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INTRODUCTION
Scotland’s health –
time for a change

In last year’s Annual Report, I indicated that, although life expectancy (LE) has continued to improve in Scotland, other western European countries have experienced faster increases in the health of their populations. Most of our closest European neighbours are reporting longer life expectancy at birth for both men and women than in Scotland. However, wealthier Scots continue to experience a faster growth in life expectancy than their neighbours in poorer areas and in the past year, these trends have continued. Since 1999, life expectancy in males living in the poorest 15% of areas in Scotland has increased by 1.4 years while life expectancy for males living in the rest of Scotland has increased by 2.1 years. The corresponding figures for females are 1.2 years for those living in the poorest areas and 1.6 years for the rest of Scotland.

The widening gap is even more apparent when considering healthy life expectancy - the length of time an individual might expect to live in good health. Since 1999, residents of the poorest 15% of areas have seen a gain in healthy life expectancy (HLE) of 2.1 years for men and 1.1 years for women while men and women in the rest of Scotland have seen increases in HLE of 2.9 and 2.3 years respectively. The pattern of slow improvements in health status in poor areas of Scotland with the wealthier improving faster, mirrors Scotland’s international position. Countries in Western Europe with higher life expectancies than ours are often improving at a faster rate. Unless Scotland accelerates gains in life expectancy, particularly amongst the poorest communities, it will continue to fall behind other countries. Many of the policies and projects currently underway have been designed to produce a change in approach and to accelerate improvements. However, we need to do more. At a time of economic uncertainty, threats to the health of disadvantaged individuals increase and, if Scotland is to continue to progress and to do so at accelerated pace, new approaches to health creation need to be considered.

DR Harry Burns
The Chief Medical Officer for Scotland
CHAPTER 1
Trends in life expectancy and the continuing widening of health inequalities

Figure 1 updates the trends identified in last year’s report. There is a continued slight narrowing in the gap between men and women in terms of life expectancy but, overall the trend is disappointingly stable.

Figure 2 is a statistical projection of the rate of growth in LE in Scotland for the next 2 decades. It is likely that this average rate of growth will continue to mask a widening difference in wellbeing with residents of the more affluent areas pulling away inexorably from their poorer neighbours. At present, Scotland has the lowest life expectancy of all Western European countries. We sit between the countries of West and East Europe (Figure 3). There is, however, evidence that some areas of Eastern Europe are achieving the kind of step change in health that seems likely to allow them to overtake Scotland in the coming years.
There have been numerous initiatives over the past decades which have had positive effects on health in Scotland and there have been significant reductions in mortality from many of the most significant causes of death. The Scottish Public Health Observatory monitors these trends. In a report comparing Scotland with other countries in Europe, the Scottish Public Health Observatory concluded that, over the last 50 years, mortality from all causes has fallen in Scotland in line with trends across the rest of Western Europe (ScotPHO 2009). However, while mortality rates for Scottish children are close to the Western European average, mortality among working age Scots, both men and women, is the highest in Western Europe and has been since the late 1970s (Leon et al 2003).

Scotland’s poor health is at its most obvious amongst working age men and women. Trends in mortality amongst working age adults (15-74 years) varied considerably when different causes of death were considered. For example, Scotland now has the highest rates of oesophageal cancer in Western Europe for both men and women. However, while, lung cancer mortality rates for men and women remain among the highest in Western Europe, the male rate has reduced considerably since the mid 1970s and is gradually moving closer to the average for Western Europe. This encouraging trend is, in large part, a reflection of the success of Scotland’s efforts to reduce smoking rates. Rates of colorectal cancer mortality (for men and women) and breast cancer mortality, although still relatively high, have been falling and appear to be converging towards the Western European mean. Rates of stomach cancer and pancreatic cancer mortality are close to Western European average.

Figure 3: life expectancy at birth, 2007, selected countries, males

Source Eurostat and the Office for National Statistics (ONS)
There have been significant reductions in mortality from ischemic heart disease and cerebrovascular disease for both men and women over the last half-century. Despite this, mortality rates in Scotland from both causes remain among the highest in Western Europe. However, there are signs that the gap between Scottish mortality rates and the Western European average is narrowing. Again, these encouraging trends reflect, in part, the success of smoking cessation programmes as well as significant improvements in treatment offered by the NHS. Mortality rates from chronic obstructive pulmonary diseases such as chronic bronchitis are among the highest in Western Europe, although mortality for males has fallen considerably since the 1960s.

Most worryingly, Scottish mortality rates from chronic liver diseases such as those caused by excess alcohol consumption have risen steeply since the early 1990s among men and women. Rates of mortality from liver disease for Scottish men and women are now the highest (or close to the highest) in Western Europe. The need for action to reduce alcohol consumption is pressing. Suicide mortality among adult men in Scotland has risen since 1975 and the male mortality rate for suicide is now twice the level it was in 1955. One encouraging observation is the fact that, mortality from road accidents in Scotland has declined since the mid-1970s and Scottish death rates are now lower than in the majority of Western European countries. (Scottish mortality in a European context 1950–2000 An analysis of comparative mortality trends. http://www.scotpho.org.uk)

There are, therefore, encouraging trends in the reducing incidence of premature deaths from a number of causes. Many of the conditions that are falling in incidence have been the subject of considerable effort on behalf of successive governments and the public health community within the NHS and local government over many years. This observation suggests that organised efforts to improve health in Scotland have had a significant impact. However, there is evidence that other regions of Europe have made a more rapid change – a step change – in health status. The rate of improvement in these regions, which seem to be similar in their socio-economic conditions to deprived areas of Scotland, has increased dramatically. Unless Scotland learns from these regions, it seems likely that we will miss an opportunity to make our own step change in health.
Step changes in health status

Figure 4 is a comparison of trends in life expectancy in 20 regions in the UK and mainland Europe which have suffered similar levels of deindustrialisation in the latter half of the 20th century. Walsh and his colleagues from the Glasgow Centre for Population Health have shown that in some regions of Europe life expectancy is improving rapidly in some regions (Walsh et al. 2008). As Figure 4 shows, life expectancy has been improving much faster in the Polish region of Katowice than in Scotland. The 4 year gap between Katowice’s and the West of Scotland’s male life expectancy that was seen in the mid-1980s had been halved by 2003/05. If current trends continue, male life expectancy in Katowice will overtake that of the West of Scotland in the near future. Indeed, among females this has already happened: Figure 5 shows that life expectancy among female residents of Katowice is now greater than those living in the West of Scotland, whereas in the 1980s it was two years lower. Similar accelerations in health status have been observed in other Eastern European regions following the emergence of democracy in these countries. There appears to be a resilience in these populations which has allowed them to benefit in health terms from changed socio-political circumstances.
Achieving a step change

Albert Einstein is said to have defined insanity as “Doing the same thing over and over again and expecting different results”. Herculean efforts to improve health and expenditure of significant resources has, over the past decades produced steady improvements in health which has been undermined by our failure to accelerate the health status of those at the lower end of the socio-economic spectrum. If we are to produce such an acceleration, perhaps we need to consider the methods we have been using to improve health. Perhaps it is time for a change.

In last year’s report, I discussed the concept of salutogenesis, the art and science of creating health. I argued that, by concentrating too strongly on the treatment of disease, we might be missing an opportunity to build health more effectively. There has been a growing international interest in the past year in salutogenesis and its potential implications for health improvement. A number of regions in Europe are now exploring the possible policies which might support effective creation of health and reorientate thinking away from a focus on disease prevention. The scientific basis for this approach is robust and Scotland may well benefit from a closer look at the concept.

What is salutogenesis?

Basically, salutogenesis is a term first used by the American sociologist Aaron Antonovsky (1979). After a lifetime of study in many different cultures, he suggested that individuals, throughout life, develop a set of resources which allow them to make sense of the stresses they encounter in daily life so that, as he put it himself, “The stimuli bombarding one from the inner and outer environments were perceived as information rather than as noise”. He termed the ability to make sense of and understand the external world as a “sense of coherence”. He defined it as the quality which:

“... expresses the extent to which one has a feeling of confidence that the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable, that one has the internal resources to meet the demands posed by these stimuli and, finally, that these demands are seen as challenges, worthy of investment and engagement.”

In essence, a person with a well developed SOC when confronted by everyday stresses will:

• be motivated to cope (find life meaningful);
• believe that he has the capacity to understand the challenges of everyday life (find life comprehensible);
• believe that resources to cope are available (find life manageable).

Failure to manage a difficult environment effectively, Antonovsky argues, will cause the individual to be chronically stressed and, over a long period, impair his or her physical and mental health.

