illustrate their understanding of a policy problem, map how a proposed policy can achieve a given goal, expose the assumptions underpinning policy choices, and create a common framework for discussion and debate. Although it is not a silver bullet for all the difficulties of modern policymaking, it can help improve both the process and the end-product.

By asking participants to build a step-by-step picture of how a goal is to be achieved, Arium's dependency modelling approach can help uncover assumptions about how actions would contribute to a particular policy goal and highlight logical errors or inconsistencies. To achieve the goal of travelling to Edinburgh, you may assume that you're travelling by train while your colleague may assume you're flying. These assumptions will quickly become very clear when, in laying out the steps required to achieve your goal, you say, "Travel to Kings Cross" and he says, "Travel to Heathrow"!

The reward for rigour

Building this kind of rigorous description of how dependencies lead to a goal – and using Arium's modelling tool to do so – can help us to see, among other things:

- Where gaps might exist in the understanding of how a proposed policy will actually achieve the stated goal. In the NCLB case study above, for example, there was not a clear link between strengthening school test scores and actually educating students.
- Where assumptions might hide other factors necessary for achieving a goal. In our directors' pay case study, the success of the policy hinged on directors feeling shame about the amount they earned. Yet in practice no such shame, or not enough of it, apparently existed.
- How a policy might succeed at one level but have unacceptable consequences in a broader context. In our biofuels and A&E case studies, the policies achieved their nominal goals (an increase in ethanol production and a reduction in measured waiting times respectively). But both policies also undermined larger goals (ensuring a steady and affordable food supply, ensuring patient health).

By using Arium's approach to systematic policy analysis and dependency modelling, policymakers can think more clearly and carefully about what they wish to achieve. They can also be encouraged to think imaginatively and constructively about how their goals can best be reached. In the next chapter we outline how this approach has been piloted so far, in relation to UK drugs policy.

⁵⁷ For example, plant growth might depend on having conducive soil or minerals, sufficient water and sunlight. These factors are consequently termed 'dependencies' when considering how to achieve plant growth. As another example, having electricity in your house might depend on having not just a source of power, either from the mains or a back up generator, but also a means of distribution - adequate wiring.

3: Analysing UK drug policy

An established framework of goal and dependencies can potentially be used by specialists and non-specialists alike as a starting point for evaluating the potential of policies to achieve the goal identified.

One of the first applications of Arium's approach was an analysis of the UK's policy on illicit drugs, which was conducted in partnership with the UK Drug Policy Commission (UKDPC). The UKDPC is an independent body providing objective analysis of UK drug policy. It aims to improve political, media and public understanding of drug policy issues and the options for achieving a rational and effective (evidence-led) response to the problems caused by illegal drugs.

Working together, Arium and UKDPC explored the potential of risk modelling to provide insights into the UK's current policy towards illicit drugs and signal potential new approaches. In this chapter we examine the process undertaken by Arium and UKDPC and the lessons it offers about the value of systematic analysis in the policymaking process.

Modelling drug policy

Drug policy in the UK is an emotive issue that frequently evades objective discussion. A combination of political and public pressure means that enforcement agencies tend to focus their attention on a relatively narrow set of policy measures. Often, while these measures may seem to be the obvious strategy to pursue, experience and evidence indicate that they are ineffective with respect to what many professionals believe should be the primary focus of drugs policy – reducing the health, social and economic 'harms' of illegal drugs. Policies perceived to be insufficiently 'tough' are liable to attract trenchant media criticism, leaving enforcement agencies with few alternatives to traditional strategies.

In this environment UKDPC sought to develop a more structured approach to identifying the links between enforcement activities and drug-related harms. The risk modelling approach appeared well suited to this because of its potential to identify logical links between different enforcement activities and the harms associated with illicit drugs. It is also an approach that has the potential to explain the sometimes apparently contradictory impact of some interventions. Hence the decision to investigate risk modelling as one part of a wider project (see UKDPC (2009) Refocusing Drug-Related Law Enforcement to Address Harms London: UK Drug Policy Commission, available at: http://www.ukdpc.org.uk/publications.shtml#hre_report)

Arium and UKDPC created a partial model of drugs policy via a series of workshop sessions. A modeller worked with a team of staff from the commission to translate their knowledge and assumptions about the relationships between different aspects of the issue into a logical map (see Appendix 1, page 40). This work began at the top level of the model, identifying a goal and its critical dependencies. The team then mapped some of the harms associated with illegal drugs within the context of the goal. Ideally this element of the risk modelling process should be undertaken, as in this case, by specialists who are familiar with an entire area of policy and can invest time in the iterative process of building a complex model.

After this initial stage, however, an established framework of goal and dependencies can potentially be used by specialists and non-specialists alike as a starting point for evaluating the potential of policies to achieve the goal identified. In this particular case practitioners, law enforcement officers and other interested individuals could use the model developed by UKDPC and Arium from the bottom up, taking the goal and its dependencies as given and analysing how any proposed policies or interventions

By using a structure that incorporates the activities of all stakeholders, it is possible to unify their thinking around a common goal and illustrate how their efforts might combine to achieve it.

could mitigate particular harms. This stage was not completed in the pilot.

Exploring the goal

Defining a clear goal is the critical foundation of a successful policy. An achievable, clearly understood goal ensures that everyone involved with the process can be in confident agreement about the purpose of the policy.

The UKDPC’s desired outcome was to produce a tool for systematising the application of a harm-reduction perspective in the way enforcement agencies tackle drugs issues. The goal identified for the model was expressed with three qualifying conditions to define the separate but interlinked areas where progress needed to be achieved: ‘to reduce the impact on or within the UK of the **production, supply and consumption** of illegal drugs’ (see the ‘goal’ box in the upper left section of the Appendix 1 diagram and Figure 1).

Within such a broad model, enforcement can be considered primarily to focus on production and supply, with treatment and prevention activities primarily focused on consumption. By using a structure that incorporates the activities of all stakeholders, it is possible to unify their thinking around a common goal and illustrate how their efforts might combine to achieve it.

Defining dependencies

The goal represents the foundation of the model. The next step is to define what must be achieved in order to achieve the goal, the ‘dependencies’ that the goal depends on. At this stage it is critical that the dependencies describe all conditions necessary to fulfil the goal. If the dependencies are complete, one can be confident that all relevant conditions of the goal will be considered within the model.

In this case the dependencies mirror the goal’s conditions. Maximising the reduction of harms depends upon the negative impacts of production, supply and consumption all being individually reduced. These three elements therefore form the first level of dependencies - see Figure 1.

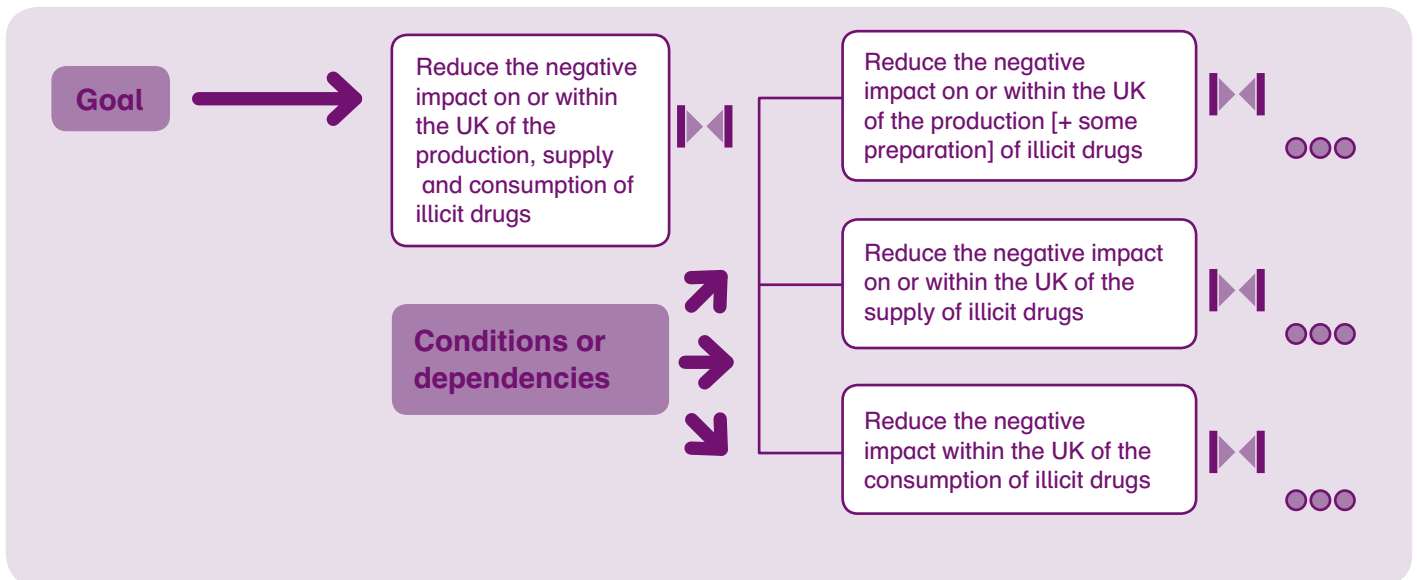
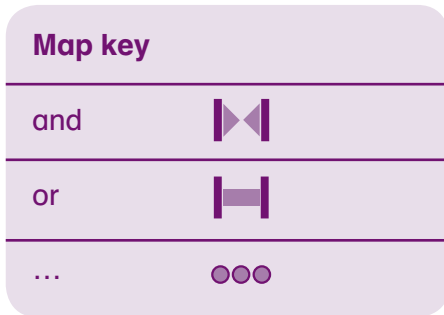


Figure 1: Defining dependencies and relating them to the overall policy goal.