Scientific evidence for chronically raised stress associated with deprived socio-economic circumstances is now robust. Antonovsky’s concept of creating health through supporting individuals to understand their social environment and to take control of it seems an important mechanism for reducing stress. It may be that an important element of attempts to improve Scotland’s health should involve developing methods to increase resilience in our young people and supporting adults who lack the incentives to engage with...
their social environment to do so. Perhaps the time has come to debate whether our approach to health improvement might produce the necessary step change in health creation which Scotland needs to accelerate gains in healthy life expectancy.

What would a salutogenic approach to health look like?

Morgan and Ziglio (2007) have pointed out that approaches to the promotion of population health have been based on a deficit model. That is, they tend to focus on identifying the problems and needs of populations. The organisational response to these problems is to provide professional resources and interventions which produce high levels of dependence on hospital and welfare services. We do things to people rather than doing things with them. We reinforce their dependency and encourage passivity in the face of problems.

These deficit models are important and necessary to identify levels of needs and priorities. But they need to be complemented by some other approaches as they have many adverse consequences. Deficit models tend to define communities and individuals in negative terms, disregarding what is positive. Deficit approaches miss opportunities to allow individuals and communities to react positively to the problems they encounter. Instead of taking control, they are encouraged to remain passive as others try to do things for them.

In contrast, asset models tend to accentuate positive capability within individuals and support them to identify problems and activate their own solutions to problems which they themselves identify. They focus on promoting health generating resources that promote the self esteem and coping abilities of individuals and communities, eventually leading to less dependency on professional services. In effect, by concentrating on the strengths of individuals and communities, their sense of control over their lives is enhanced and they experience less of the chronic stress which leads to a range of health consequences.

Much of the evidence available to policy makers to inform decisions about the most effective approaches to promoting health and to tackling health inequities is based on a deficit model and this has, inevitably, produced policies and practices which disempower the populations and communities which are supposed to benefit from them. An assets approach to health and development embraces a positive notion of health creation and in doing so encourages the full participation of local communities in the health development process.
Morgan, Davies and Ziglio (2010) have developed this argument into one which may offer a more resourceful approach to tackling health inequities. They suggest that by developing the stock of key assets necessary for promoting health within individuals it should be possible to restore the balance between the assets and deficit models for improving health of individuals and communities. By developing assets which support health in individuals rather than by doing things to them, thereby undermining a sense of control and self esteem, it becomes more likely that a positive attitude to health and wellbeing would be created. Failing to develop the assets which allow individuals to be resilient in the face of the various circumstances which damage their health may well be the factor which has limited the effectiveness of many well intentioned health improvement programmes in Scotland during the past decades.

The late Jimmy Reid described the problem with great perception and eloquence in the speech he gave when installed as Rector of Glasgow University in 1971:

“Alienation is the precise and correctly applied word for describing the major social problem in Britain today. People feel alienated by society. In some intellectual circles it is treated almost as a new phenomenon. It has, however, been with us for years. What I believe is true is that today it is more widespread, more pervasive than ever before. Let me right at the outset define what I mean by alienation. It is the cry of men who feel themselves the victims of blind economic forces beyond their control. It’s the frustration of ordinary people excluded from the processes of decision making; the feeling of despair and hopelessness that pervades people who feel with justification that they have no real say in shaping or determining their own destinies.

Many may not have rationalised it, may not even understand, may not be able to articulate it. But they feel it. It therefore conditions and colours their social attitudes. Alienation expresses itself in different ways by different people. It is to be found in what our courts often describe as the criminal anti-social behaviour of a section of the community. It is expressed by those young people who want to opt out of society, by drop outs, the so-called maladjusted, those who seek to escape permanently from the reality of society through intoxicants and narcotics. Of course it would be wrong to say it was the sole reason for these things. But it is a much greater factor in all of them than is generally recognised.”

Inadvertently, in seeking to improve the lot of the most disadvantaged members of our society, we may have made them more, rather than less alienated by doing things to them rather than with them.
Asset based health improvement in action

There are many examples of interventions which have been successful in improving wellbeing but which have, usually inadvertently, done so through developing assets rather than filling perceived deficits. One well known example comes from South West England.

Beacon and Old Hill

When one thinks of Cornwall, one usually has a mental image of beautiful countryside, thatched cottages and afternoon teas. Yet, in the mid 1990s, Cornwall housed one of the most deprived council estates in Britain. Penwerris, the electoral ward comprising the Beacon and Old Hill estates which had a population of 6000, had, according to a University of Bristol report, the largest percentage in Cornwall of children in households with no wage earners, the second highest number of children living with lone parents. Unemployment rates on the estates were 30% above the national average, child protection registrations were high, postnatal depression afflicted a significant number of mothers, domestic violence was common and violent crime, drug dealing and intimidation were commonplace.

By 1985, quality of life in the area was plummeting. “It had the reputation of being a ‘no go area’ for the police; crime and vandalism were spiralling out of control, and the community had become more or less completely dissociated from the statutory agencies.” (Durie et al)

Two local health visitors, Hazel Stuteley and Philip Trenoweth are credited with beginning the regeneration of the area after a particularly disturbing series of events. In the Health Visitors' own words:

“The flashpoint came simultaneously for us both, literally in Rebecca’s case, when she witnessed the family car ignite following the planting of an incendiary device. She was 11 years old then and although physically unhurt, she was deeply traumatised by this. Already in mourning for her friends’ pet rabbit and tortoise, which had recently been butchered by thugs from the estate, this was the final straw.

As family Health Visitor for the past 5 years, I was a regular visitor to her home. Her Mum was a frequent victim of domestic violence and severely post-natally depressed. My caseload had many similar families with...
multiple health and social problems. Seeing Rebecca and her family’s deep distress, I vowed then and there that change must happen if this community was to survive. I had been watching it spiral out of control for long enough.”

Thereafter, the two health visitors embarked on a series of meetings in which they tried to engage statutory agencies with members of the community. Of note was the fact that many individuals they thought would want to be involved in turning the area around refused to become involved and many of the public meetings held to encourage dialogue were described as ‘stormy’. What is apparent from the descriptions of the process is that the people were listened to. the residents identified the problems they were most concerned about and statutory agencies engaged with the community in designing a response. Residents became co producers of solutions rather than passive recipients of actions others had determined would be good for them.

This was, in my view, a critical part of the process. People learned that expressing their concerns was not a waste of time. They learned their opinions had value and that they mattered to others. Social networks developed and problems became shared. Importantly, solutions emerged from these interactions between people who had previously been alienated from each other.

“The most significant aspect of the regeneration process on the Beacon and Old Hill estate was that, from the outset, there was no initial funding, no hierarchy, no targets, no business plan, only a shared vision of what the community wanted to be, rather than an obsession with what it had to do. Thus, the regeneration process was not a result of a predetermined plan. Rather, the process emerged as a consequence of the interactions between the members of the community, and between the community and its environment, namely the statutory agencies, the police, the council, and so forth. As the community evolved, so also the agencies and professional bodies co-evolved with the community.” (Dorie et al)

The story of Beacon and Old Hill is one of a few individuals being motivated by the failure of conventional approaches to a problem to try something different. In listening rather than lecturing, they heard the members of the community outline solutions to their difficulties. Finally, they were confident enough to allow solutions to emerge organically rather than through a conventional project planning approach which relies on the outcome being predetermined. In effect, leadership in this case did not involve taking a community in a predetermined direction, but rather
involved helping individuals discover their own direction by awakening within themselves the capacity to take control of their lives. They had used an asset model rather than focussing on the deficiencies in the lives of the community.

The asset model is not new. In 1986, the World Health Organization held the First International Conference on Health Promotion in Ottawa. The conference culminated in the presentation of a Charter which identified action necessary to achieve health for all by the year 2000. Among the elements of the Charter, it includes the following statements:

"Health promotion is the process of enabling people to increase control over, and to improve their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.

Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love. Health is created by caring for oneself and others, by being able to take decisions and have control over one’s life circumstances, and by ensuring that the society one lives in creates conditions that allow the attainment of health by all its members. Caring, holism and ecology are essential issues in developing strategies for health promotion. Therefore, those involved should take as a guiding principle that, in each phase of planning, implementation and evaluation of health promotion activities, women and men should become equal partners.

The founding principles of health promotion have included the ideas of enhancing control over life circumstances and ensuring that citizens are equal partners in creating better lives from themselves. These principles are in use in many programmes across Scotland. But, often, they are most evident in small projects and it is not explicitly recognised that the project is developing assets in the community rather than trying to fill deficits. Among the many programmes and activities which seem to focus on developing assets is the work carried out in Scotland’s Healthy Living Centres.

Healthy Living Centres

Healthy Living Centres (HLCs) aim to be at the heart of their communities. Around 200 development staff and over 1200 volunteers in 26 HLCs engage with over 130,000 local people every year. Around 250 local people are actively engaged in the management and operation of HLCs through their voluntary participation as Board members. For every £1 of Government and local authority support,
HLCs have estimated that they bring a further £3 into their communities. HLCs try to make a difference because they take time, build trust and network, inspire ambition, give hope and help individuals to feel good about themselves, their families, neighbours and communities and do well as a result. Being positive and optimistic, sometimes in the face of major difficulties and challenges is how HLCs work with their communities. Being responsive, flexible, innovative and on occasion radical is how HLCs support individuals and communities to build resilience and confidence in themselves and in the future. This is particularly evident in the ways in which communities use their resources to invest in the health and wellbeing of their youngest members and their families.

These examples from HLCs reflect the variety of ways in which they work:

**Camglen Community Radio Nursery Shows** involve 3 and 4 year olds in producing radio shows which are broadcast live on local radio organised by the HLC. This activity demonstrates the willingness of local organisations and families to be involved in community activity. The ability and enthusiasm of very young children to learn skills which are normally associated with adults is obvious. Moreover, it is local adult volunteers who are involved in Camglen Radio who pass on and teach those skills. Also demonstrated in this example are the benefits of having the appropriate and community-managed resource of a well-equipped radio studio, which encourages so many sections of the community to engage with the project. This activity is in its third year.

**A One-Stop Shop for Parents** is organised weekly in community venues. It builds on the connections between various local agencies who 'set out their stall' in an informal setting which encourages parents to generate their own ideas and sparks interest in other aspects of healthier living.

**The Chill Out Zone and Young People’s Forum** is organised and managed in ways that redress the feeling that many young people have that choices are made for them. Some young people feel they have little control over their situation. The Forum puts young people in the driving seat. The discussions they have and the decisions they make shape and influence the services
they are actually using. No difficult subjects are swept under the carpet. It makes sense that they take it seriously.

**The Grassroots Programme** engages and empowers local people to lead and develop an infant and maternal health programme. Forty-six local volunteers deliver and develop the programme. The volunteers’ training gives both the local people on the programme and the volunteers the confidence and skills to take control over the decisions they make. The improved social networks mean that both volunteers and young mums are much more involved in their own communities.

**Parent Councils** in nurseries are an important community asset which has been engaged by an HLC through identifying parents on each Parent Council who have volunteered to be a ‘health link’ to the HLC. The two way flow of information and mutual support in this new network and the confidence it has given the parents to suggest new health improvement activities and seek support for them is making a significant contribution to the wellbeing of the children and their families.

**Mind Yer Heid** is an anti-stigma activity which engages the community in dialogue about mental health. Over 3 months, more than 400 people were engaged in creating canvas art that expressed their thoughts and feelings about mental health. The HLC worked with existing groups in nurseries as well as other age groups and sections of the community, and set up stalls in public areas to engage with families and general population. The resulting art work is exhibited as part of Scotland’s Mental Health Arts and Film Festival. Many participants enjoyed the opportunity to express their thoughts and feelings, and for others it took courage to do so. Families with young children were able to explore a sometimes difficult issue in a safe environment using a fun medium. Canvases by young children were exhibited and valued alongside those painted by others, including adult artists. It demonstrates the ability of the youngest members of our community to participate, share and shape the knowledge and attitudes of the community as a whole.

**Healthy Mums Programme** works with women from 12 weeks of pregnancy through 2 years post-birth. The core activity is the provision of free fruit and vegetables. Additionally, mums can access a range of skills-based courses including Baby Massage and Baby Yoga, and a relevant knowledge-base around stress management, healthy eating, coping on a budget and so on. This programme is a success largely due to the local volunteer-run Fruit Barra which has been established by the HLC in the community at various venues over nearly 16 years. The volunteers are all members of the local community and have local knowledge and personal experience which is shared with the pregnant women in an informal manner while they are collecting their fruit and vegetables. This complements and supplements the clinical service provided by the NHS, and helps mums who may feel isolated to recognise and access the range of networks and support available around them.

These projects build community networks and enhance trust within communities. They try to help people enhance their skills for managing their lives and their work is shaped by dialogue with those involved in their activities.

Another project which seeks to develop assets in those involved in it is a small, independent theatre company based in...
Glasgow. Theatre NEMO works to promote good mental health and wellbeing through the creative arts by engaging and supporting vulnerable individuals within the community, psychiatric hospitals and prison. Clients in the main are those from areas of high deprivation, where instances of mental ill health are more prevalent, and who have difficulty accessing mainline services. The founder of Theatre NEMO describes the work of the group in these terms:

“Our aim is to break down stigma and isolation and to provide opportunities to explore individuals’ potential to achieve a better life:

We believe that Theatre Nemo is unique in Scotland in the inclusive nature of its work with vulnerable people. Other groups work in the mental health field but rarely offer the diverse activities that really engage hard to reach people. One of our strengths is that we really motivate people and have great attendance records. Very seldom does anyone drop out of a project.

These projects help people who have lost skills through life events to re-connect with their community, increase confidence. They encourage people to believe in themselves, develop new skills, developing a ‘want to learn’ attitude which will improve motivation to take up other social or education opportunities. They encourage interaction within the community and support recovery. Being involved and taking part in our performances and talks which we take out to the community and to policy makers has helped give people a better understanding of social and mental health issues. We break down some of the taboos, barriers and fears which surround people in difficult situations.”

One of the most economically deprived communities in the UK also has one of the lowest life expectancies. Yet, through effective community engagement, people in Bridgeton have developed great insight into the processes likely to enhance their health and wellbeing. They provided the following thoughts on health improvement for this report:

“Typically, consultation with our community has always been carried out by men wearing suits and carrying clipboards. Our negative perceptions of the process were severely challenged when we met the North East Neighbourhoods Planning Team from Glasgow City Council. They came to us with innovative ideas about meaningful consultation instead of the tokenistic process we had come to expect.

We were surprised when they invited us to lead on consultation for the East End Local Development Strategy (EELDS). They asked us to assist in designing the process of community engagement and associated events. We became facilitators in the process, active members, making decisions. For us this was utterly empowering. Throughout the experience we were introduced to new ideas about health and planning. Not only did this experience encourage us to explore the effects of the living environment on our own individual lives, but we began to consider the wider effects on the community as a whole. With growing knowledge and understanding we began to ask questions, challenge opinions and prejudices and we considered how we could influence regeneration in ways that would lead to positive change for our communities.

If we had been asked, just a year before, what the social determinants of health were, we would have assumed the questioner was from another planet! However, during 2008, after the EELDS was published we were invited by the National Social Marketing Centre in London to make a film of our involvement in planning for health as an example of best practice for the rest of the UK!
At the conclusion of the EELDS, we became more involved in regeneration through volunteering, study and even employment. Several of us gained degrees in Community Development. This was a journey some of us were making anyway. However, our involvement in EELDS gave us a new perspective, better vision and growing knowledge which held us on this pathway and opened it up to others.

We are now actively involved with the Clyde Gateway Urban Regeneration Company and have had the opportunity to see our work influence new projects and ideas. As our confidence and abilities have grown, so, too, have our relationships with the very professionals we previously eyed with suspicion. We are now involved in the Equally Well project to help develop a community version of Healthy Sustainable Neighbourhoods Model and we are developing new ideas for involving people in other projects.

Our communities are our homes, lives and everything we are. If we concentrate on the problems, we'll create them. If we visualise and focus on how our environment can be, then we create a healthier mindset which in turn improves our wellbeing. We believe in that. Now we need to help others believe it too. We are not apathetic people, to blame for our environment. We are community assets, able to contribute to the improvement of ourselves and our areas. If we are to be labelled, let's label ourselves with positive words such as contributors, assets, useful worthwhile, giving, involved, able and, of course, HEALTHY!!!

We are no different from those in more affluent areas, we just swim in a rougher part of the river.”

Achieving a step change in health

I have argued that we need to develop an approach to health improvement which does more to unlock the assets within individuals which create a sense of control and wellbeing. Experience shows that creating momentum behind such a movement takes time. To achieve a real change in health status, it will probably be necessary to combine a salutogenic approach with a targeted programme of interventions provided by statutory agencies. These interventions would be aimed at ensuring that people who want to improve their health have the necessary opportunity to do so.

Figure 6 compares infant mortality in Scotland with infant mortality in Scandinavian countries. Although Scotland has, by a narrow margin, the lowest infant mortality amongst the UK countries, it still has a higher mortality than any of its Scandinavian neighbours.
The significantly lower mortality in some of the Nordic countries has been achieved by a series of actions which have caused a rapid decline in the rate of deaths in the first year of life.

A rapid reduction in infant mortality might be achieved by a number of interventions. Early access to antenatal care, stopping smoking or consuming alcohol during pregnancy, breastfeeding after birth and support for mothers who struggle to look after their children will all contribute to lower infant mortality. Consistent application of evidence-based interventions for every child in every family would have a significant impact on infant mortality.