Rather than build an entire model, the decision was taken to focus on the ways in which the sale (that is, the buying and selling of drugs as opposed to the using of drugs) led to harms

As the rest of the model is constructed, each dependency's own further dependencies are drawn. Those involved in developing the model were led to think through what is necessary to reduce the negative impact of the production of drugs, and the supply of drugs, and the consumption of drugs. As with the first layer of dependencies, the purpose is to describe the full universe of dependencies required to achieve the goal, ensuring that all elements of the problem are included in the model. By doing this, we can ensure to the best of our ability that we are approaching the problem with real 'systematic thoroughness' and thus improve our chances of avoiding unintended consequences.

The diagram in Appendix 1, 'Drug policy model structure', is a portion of the model produced by this process. It charts the thinking of those working on the model about possible approaches to reducing harm from the supply (that is, the sale) of drugs – to test the feasibility of the risk modelling approach.

Identifying harms

Rather than build an entire model, the decision was taken to focus on the 'supply' branch of the model, and more specifically the part of this branch that deals with sales to end users. This area was chosen because it was also the focus of the broader project that UKDPC was undertaking. The idea was to identify the ways in which the sale (that is, the buying and selling of drugs as opposed to the using of drugs) led to harms.

Two sets of factors around street-level retail drug markets were identified as leading to harms: the place and nature of drug markets and the costs and proceeds of drug markets. (These can be seen in the third column of dependencies in Appendix 1. As the project team built further dependencies in the fourth and fifth columns of dependencies, they found that these factors led to a number of harms which are enumerated in the sixth and final column.)

In Figure 2 each coloured box shows dependencies with which a harm has been associated. The kind of harm each dependency would mitigate, in terms of both who was harmed (the user, a non-user, the community, etc) and the type of harm inflicted (health, social, economic, etc) are noted under each box. Similar colours are used to indicate similar types of harms. For example, all three coloured boxes in Figure 2 relate to harms affecting health whether among users or non-users or the wider community.

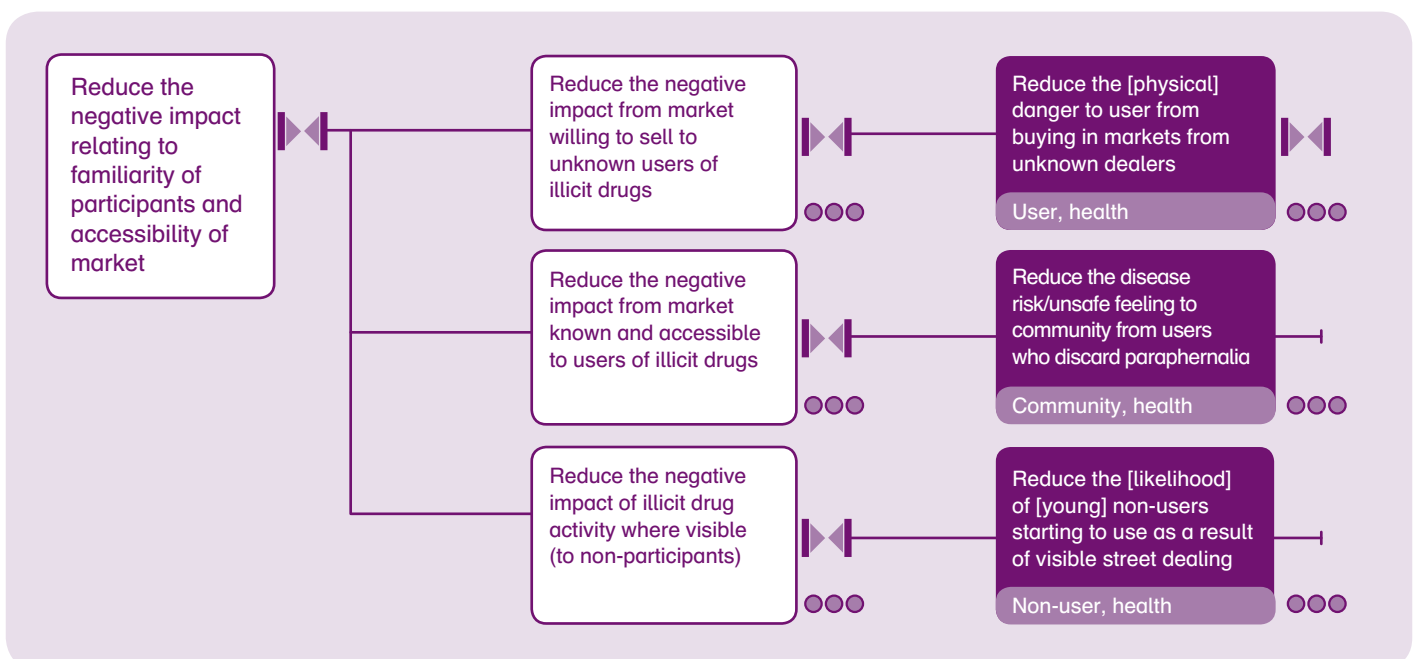


Figure 2: Some health risks which may relate to different aspects of the street level drug markets

Other important market features were explored in branches of the model that are hidden in Appendix 1 and in Figure 2. To signpost that these exist even when they are not shown, branches with hidden dependencies end in three small circles. The hidden market features included visibility (how aware non-participants are of the market), openness (how easy it is for different participants to enter the market) and cost (how much drugs cost in the market). The further analysis of these dependencies is shown in Figure 3.

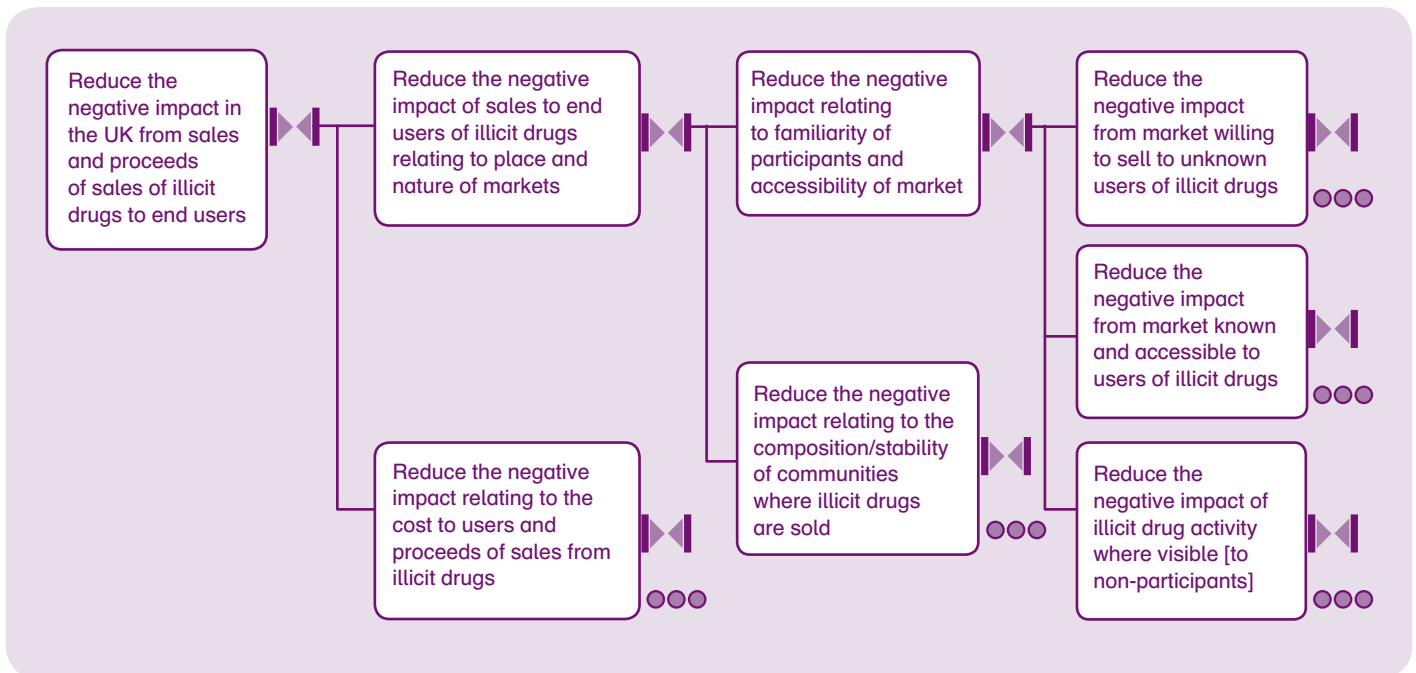


Figure 3: Mapping dependencies related to visibility, openness and cost

Taking the time to produce a theoretical model was extremely useful in helping the group clarify their thinking and question their pre-existing assumptions.

Creating a map allows those developing the model to build up an integrated picture of how individual harms relate to one another and to particular aspects of the drug problem. This then allows one to see how tackling a particular issue could contribute to achieving the stated goal. In this case the way that different harms arise from markets tends not to be articulated well, so taking the time to produce a theoretical model was extremely useful in helping the group clarify their thinking and question their pre-existing assumptions.

After creating a structure, proposed policies or interventions can be modelled in. This is done in two steps:

1. Identifying whether an intervention may be relevant and potentially effective in mitigating a particular harm related to a particular problem
2. Considering how likely the intervention is to work.

Modelling interventions

Arium started modelling interventions with the UKDPC, although this stage was not completed. We first sought to assess the connections between problems and stated harms. Is it likely, we asked, that visible street dealing would reduce property values in the immediate surrounding area? Dependency modelling required the group to think through not just the likelihood of the connection but also the 'how' of the connection; the project team had to articulate how drug dealing led to reduced property values. This process helped demonstrate that the connection between drug dealing and property values was both real and direct.

We then considered together possible interventions, such as cleaning up the area, which we thought might mitigate the economic harm arising from visible dealing. We hypothesised that if an area where illegal drug activity had been taking place were to be cleaned up so that non-participants could start using the area, the drug community might find it too exposed as a location for dealing drugs openly.

Articulating how this intervention is intended to work is critical, as not all interventions are likely to mitigate a problem with a particular harm. For example, cleaning up an area may help reduce the visibility of dealing but the economic damage to the community, one of the harms from open dealing, may not be reduced if people who have shunned the area are not made aware of any change.