Another example of a step change is the decline in smoking in the North East region of England. Between 2004 and 2008, smoking rates in Scotland fell by 1% and in England by 4%. In NE England, it fell by 8%, overtaking the Scottish incidence. (Figure 7)

This fall in smoking rate has been achieved by a consistent and comprehensive application of appropriate interventions. Basically, North East Regions has achieved these results because it has tried harder to do the right thing.
Most people in Scotland who wish to work, whether in a paid or unpaid capacity, are able to do so. This contributes significantly to maintaining and improving health in all our communities. Good employment is protective of health, whereas unemployment contributes to poorer long-term health outcomes.

Good work, and indeed any meaningful activity (this could be, for example, volunteering or unpaid caring responsibilities), engenders a sense of coherence in life, meeting important psycho social needs in a society where employment is the norm, helping to define an individual’s identity, social role and social status. However, jobs that are insecure, low-paid and that fail to protect employers from stress and danger make people ill (Marmot 2010).

Fortunately, even in the current economic climate, the majority of people of working age in Scotland are in paid employment and are able to undertake their work in a safe and healthy environment. Consequently, most of these people will gain a benefit to their long term health outcomes from this work.

However, we recognise that it is important to ensure that those in work are protected from harm in the workplace and are encouraged and supported to improve their health and wellbeing. It has been estimated that ill health in the working age population of Great Britain costs the economy around £100 billion every year (Black 2007). This means that there are important roles for employers, employees, health and safety enforcement agencies, trades unions, and healthcare and employment service providers.
Role for employers

As noted above, by providing work, employers across all sectors make a valuable contribution to improving and promoting health and wellbeing. Employers have statutory duties in respect of workplace health and safety, and, overall, we have a good record in Scotland in minimising work-related fatalities and serious injuries. It is important that we continue to maintain systems in Scotland that support employers to keep their workforces safe and healthy, and that can identify and work with those industries where there is highest risk to workers’ safety.

Flexible working that allows employees to fit their work around family care requirements is highly valued by workers. Job design and control over how a job is done, and fair and transparent appraisal and reward structures are also important. Effective and well managed organisations recognise the importance of good management and leadership practices that encourage and promote good health and wellbeing amongst the workforce (Vaughan-Jones and Barham 2010). A wealth of advice and information is available to employers and employees in Scotland from the Scottish Centre for Healthy Working Lives (www.healthyworkinglives.co.uk).

It is widely acknowledged that employers can be proactive in promoting the health and wellbeing of their workforce. In Scotland we have many examples of good practice where employers recognise the benefit that they can get from supporting good workplace health and wellbeing and in encouraging healthier lifestyles. Many larger organisations offer on-site gyms or subsidised gym membership, healthy choices in canteens, health checks or smoking cessation advice, for example. Other measures can include safe cycle storage, showers and lockers to encourage running or cycling.

Employers who create a positive work environment and culture, and undertake activities that promote employee health do so, not for altruistic reasons, but because they recognise the benefits that it brings for the organisation. Workers who have better health and wellbeing are more motivated and productive, they take fewer days off sick and are more likely to remain with the organisation (PWC 2007). All of this adds to the bottom line for the employer. The employee’s health benefits as well, contributing to longer term employment prospects. In effect a win-win outcome.

However, it is important to recognise that many smaller organisations do not have the resources to offer the type of support described above and that there are other less direct workplace practices that can equally contribute to wellbeing.
The Scottish Public Sector

Around a quarter of the working population of Scotland work in the public sector. As well as the importance this has for the economy, it presents an enormous opportunity for the public sector to take the lead in promoting health and wellbeing to its workforce and beyond to their families and communities.

Many public sector organisations have already demonstrated a commitment to workplace wellbeing through the attainment of a Healthy Working Lives Award, including the Scottish Government. There is, however, always room for improvement. The Scottish Government is working with NHSScotland and with COSLA to develop a public sector mandate on health and work. The intention is to empower the public sector to take a coherent approach to workplace health, safety and wellbeing, attendance management, occupational health and work rehabilitation and return. It is important that these are approached as a whole system and not separate, siloed areas of activity.

The Boorman review of the health and wellbeing of the NHS workforce in England (Boorman 2009) identified the close links between good staff health and wellbeing and improved clinical outcomes. The review concluded that NHS sickness absence in England could be reduced by a third from its current rate with an estimated direct cost saving of approximately £555 million. The recommendations of the Boorman review are well worth considering both for the NHS in Scotland and for the wider public sector.

Dame Carol Black’s review of working age health in Great Britain recognised the need for the inclusion of Occupational Health within mainstream healthcare. There is a challenge for the occupational health and vocational rehabilitation communities to establish clear professional leadership for supporting the health of all working age people.

It is equally important that other parts of the Scottish Public Sector adopt these principles, particularly local government which employs a significant proportion of those working in the public sector.

The sharing and adoption of good practice across the public sector is more critical now than ever to ensure that the benefits of improved motivation and productivity, and reducing sickness absence can contribute to maintaining public services.
Impact of the recession

The impact of the economic recession is being felt across the whole of the Scottish economy. This can have serious repercussions for health amongst the working age population, both for those in work and those seeking employment. We know that unemployment has a negative impact on health, but also that returning to work very quickly starts to improve health and wellbeing (Waddell and Burton 2006).

For the newly unemployed it is important that they receive advice on maintaining their wellbeing while looking for work and that the contribution of unemployment is recognised by healthcare professionals when supporting these people.

Employers too, should consider the impacts of restructuring their organisation. As well as the negative impact of health on those losing their jobs, the workers that remain can also experience poorer health, including worry that they might be next, the impact of work intensification or stresses from working in new and unfamiliar structures (Kieselbach et al 2007). Employers can mitigate some of the effects of restructuring by ensuring that they involve the workforce in job design and delegate reasonable control for how individuals and teams do their work.

Implications for healthcare services

For those people with a health barrier to remaining in or returning to work, the attitude of healthcare professionals towards the relationship between health and work is critical.

As well as providing health benefits, work can be a part of the recovery and rehabilitation process. It is important that the patient’s work status is recognised and that the patient’s health care plan supports them either to return to work or to access employability services that will move them towards work. If the patient is in work, they will need to be given sufficient information and support to discuss returning to work with their employer. If they are out of work, then the discussion should be started early enough for other services such as Jobcentre Plus or other employability advice and support to be accessed in a timely manner.
The introduction of the ‘fit note’ to replace the sicknote has moved us a significant way to encouraging health professionals to consider the importance of work. However, we wish to do more. The Scottish Government is working with a wide range of healthcare professionals to develop a ‘Scottish Health Offer’ which will set out principles and standards for provision of health services to those with a health barrier to work. This will improve the recognition by health professionals of the important contribution to health that work can make and the confidence and skills of staff to incorporate work issues in their interaction with patients.

Welfare benefits

As I have pointed out above, it is as important to address the health barriers of those out of work as it is for those in work to enable as many people as possible to get the benefits of participating in some form of meaningful activity. Most people will, with the right support, be able to manage their condition sufficiently for them to do so.

It is important, however, that the benefits system itself does not create barriers to entering into work. Prolonged time spent on benefits erodes health and wellbeing, and makes re-entering work increasingly difficult. I would hope that the reforms of the welfare system proposed by the new government in Westminster will ensure that any existing welfare barriers to work are removed and that no new ones are erected, whilst ensuring that sufficient support remains for those that need it. It is particularly important that people who are moved from health-related to job-seekers benefits are not then abandoned to find work themselves. Otherwise we will surely see them again shortly, likely in a more incapacitated state than before.

At the time of writing, DWP have indicated the ending of their Condition Management Programme in March 2011. Those with health conditions who would return to work will continue to need access to support for their condition and the Scottish and UK Governments will need to work together to ensure this need is met.
An ageing workforce

We are entering a period when the first of the baby boom generation are starting retirement and the last are moving into late middle age. This means a significant proportion of the working age population are in their 50s and early 60s, with an increasing prospect of having to work longer before retirement. We can expect this cohort to develop the common, long-term conditions of late middle age – for example arthritis, diabetes, osteoporosis – as well as conditions such as cancer, where people can often continue to work. This will present challenges for both healthcare services and employers. The NHS will need to recognise the need to help keep this population as healthy and active as possible and to include work in care pathways. Employers, too, will need to recognise that they can contribute to keeping their workforce as healthy as possible, while also understanding the need to make adjustments in workplace practices to allow workers to receive healthcare or to manage their conditions.