Thinking through questions such as these is very valuable for those participating in the modelling process, as it requires them to address the ground-level realities about how proposed interventions will actually work. If we found that we could not conceive or articulate how a particular policy would work on paper, we thought it highly unlikely that it would work in practice. The whole process has the added benefit of creating a model for non-participants to refer to in future.

It is important to have a process of thinking that 'walks through' how any intervention would work in practice, unpacking the reasoning behind every hypothesis

Evaluating interventions

It is not enough to hypothesise that an intervention might contribute to achieving a desired effect. It is important to have a process of thinking that 'walks through' how any intervention would work in practice, unpacking the reasoning behind every hypothesis. Appendix 2 (see page 41) reflects the end-product of this kind of thought process, showing the section of our map that describes what must be achieved to reduce the damage to property values created by visible street dealing.

After the project team had thought through the key elements of the clean-up intervention, we analysed in greater detail what would be necessary for it to work. We came to the conclusion that it is not enough just to change the public perception that an area is dangerous or dirty. One also needs to consider why an area has become a focus for illegal drug activity and whether, once clean, it will be attractive to those not buying or selling drugs (see dependency column two in Appendix 2). Just cleaning up an area will not necessarily ensure that people want to go there if it lacks facilities such as playgrounds, refreshment outlets and seating areas. If the area is generally unattractive then that problem needs to be identified, analysed and tackled.

We also considered further how perceptions about the cleanliness and safety of a space may be changed – see Figure 4. While greater safety and security might be achieved through a number of alternative measures – police patrols, improved lighting and CCTV cameras, local authority clean-ups for example – the **perception** of cleanliness depends on many factors that must all be addressed. The space must be cleaned and then kept clean, and local residents must be made aware of the changes that have been made.

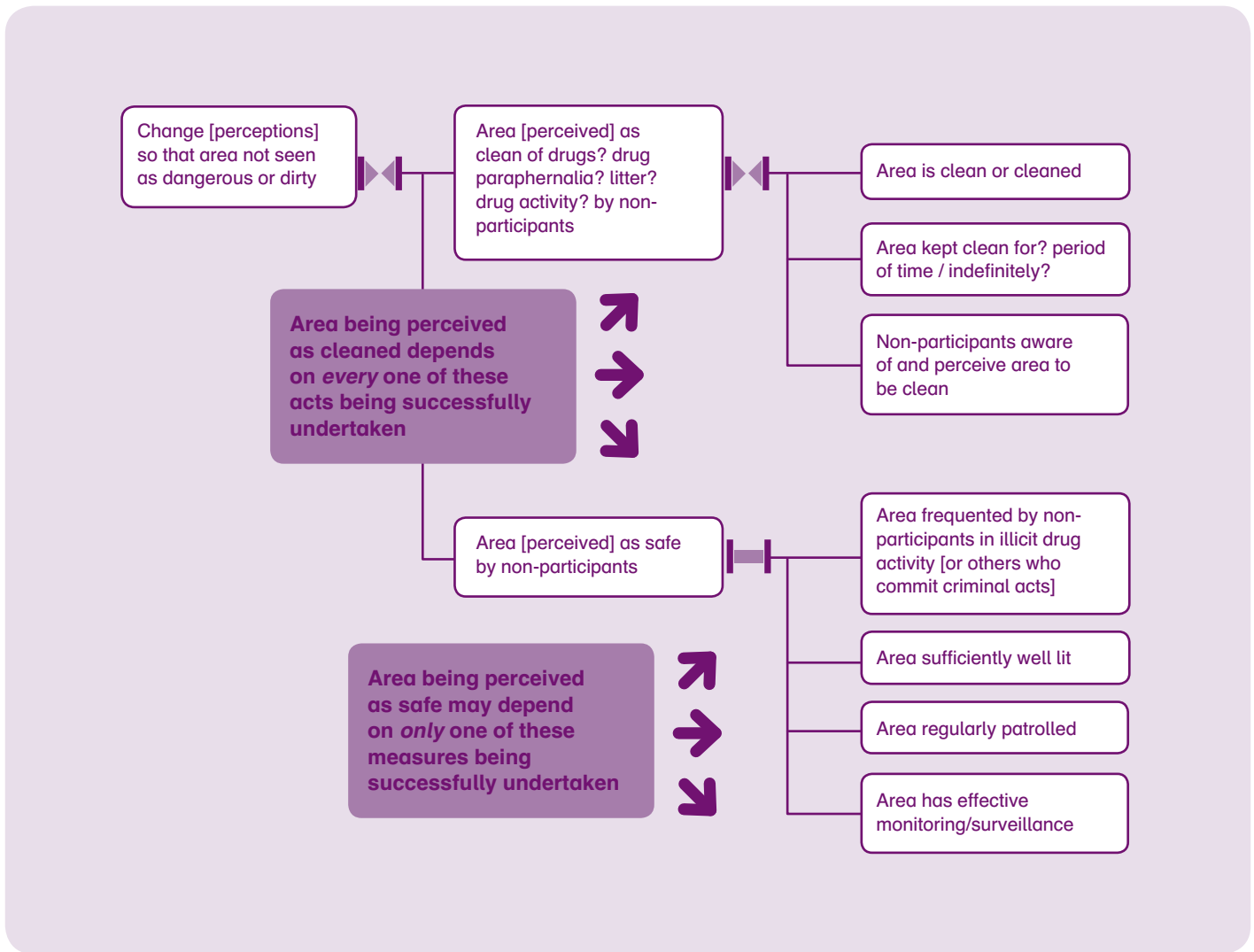


Figure 4: Comparing aspect of interventions relating to safety and to cleanliness of a space

If it does not work on paper, why should we think it would work in practice?

One can run scenarios based on a range of likely failure rates to see which interventions are particularly important, or where an intervention would be effective if we could think of one.

Goals that can be achieved equally well through a number of independent means (such as safety, in the above example) are more likely to succeed. This is because policymakers are able to select the approach from among a range of options that best suits their budgets, political conditions and particular circumstances. If a number of conditions must all be met to make an intervention successful, however, its potential for success diminishes, and we need to think about it more carefully. We might:

1. Seek to clarify each condition (for example, noting that a place needs not just to be made clean but kept clean, and considering the resource implications of this)
2. Consider whether each and every condition is realistically achievable (for example, if keeping a space clean is reliant indefinitely on external resources that may be limited, it may not be realistically achievable).

If an intervention involves multiple linked dependencies or includes a dependency that is not realistically achievable, the model is telling us that that intervention is less likely (or not likely) to succeed. And we have been able to understand this without populating the model with data; it is the structure of the model, if it is right, that is informative. Once we have this understanding, we can then consider whether it is a good idea to commit resources to that intervention. After all, if it does not work on paper, why should we think it would work in practice? Policymakers could use this kind of modelling to recognise and pursue the interventions most likely to succeed and to target resources.

Measuring the effectiveness of interventions

Our model can also estimate the relative probable effectiveness of each intervention or the relative costs of different harms. While the actual probabilities of each intervention succeeding may be unknown, using estimated or credible probabilities can demonstrate whether one intervention is more likely to succeed than another.

Probabilities are assigned, based on the best knowledge or guesses of those building the model, to the 'end' boxes that have no further dependencies. The probabilities are then calculated from these points 'up' the model (towards the goal), using logical rules.

The probabilities are then multiplied by the magnitude of the harm, which is assessed at every point where the harm is factored into the model, to arrive at the average 'cost' of that harm. The effectiveness of each intervention is calculated by measuring the difference in this average cost with and without the intervention. These figures are useful in that they are relative – one can tell whether a particular intervention is more or less likely to succeed than another based on the given circumstances. The probabilities of failure used may be best guesses or historical probabilities, but one can run scenarios based on a range of likely failure rates to see which interventions are particularly important, or where an intervention would be effective if we could think of one.

Conclusions

Robert Merton's seminal paper, 'The Unintended Consequences of Purposive Social Action', concluded with a call for other researchers to look more deeply into the root causes of unintended consequences. This report takes up Merton's challenge, and puts forward a practical tool that policymakers may wish to consider adding to their armoury.

As we have seen, there is no shortage of modern examples of damaging unintended consequences in public policymaking. Unwanted 'revenge effects' or 'side effects' may put the brakes on an important policy initiative or derail it completely. In the case of waiting time targets for accident-and-emergency units, for example, health practitioners were diverted from their core objectives to the detriment of patient care. In the case of mandating disclosure about levels of senior executive pay, the way in which the policy was applied has fuelled pay inflation instead of encouraging restraint.

In this time of large-scale budget deficits and widespread austerity measures, policymakers can ill afford to make costly mistakes that put public-service goals in jeopardy or drain resources from the public purse. Never has there been a greater need to anticipate and avoid unintended consequences, and to do so in a cost-effective way.

The systematic analysis and risk modelling approach developed by Arium and piloted with the UKDPC is not a silver bullet. Like the other policy development approaches this report has touched upon – evidence-based analysis and pilot projects, for example – it has its limitations. Models may be sophisticated and well constructed but they are still only models: simplifications of reality that cannot account for every single aspect of a problem. And no policy tool can securely predict the future, regardless of how many potential eventualities it can identify and analyse.

What risk modelling does offer, however, is a new way to look at issues that has the potential to help policymakers think through policy ideas and their implications in a much more systematic way. It is useful because it provides a decision support framework – a mechanism for evaluating problems thoroughly in order to identify the solution(s) most likely to succeed. It could also prove to be extremely cost effective: it is much better to root out unworkable solutions through paper-based analysis than to throw money at pilot projects whose core policy precepts may be fundamentally flawed.