The next generation

Given the demographic make-up of the current workforce and the changes over the next 10-20 years it is more important than ever that the next generation of workers are ready and able to fully participate in the jobs market. These workers will need to better appreciate the important links between work and health, to accept that they have responsibility for maintaining their own health, but also to have an expectation of employers responsibility to look after and promote the health and wellbeing of their staff. There needs to be room in the curriculum to prepare young people for the world of work and to let them know what can be expected of them and of their employers to ensure that they can all benefit from employment.
CHAPTER 3
Scotland and problem drug use

Scotland has a mature drug treatment capability – based on ‘shared care’. The process of enhancing control within individuals as outlined in previous chapters is central to promotion of recovery. Expectations contained in the promotion of recovery and delivery of personalised care must be balanced with the existing public health benefits of well evidenced approaches to reduce drug-related harm. More effective methods of primary care engagement are required to increase the likelihood of consistently delivering evidence-based interventions in the users’ own environments through effective systems of shared care. This will also increase recovery capital and re-engage substance misusers with important care systems which will be needed to address their emerging health needs.

Substance misuse can be seen as a multifactorial problem with biological, physical, mental and social components. Clearly no single discipline acting alone has the ability to effect a successful outcome. The Scottish Government has a widely supported strategy which recognises the need for harm reduction but also promotes recovery and prioritises the needs of children and substance misusing parents as well as recognising the need to act effectively to prevent the development of drug problems. Whilst it is important that all individuals should be supported in their aspirations for recovery it must be recognised that within a spectrum of people with substance use problems there is a huge gap in the distance some must travel to be re-integrated into mainstream society.

Treatment of substance misuse always stimulates controversy and strong views among politicians, the media and the caring professions. Despite this, or perhaps because of the resulting intense interest, Scotland has concentrated considerable effort and expense in assembling a treatment service with many qualities. Born out of the disaster of HIV infection in injecting drug users, the medical problems evident among young drug users, the strain on the criminal justice system as users fall into its orbit and the emotional and tragic child care implications associated with parental drug use, drug services have developed a range of approaches, designed to minimise these problems, to reduce drug deaths and improve prospects for drug users and their families. Support for these controversial policies has come from all political parties. The Conservative
Government of the 1980s supported the provision of needles and syringes (Scotland had the first National policy endorsing this in the world), and successive governments of all parties have supported opiate substitute treatment as part of the overall care provided. Recently attention has focussed on child care and child protection as well as driving forward a new agenda of holistic personal care designed to meet the aspirations of each individual in their progress to their own personal manifestation of recovery.

**A person’s journey**

In a very simplistic sense, a person’s journey through a dependency could be split into three sections. The treatment or action which would be appropriate for each of these sections would necessarily be different. Assessment and development of an individual care plan for each person is vital to providing effective interventions.

Consider the first section: initially the quantity of drugs taken is small and use infrequent. The drugs are enjoyed (something not to be forgotten) and may provide relief from anxiety, give excitement, or blot out emotions linked to physical or sexual abuse. The person can afford the drugs and their lifestyle is not greatly affected. As their use continues more of the drug needs to be taken for less effect. Occasion becomes frequently then daily. Problems emerge physically and mentally, with relationships, family and employer but their drug use is still functional and continues. The second section: the person is now dependent and subject to cravings, loss of control, increased tolerance - so more drugs are needed or ingestion changes to intra-venous use - withdrawal symptoms, physical and mental harm and the loss of salient alternatives to drug taking to avoid pain or induce pleasure. This person is frequently unemployed and outwith family support, possibly homeless by this time and well acquainted with the criminal justice system. The drugs are still functional and the misuse goes on. The third section sees the complete breakdown of the addicted individual, physically, mentally and socially. They are thoroughly exhausted by the interventions of the criminal justice system - usually imprisonment - and are often homeless. The drugs are no longer functional and are only taken to keep withdrawal at bay and to numb the mind to loss and misery.

With this scenario in mind it is obvious that a range of interventions is necessary to impact on an individual’s situation. This involves cooperation between housing, education, employment, criminal justice, social services, specialist drug treatment services, and community based services which must include the General Practitioner and broader primary care team. The GP is well placed to assess and treat individuals with problem use, engaging them with local specialist and generic services. This role should be a core primary care service, and not an ‘enhanced service’ that can be opted out of. There is a maxim ‘If you are not part of the solution you are part of the problem’. This is especially so in drug treatment services. Government has the responsibility to require services to provide a full range of effectively governed evidence based treatments in each area without a “postcode lottery”. When being in treatment at the very least reduces the likelihood of premature death, exclusion from a cheap, cost effective, evidence based treatment must be unacceptable.
**Shared care**

In the NHS opportunities arise to deliver services to individuals with problem use in specialist or general settings. Participants include specialist clinics led by a Consultant team and General Practitioners/primary care services. Recently community pharmacists have taken on an increased role. Also involved are voluntary agencies and private providers. Problem users interact with social care and criminal justice agencies but increased medical provision has been required to cater for an increasing number of their needs. Shared care has become the paradigm within which a range of service elements deliver interventions to individuals. These services deliver programmes which aim to prevent harm and support recovery. They include primary and secondary prevention, basic harm minimisation to disorganised and chaotic individuals as well as family support, access to rehabilitation processes and, increasingly, services aimed at encouraging employability or housing support. This model therefore involves primary care in close collaboration with many services.

This path-finding model is envied by other countries but depends fundamentally on the participation of each component to be effective. In areas where all agencies are functional this system works well, providing a robust and accountable infrastructure. In areas where any component is functioning in a less satisfactory way, however, problems arise. When partial failure leads to stress in the system this is most manifest in specialist clinics which carry the ultimate responsibility for local care and cannot opt out. Rising waiting lists, absence of primary care involvement or a malfunctioning support services are warnings of failure of the shared care model. Other indicators are over reliance on one practitioner or practice or fatigue in an overburdened part of the service. Leadership and peer support are critical and this requires skilled and realistic support from local managers and commissioners.

This approach to delivering a complex spectrum of services has become a model for other parts of the NHS. Arising out of the HIV/AIDS and rapidly emerging drug problems of the 1980s, shared care approaches have been used in the management of many chronic conditions such as diabetes or chronic cardiopulmonary disease. Establishing a functioning link among agencies, a flow of information and an agreement of tasks to be shared or assumed by different parts of the organisation represents a cost effective and person centred approach to delivering health care.

Primary care may be a fundamental strength or a fatal weakness in the shared care model. Dissention or negative views from one practice/group can disable the system whereas a vibrant primary care sector can carry a large share of the burden providing an invaluable, local, integrated, family approach. If recovery has, at its centre, normalisation, for many service users an important step is the ability to be cared for in their own community by their local doctor. At the present time there are examples of both effective and dysfunctional GP services. In some areas shared care effectively doesn't exist and
the responsibility defaults to secondary care. The optional nature of enhanced services allows the emergence of gaps in the system. Persuasion can come in the form of health board inducements or personal chemistry between individuals. On a national basis adjusting the General Medical Services contract seems low on the agenda of BMA negotiators but should nevertheless be encouraged.

**An evolving healthcare problem**

Specialist services have historically been the responsibility of Psychiatry. Clinics have, however, had to change to manage the complex problems becoming common in drug users better. As the drug using population expands and ages, more areas of medicine need to join the collaboration. Infectious diseases, for many years critically important in managing cases of HIV/AIDS, now have a rising caseload of patients with liver disease due to hepatitis C and are required to engage with new manifestations of drug use such as the recent anthrax outbreak. Anthrax and tuberculosis in drug users has required shared care between public health, respiratory physicians, surgical teams and the clinical microbiological services. A range of medical conditions are presenting as early degenerative disorders in patients with opiate dependency. Cardiologists and respiratory physicians are finding themselves responsible for drug related diseases. Premature cardiomyopathy from alcohol problems, early lung cancer in heroin and cigarette smokers, chronic pulmonary obstruction, and pneumonia are presenting in extravagant form in chronically under nourished individuals. In addition to this, specialists unfamiliar with opiate dependence treatment find themselves managing difficult patients tolerant to large doses of opiates.

The capacity of treatment services has never been more tested. Not only is demand greater and the requirement for high quality scrutinised but newer more testing responsibilities are being expected. Services which arose as a matter of urgency in the 1980s to curb the epidemic of blood borne viruses are now responsible for personal and individualised care for each patient. In many ways the new demands are simply an extension of existing provision. Health care workers involved with people who use drugs would say that their interests are in total care including a recovery agenda for each individual. It is important that the system focuses on recovery as the overarching outcome it delivers.

The challenges for the next few years are many. Improving services, refocusing the aims and objectives of services and restructuring the overall package to deliver recovery are recurring themes. How to achieve this without damaging the valuable and effective elements of the existing system is work in progress.
In April 2009 the first cases of a new strain of influenza were identified in Mexico and then new cases in the USA were classified as a new type of influenza virus. Within days, 2 Scottish people who had recently returned from holiday in Mexico were identified as the first UK cases. This new influenza strain was identified as Influenza A (H1N1)v. In response to initial reports of significant illness and death in Mexico, the UK and Scottish Governments and Public Health Organisations prepared to respond to a potential pandemic. The existing contingency and pandemic influenza plans were enacted and UK-wide political, civil service and scientific advisory structures were urgently established to manage the UK’s response to the potential pandemic. The (H1N1)v virus spread very rapidly across the world and the World Health Organization (WHO) officially declared a pandemic on 11 June 2009.