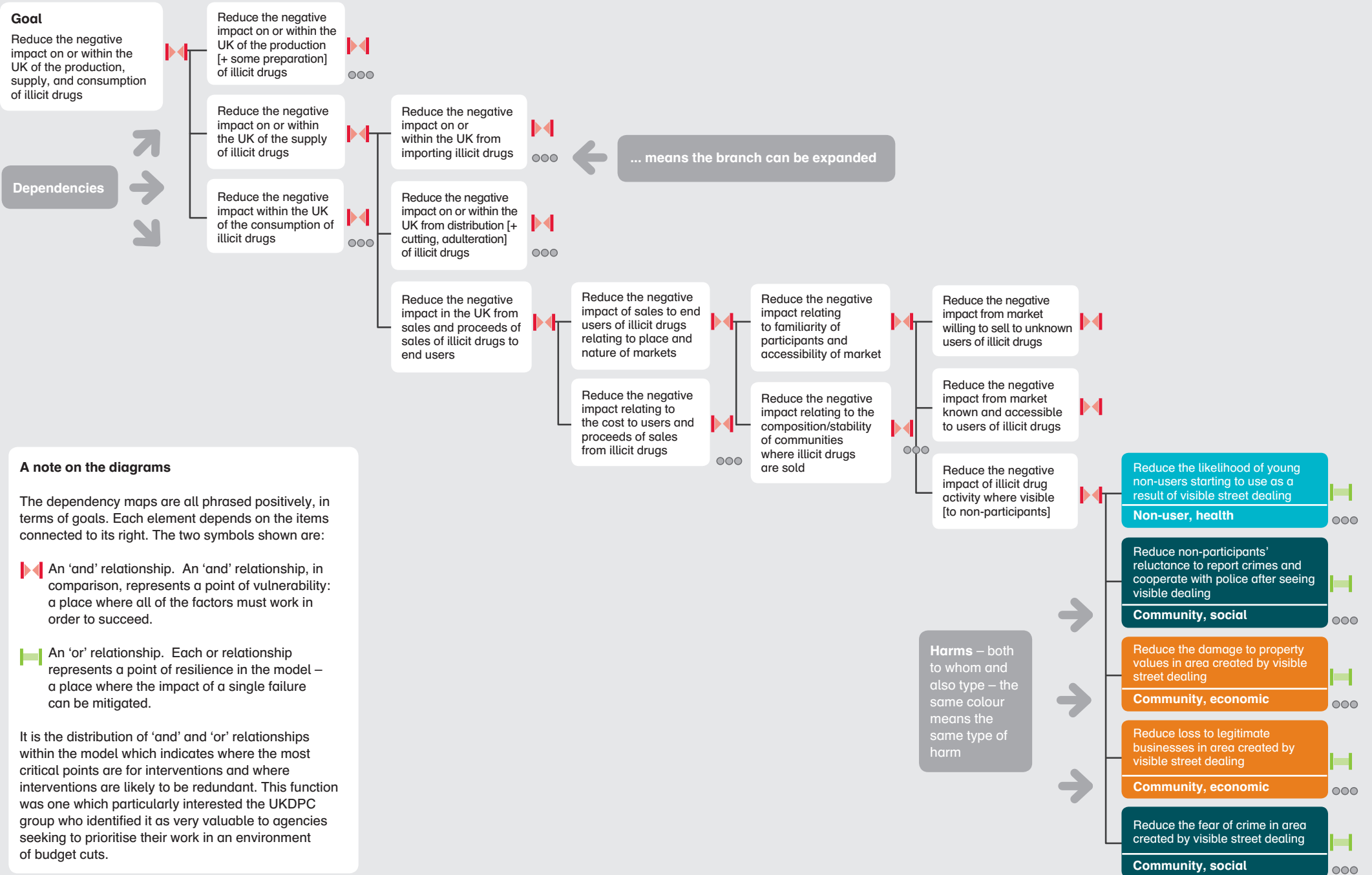
The experience of UKDPC in its work with Arium is that risk modelling has the potential to play a very useful role in anticipating and hence perhaps mitigating damaging unintended consequences. By carefully selecting a clear, achievable goal, and identifying systematically the conditions necessary to reach it, policymakers can potentially inject greater objectivity and thoroughness into the process of policy development.

Rigorous interrogation of all the contributory factors facilitates better decision-making – and better decision-making should make for better policy.

The next step is to develop and test this methodology further. The UKDPC has found Arium's work to date most helpful, and Arium itself is seeking funds and partners for further research into and piloting of the risk modelling approach. Risk modelling is an idea that Arium hopes will attract interest and support from governments, policy think-tanks and charitable foundations with an interest in promoting and delivering sound and cost-effective public policy.

Ultimately Arium hopes that the process we have developed can make a major contribution to public understanding of the underlying causes of unintended consequences and help policymakers avoid them in future. The principle at the heart of our approach is that in addressing complex policy issues, rigorous interrogation of all the contributory factors facilitates better decision-making – and better decision-making should make for better policy.