Like seasonal flu, infection with influenza A (H1N1)v could cause little or no symptoms, or cause an unpleasant but self-limiting disease. However, this virus did cause severe illness in a minority of people who experienced bronchitis, viral pneumonia or secondary bacterial pneumonia. Other complications of (H1N1)v included ear infections, tonsillitis, septic shock, meningitis and encephalitis. The groups of people most likely to be admitted to hospital were those with underlying medical conditions and pregnant women. Complications in pregnant women included pneumonia and cardio-respiratory complications.

Ministers took the key decisions within the UK Civil Contingencies arrangements designed to respond to major threats to the UK population. These UK-wide arrangements ensured that decisions were taken as soon as evidence was gathered and reviewed and consensus was sought across the UK countries. Once taken, decisions were rapidly implemented and shared openly and quickly with the public via the media. The relative novelty of this new strain of influenza meant however that time was necessary to collect enough information to estimate the potential impact of (H1N1)v on the UK population.

The Scottish Government responded to the pandemic using previously determined and practised resilience and health protection structures. The overall response was effectively composed of two phases: the containment phase which aimed to limit the spread of influenza infection and
The treatment phase, which aimed to mitigate the impact of influenza on health and ensure the continued routine functioning of society. The UK operated a containment policy for some two months from the emergence of the (H1N1)v virus. The containment phase included:

- Testing patients suspected of having (H1N1)v
- Offering antivirals to all suspected or confirmed cases
- Taking throat swabs from suspected cases
- Treating cases without waiting for diagnostic confirmation
- Contact tracing and prophylaxis of close contacts with antivirals
- Closure of schools based on health risk assessments
- Self-isolation of cases in the community
- Investigation of cases and contacts.

The purpose of containment was to slow the spread of the virus in the population and gather more information about the virus, including its severity, the groups at most risk and transmissibility of the virus. This information would increase the effectiveness of any future pandemic-specific vaccination programme.

As the pandemic progressed affecting many communities, Scotland moved into the treatment phase. Surveillance, investigation and risk assessment processes were adjusted and continued. Emphasis was switched to limiting impact by treatment and care, infection control and immunisation. Health Protection Scotland (HPs) worked closely with other UK health protection agencies to ensure a consistent UK response.

As the pandemic evolved, it became clear that the original information coming out of Mexico on the severity of the illness was not being replicated in Europe and that the impact of the (H1N1)v pandemic would not be as severe as first feared. (H1N1)v mainly affected younger people who, on the whole, had better health. However, certain groups of people were particularly affected by this influenza strain:

- Those with ongoing illnesses such as heart disease, respiratory disease and diabetes
- Pregnant women
- Children under 5 years of age.

Significant numbers were admitted to hospital in Scotland and sadly a proportion, some of whom had been previously healthy, died. In light of this evidence, the UK Health Departments, with expert scientific advice, offered immunisation to defined groups in the population with the aim of lowering their risk of significant disease and death. In addition, frontline NHS and social care staff were offered the vaccine to reduce their risk when caring for those ill with (H1N1)v and to limit the possible effect on health and social care provision.

The (H1N1)v immunisation programme formed an important part of the overall UK pandemic response aiming to mitigate the impact of (H1N1)v rather than further limiting spread. Health Protection Scotland co-ordinated the influenza A (H1N1)v vaccination programme working with the Scottish Government, 20 NHS Boards, 1,024 General Practices, the Scottish Prison Service, and 32 local authorities. The Scottish Government established a steering group to oversee the programme.

Surveillance: This was a key part of the response to (H1N1)v; monitoring the spread and impact of the infection in Scotland. The Scottish Influenza Surveillance Reporting scheme collected information on the
number of consultations for influenza like illness or acute respiratory illness from Scottish General Practices. There was an increasing trend in consultations until mid to late November followed by a sharp decline in December and a rise to a further, smaller peak in late December, followed a decreasing trend (see Figure 8).

Although experts eventually considered that (H1N1)v was a virus causing illness of relatively mild severity, influenza (H1N1)v still caused considerable illness in Scotland. From May 2010 nearly 100,000 people in Scotland were prescribed courses of antiviral treatment. Figure 9 shows the similarity in the time trends of presentations of influenza like illness to GPs in Scotland and of the proportion of throat swabs submitted and found to be positive for (H1N1)v. The circulation of the (H1N1)v Influenza virus reached its height in the final weeks of 2009 and effectively ceased circulating after the first 3 months of 2010.
**Immunisation:** On 13 August 2009, the Scottish Government announced details of the clinical priority groups for Phase 1 of the immunisation programme: Ministers agreed that frontline health and social care staff workers would also be offered vaccination alongside the first priority groups as these staff were at increased risk of infection and of transmitting that infection to susceptible patients. In September 2009 the Scottish Government issued further guidance on the priority staff and occupational groups including definitions for staff providing healthcare in non NHS settings that would also be included in the vaccination programme. In November, 2009, Phase 2 of the immunisation programme offered vaccination to all young children aged over six months and up to five years of age. The reason was that children under the age of five years had consistently the highest levels of hospital admissions with the (H1N1)v infection.

Uptake figures for the (H1N1)v vaccine campaign in Scotland, estimated in April 2010 were:

- Those in clinical ‘at risk’ groups 54%
- Those aged under 5 years 66%
- Those aged 5-64 years 52%
- Those aged 65 years 56%.

Apart from the thousands of people treated with (H1N1)v influenza at home or by primary care services, a large number of people experienced more severe illness. As at 1 March 2010, a total of 1540 people with confirmed (H1N1)v infection had been admitted to hospital. Sixty-nine people died of confirmed (H1N1)v infection. Of those who died about 70% had underlying medical conditions including diabetes, respiratory conditions, obesity, renal/liver conditions, congenital abnormalities, immuno-suppression, pregnancy and cancer. In some cases, the patient had more than one of these conditions. Figure 10 below shows how numbers admitted to hospital increased sharply during the last 3 months of 2009, dropping equally sharply in the first few weeks of 2010 as the levels...
of circulating virus fell away and as increasing numbers were protected by vaccination.

On 10 August 2010, WHO Director-General Dr Margaret Chan announced that the (H1N1)v influenza pandemic was over. However, localised outbreaks of various magnitudes are likely to continue. The world is now in the post-pandemic period. It is however, expected to re-appear as the dominant strain during the next flu season in 2010-2011. Based on knowledge about past pandemics, the (H1N1)v (2009) virus is expected to continue to circulate as a seasonal virus for some years to come. While the level of concern is now greatly diminished, vigilance on the part of national health authorities remains important. Such vigilance is especially critical in the immediate post-pandemic period, when the behaviour of the (H1N1)v (2009) virus as a seasonal virus cannot be reliably predicted.

In Scotland, the seasonal trivalent vaccines that are available do cover the (H1N1)v (2009) virus. The (H1N1)v virus is not currently known to be circulating in Scotland. But it is certain it will cause flu-like illness in Scotland this winter and those in the groups offered influenza vaccination should have it. I would like to take this opportunity to pay tribute to the unceasing efforts of all involved in responding to the 2009 pandemic. A great many people in many different services worked extremely hard to provide a coordinated and successful response to what could have potentially been a very severe threat to the health and wellbeing of the people of Scotland. Those services responding did so with a degree of professionalism that allowed normal services to continue to be provided.

Finally, we must not drop our guard. This was the first pandemic for nearly 50 years and its virulence was not as severe as first feared. However there are still many other influenza viruses out there including the avian strain - H5N1. These viruses constantly change and the probability of a new pandemic with a different virus is much the same as it was prior to May 2009.
In December 2009 and the first part of 2010, Scotland experienced a large outbreak of Anthrax infection. Anthrax is a very rare but serious bacterial infection caused by the organism ‘bacillus anthracis’. The disease occurs most often in wild and domestic animals in Asia, Africa and parts of Europe. The organism can exist as spores that survive in soil and the environment for many years. Humans are rarely infected usually by direct contact with skin or tissues of infected animals. People can also be infected by inhaling or swallowing anthrax spores.

It was apparent early in the outbreak that those affected were drug users. These individuals presented to GPs and hospitals with inflammation or abscesses at the sites in their body where they had injected heroin. Heroin users may sometimes smoke or ‘snort’ heroin but many will inject it into their body with needle and syringe. The regular injection of heroin and other substances into veins eventually leads to their damage and disappearance. When this happens users may inject heroin directly into muscle or into the skin (skin or muscle ‘popping’).

In this outbreak anthrax symptoms usually began between one and two days after injection of heroin. The affected individual was usually admitted to hospital some 4 days later. The range of symptoms was wide with no consistent type of presentation to clinicians.

The first cases presented to hospital in Glasgow. NHS Greater Glasgow initially established an Outbreak Control Team (OCT) to determine the size and source of this outbreak. This OCT investigated this outbreak with the intention of establishing the numbers affected, to establish the cause and then act to control the outbreak. Those involved in the OCT included microbiologists, Strathclyde Police, Health Protection Scotland, and the Health Protection Agency (HPA) Special Pathogens Reference Unit (SPRU) at Porton Down and others. The OCT considered that contaminated heroin or a contaminated ‘cutting agent’ was the most likely vehicle of the anthrax infection. It regarded the risk to the general public as very low.

Over the following weeks more individuals across Scotland were diagnosed with Anthrax and Health Protection Scotland established a National Outbreak Control Team. Representatives of the Scottish Drugs Forum and National Forum on Drug Related Deaths were important additions to the OCT.
at this stage as it was vital to communicate the risk effectively to the many people who use heroin in Scotland.

The OCT released information through a number of routes advising the drug using community of this additional serious risk of taking heroin and that they should seek urgent medical advice if they developed an infection. The Scottish Drugs Forum worked with the OCT to develop special information leaflets and posters.

The key messages to reduce harm included:

- Avoid the use of any form of heroin if possible
- Seeking alternatives via drug treatment services
- Highlighting the symptoms and signs of infection.

It was considered that smoking (or snorting) heroin could lead to breathing in anthrax spores and the risk of inhalational anthrax. This combined with the risk of injecting anthrax spores into veins, muscles and skin meant that the OCT advised addiction services and pharmacies that it was not possible to advocate any ‘safe route’ of administration of heroin. This approach was in contrast to the outbreak of Clostridium novyi infection affecting Intravenous drug users in Scotland in 2000 (McGuigan et al 2002, Taylor et al 2005). This organism did not have the same potential for infection by inhalation.

The Chief Medical Officer alerted all general practitioners, hospital accident and emergency departments, intensive care and high dependency units, microbiologists, the ambulance service, NHS 24, services for drug users and others, to be aware of the potential for anthrax in those presenting with symptoms consistent with this disease.

The Outbreak Control Team identified three possible reasons for this anthrax outbreak.

First, Anthrax may have entered the heroin at any point in the supply chain from its original source to the point when it was bought by the drug user. Heroin is often transported in skin carrier bags in Afghanistan and other heroin producing areas. The animal skins may be the source of the anthrax spores.

Secondly, the dissolving agent or cutting agent was contaminated with anthrax.

Thirdly, there was a undiscovered link between the cases.

Although the majority of cases were identified in Scotland, a drug user in Germany died from anthrax in December 2009 and, since then a further 4 anthrax cases have been diagnosed in England. The OCT has not been able to identify any direct links between these cases to any Scottish case so far. Despite intensive investigations, working with other agencies and countries, the OCT has not been able to identify a specific cause for the outbreak or any source of contamination of heroin. Those
infected with anthrax apparently took heroin by intramuscular, intravenous or subcutaneous injection and/or by smoking or snorting.

The National Outbreak Control Team has worked closely with the Health Protection Agency, colleagues in other parts of the UK and the European Centre for Disease Control. The OCT has also worked closely with anthrax experts from the Centre for Disease Control (CDC) in Atlanta USA.

Diagnosis has been confirmed by a combination of isolation of *Bacillus anthracis* in blood cultures in some patients, supported by PCR (Polymerase Chain Reaction) testing of blood or tissues at the Health Protection Agency (HPA) Special Pathogens Reference Unit (SPRU) at Porton Down, England.

Those infected with anthrax have been given intensive medical treatment with intravenous antibiotics, guided by expert microbiologist advice. A significant number of patients have required surgical treatment due to the loss, because of infection, of skin, muscle and other tissues. Some patients were treated with specialist anthrax immunoglobulin (AIG) supplied by the United States Centres for Disease Control and Prevention (US CDC). CDC experts have actively assisted the investigation and continue to provide advice based on recent US experience with human anthrax infection.

At the time of writing 47 people in Scotland have been confirmed as having contracted anthrax. 35 men and 12 women. The average age was 35 years for both men and women. The first patient was admitted to hospital in Glasgow on 7 December. The majority (39) lived in the west of Scotland with only 11 cases in the east (Table 1). Interestingly this distribution mirrors the geographical pattern of the Clostridium Novyi outbreak in 2000.

Although rare, there have been outbreaks or cases of illness among intravenous drug users in recent years. In 2000 Scotland experienced such an outbreak with 60 cases and 20 deaths. The organism, Clostridium Novyi, was considered to have been the cause probably transmitted in a contaminated batch of heroin (Taylor et al 2005, Ringerz et al 2000). In 2000 a heroin-injecting drug user in Norway was identified as suffering from ‘injectional’ anthrax and contaminated heroin was

**Table 1: Cumulative Total of Anthrax cases in Scotland by NHS Board, 6 August 2010**

<table>
<thead>
<tr>
<th>NHS Board</th>
<th>Confirmed Cases</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ayrshire and Arran</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Dumfries and Galloway</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Fife</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Forth Valley</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Greater Glasgow and Clyde</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Lanarkshire</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Lothian</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Tayside</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>13</td>
</tr>
</tbody>
</table>
considered the source of infection (Brazier et al 2004).

This tragic loss of life and disabling illness in young men and women again highlights the enormous risks faced by the large number of people in Scotland who take drugs and, in particular, those who inject drugs.

I would like to thank all those involved in the response to this complex and long lasting outbreak. I would highlight the continuing work of HPS. We are also particularly grateful to CDC in providing experts who travelled over to Scotland in the new year period and for their supply of the specialist anthrax immunoglobulin (AIG) for treatment of Scottish patients.

The investigation is ongoing. The outbreak has not been declared over. The Outbreak Control Team will publish a final report on this outbreak in due course.
Infections continue to be a major public health problem in Scotland. Although significant progress has been made in reducing their impact, much remains to be done to further reduce disease and suffering. This chapter summarises significant trends in the incidence of the communicable diseases of public health importance in 2009.

**Gastro-intestinal and foodborne infections**

*Campylobacter* infection remains the most common of the more severe GI infections with 6,378 cases of *Campylobacter* infection being reported to HPS in 2009, an increase of 30.7% compared to the 4,878 reports in 2008 (a rate of 123.4 per 100,000 compared to 96 per 100,000). The incidence of *Campylobacter* in Scotland peaked in 2000 and then declined every year until 2004. The increase in 2009 brings the level of reported cases to slightly below the peak of 2000. The rise was not the result of any identified outbreaks but rather a growth in the number of cases throughout the year, across Scotland. No obvious reason for this increase has been identified.

*Norovirus (NV)* infection is the most common of the less severe GI infections in Scotland. During 2009, 231 general outbreaks of NV were reported to HPS, a decrease of 28.7% compared to 2008.

A total of 237 confirmed cases of *E. coli O157* were reported to Health Protection Scotland during 2009. The rate of reports per 100,000 population for the whole of Scotland was 4.6 in 2009, compared to 4.7 in 2008. The continued importance of both foodborne and farm-related sources of infection (as highlighted by the *E. coli O157* Task Force) was reinforced in 2009 by inquiries on foodborne outbreaks in both Scotland and Wales, and by outbreaks in England involving visitors to open farms. In addition to recently updated national guidance on the public health management of VTEC, advice was published on reducing risk amongst rural communities and visitors.

The rate of *Salmonella* infection substantially declined in 2009: 16.4 per 100,000 population (847 reports) compared to 20.2 per 100,000 population 2008. There was an increase in reports of *Salmonella monophasic Group B* (94 reports in 2009 compared to 37 in 2008). Much of this increase was due to a strain with an
indistinguishable molecular pattern and was associated with contact with reptiles. Investigations traced the source of the infection to imported feeder mice.

**Bloodborne virus and sexually transmitted infections**

During 2009, 2,013 new cases of hepatitis C antibody-positivity were diagnosed. This figure compares with 1553 and 1725 for 2007 and 2008, respectively. Of the 2009 cases, 47% (939) are known to have injected drugs, representing 90% of those with a known risk factor. At the time of diagnosis, 25% (510) were aged 20-29 years, 37% (749) were aged 30-39 years, 25% (498) were aged 40-49 years, 8% (163) were aged 50-59 years and 3% (60) were aged over 60 years. This brings the total to 27,355 cases of hepatitis C antibody-positivity ever diagnosed as at 31 December 2009, of whom 14% are known to have died. Approximately one in 220 of Scotland’s population had been diagnosed hepatitis C antibody-positive. It is estimated that the number of undiagnosed hepatitis C antibody-positive cases in Scotland still exceeds the number of diagnosed cases.