40 Diagram 1: Drug policy model structure



A note on the diagrams

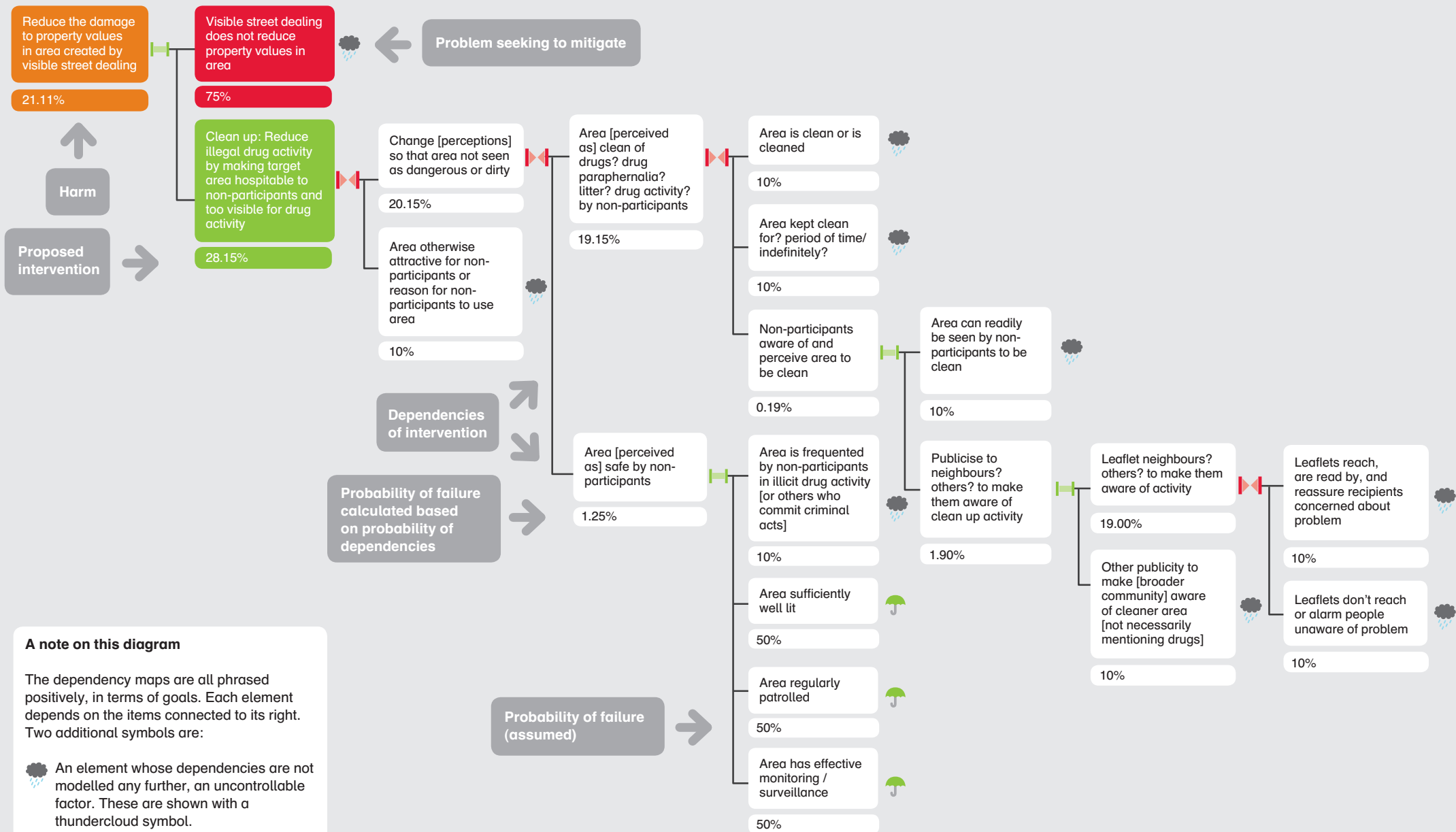
The dependency maps are all phrased positively, in terms of goals. Each element depends on the items connected to its right. The two symbols shown are:

Red double-headed arrow An 'and' relationship. An 'and' relationship, in comparison, represents a point of vulnerability: a place where all of the factors must work in order to succeed.

Green double-headed arrow An 'or' relationship. Each or relationship represents a point of resilience in the model – a place where the impact of a single failure can be mitigated.

It is the distribution of 'and' and 'or' relationships within the model which indicates where the most critical points are for interventions and where interventions are likely to be redundant. This function was one which particularly interested the UKDPC group who identified it as very valuable to agencies seeking to prioritise their work in an environment of budget cuts.

41 Diagram 2: Initial work on drug policy 'clean up' intervention



A note on this diagram

The dependency maps are all phrased positively, in terms of goals. Each element depends on the items connected to its right. Two additional symbols are:

An element whose dependencies are not modelled any further, an uncontrollable factor. These are shown with a thundercloud symbol.

Discretionary measures which may be introduced into an 'or' dependency to mitigate the effect of one or more uncontrollables.

The Best Laid Plans? Avoiding unintended consequences in public policymaking



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Arium is an independent company based in the City of London specialising in risk modelling and decision support. Underpinned by a problem-solving strategy that provides an innovative approach to risk modelling, Arium has successfully tackled problems that many analysts considered too complex or unpredictable to be usefully modelled. Arium uses a unique methodology based on dependency theory to develop the models.

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