In 2009, NHSScotland laboratories reported positive HIV-antibody test results for 417 individuals not previously recorded as HIV-positive. Of the 417 recently reported HIV-positive individuals, 291 (70%) are male, and 286 (69%) are aged between 25 and 44 years. The probable route of transmission was men who have sex with men (MSM) in 137 cases (including a small number who were also injecting drug users), heterosexual intercourse in 196 cases, and injecting drug use in 15 cases. Of the heterosexual cases, 109 probably acquired their infection abroad. For 60 cases, the transmission category is, as yet, undetermined. The cumulative total of known HIV-positive individuals in Scotland is now 6247, of whom 4521 (72%) are male and 1726 (28%) are female; 2445 (39%) of the 6247 total reports are presumed to have acquired their infection outwith Scotland. At least 26% are known to have died.

In 2009, 64 cases of AIDS were reported by clinicians, 30 of which were diagnosed in 2009 with 34 diagnosed in previous years. The cumulative number of AIDS cases is now 1552, of whom 1227 (79%) are male, while 999 (65%) are known to have died.

**Healthcare associated infections**

Numbers of cases of *Staphylococcus aureus* bacteraemia (blood poisoning) have been monitored in Scotland since 2001. In the last year there were 2046 cases of *Staphylococcus aureus* bacteraemia in NHS facilities in Scotland. A quarter of these were MRSA \( (n=533) \) and the majority MSSA \( (n=1513) \). A significant year on year reduction of 6.1% has been observed since 2005. MRSA bacteraemia has reduced year on year by 14.5% and MSSA by 1.7%. The majority of MRSA isolates (81%) typed by the Scottish MRSA reference laboratory, as part of the snapshot programme in the last year, were attributable to the epidemic strain EMRSA-15 and there have been substantial reductions in these infections since this time.

Multiple infection prevention and control interventions have been implemented since 2001. Some of these, such as the hand hygiene campaign, will have made a contribution to reducing HAI overall. The reduction in *S. aureus* bacteraemias may also result from NHS boards implementing special measures to reduce infections associated with peripheral vascular
catheters (PVC). Whilst inroads in reducing these infections have been made, nevertheless there continue to be significant numbers of cases. It is anticipated that wider implementation of these measures will lead to further reductions in \textit{S. aureus} bacteraemias. \textit{Clostridium difficile} infection (CDI) surveillance in NHSScotland identified 3625 cases in the last year in those over 65 years. The annual overall rate for Scotland in 2009 was 0.71 per 1000 total occupied bed days), which is a decrease of 42% compared to 2008. The significant decreases seen in Scotland have been mirrored in other parts of the UK. \textit{C. difficile} infection rates in this country are undoubtedly high, but it is difficult to get a clear picture of how this compares to other countries; even within the UK, there are substantial differences in surveillance case definitions.

The reduction of CDI rates is likely to be a result of a combination of improved infection control procedures (including improved hand-hygiene, environmental cleaning and adequate use of isolation rooms), implementation of antimicrobial stewardship, and improved education and communication at all levels within the service. This also includes implementation of over-arching strategic plans in NHS boards to reduce the burden of CDI. This list is not exhaustive.

The relative impact of each action is difficult to quantify because of concurrent implementation of a number of different strategies.

Rates for surgical site infection (SSI) under mandatory national surveillance are low by comparison to CDI. Rates of infection in the hip arthroplasty and caesarean section surgery categories have significantly reduced since surveillance became mandatory in 2001. In total, the surveillance system detected 150 cases of SSI following hip arthroplasty surgery and 595 cases following caesarean section surgery in 2009. Half of all SSI following hip arthroplasty surgery were detected after discharge and on readmission to hospital. Continued implementation of the Scottish Patient Safety Programme controls for SSI over the next year should continue to contribute to reducing these clinically significant infections.

**Vaccine preventable diseases**

As measles has become rare in Scotland, it is difficult to diagnose clinically without laboratory tests. There were 172 notifications for measles in Scotland in 2009 and 17 were laboratory confirmed. This compares with 219 notifications and 54 laboratory confirmed cases in 2008. In every year, the majority of measles cases occur in unimmunised individuals.

The total number of mumps notifications and laboratory confirmed cases in 2009 was 1105 and 583 respectively compared with 720 mumps notifications and 172 laboratory confirmed cases in 2008. Cases continue to be mainly among the young adult age group (aged 15-24 years), who are often under immunised against mumps, not having been routinely offered two doses of MMR vaccine when they were children. There were 93 notifications of rubella in 2009, and no laboratory confirmed cases. This compares with 106 notifications and four laboratory confirmed cases in 2008. In 2009, uptake of one dose of MMR by 24 months was 93.6% and for those reaching 5 years of age, 96.1%, thus remaining above the target of 95% of children receiving at least one dose by the age of 5.
The total numbers of notifications and laboratory confirmed cases of pertussis in 2009 were 83 and 99 respectively, compared with 134 notifications and 88 laboratory confirmed cases of pertussis in 2008. Whooping cough is known to be under-notified in Scotland.

There have been no reported cases of meningococcal serogroup C infection since four cases were reported in 2007, indicating the effectiveness of the meningitis C vaccine campaign. A total of 139 cases of other types of meningococcal infection were reported to HPS in 2009 representing an annual incidence of 2.69 cases per 100,000 population. This compares with 125 cases reported in the same period of 2008 and 157 cases in 2007. Meningococcal disease occurred more frequently in younger age groups: 46.0% (64 cases) were aged less than 5 years.

Pneumococcal conjugate vaccine (PCV-7) has been part of the routine childhood immunisation schedule since September 2006. The PCV-7 has now been replaced with a PCV-13 vaccine since late spring 2010. The new vaccine will follow the same three dose immunisation schedule at 2 and 4 months of age followed by a booster at 13 months. PCV-13 will protect against the same seven serotypes of \textit{Streptococcus pneumoniae} as PCV-7 and 6 additional serotypes. Thirty nine cases of Invasive Pneumococcal Disease reported in 2009 were in children aged under 5 years. This compares with 34 cases in the same time period of 2008. Twenty-three cases were aged under 2 years and eligible for vaccination. The majority of these cases (16; 69.6%) were caused by serotypes not protected by PCV-7 but by PCV-13. There were 3 cases aged 5 years or under who were infected with a serotype of \textit{Streptococcus pneumoniae} covered by PCV-7. One case was aged less than 2 months and not yet eligible for vaccination. The remaining two cases (aged 3-11 months and 2 years) had not received the full course of PCV-7 vaccine.

Vaccine uptake remains high in Scotland. As of December 2009, uptake rates by 24 months of age for completing primary courses of diphtheria, tetanus, pertussis, polio, Hib, MenC and PCV were between 96% and 98%. Uptake rates for the two booster vaccines Hib/MenC and PCV, given at 12 and 13 months, were at 93.9% and 94.1% respectively in children reaching 24 months of age. (ISD 2009)

**Tuberculosis**

There were 503 notifications of tuberculosis during 2009. This was similar to 2008 when there were 502 notifications, but this figure represents a continued increasing trend since 2005 when there were 389 notifications. The last year in which a comparable notification figure was recorded was in 1996 when it was 509.

This increase in notifications of tuberculosis is mirrored by an increase in reports to the Enhanced Surveillance of Mycobacterial Infections (ESMI) system. During 2009, the ESMI scheme provisionally reported 468 cases of tuberculosis (compared with 455 cases reported in 2008) which is the highest ever number reported to the ESMI scheme since it began in 2000.

Analysis of the 2008 ESMI data reveals that the incidence in Scotland of 8.8 cases per 100,000 population remains within the WHO target of less than 10 cases per 100,000 and is less than the rest of the UK (15.5 cases per 100,000 reported in England and 14.1 cases per 100,000 for the whole of the UK in 2008). (HPA 2009)

There has been a steady increase in the proportion of non-UK born cases since enhanced surveillance began in 2000. In
total, 49.0% of cases reported to ESMI in 2008 were born outwith the UK. The most common age group in the UK born cases was 55-64 years (35; 17.9%) compared to 25-34 years (90; 42.5%) in the non-UK born. In 2008 risk factors for the disease were identified for 96 (24.5%) cases. The most common was alcohol misuse (52 cases), being a refugee (34 cases), immunosuppression (32 cases), working in healthcare (15 cases), homelessness (12 cases), residency in a residential or corrective institution (six cases) and drug misuse (five cases).

**Conclusion**

Infectious diseases still pose a considerable threat with significant numbers of people having to attend their GP or being admitted to hospital as an emergency. 2009 has seen welcome reductions in levels of infection especially healthcare associated infections and vaccine preventable diseases. The number of new cases of tuberculosis, HIV, hepatitis C and campylobacter infection demonstrates the continuing need for action on the underlying reasons as to why people are falling ill with these conditions and on the prevention of onward transmission of infection from them.
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