ITEM No …11…….

REPORT TO: **HEALTH AND SOCIAL CARE INTEGRATION JOINT BOARD – 19 DECEMBER 2017**

REPORT ON: **DIRECTOR OF PUBLIC HEALTH ANNUAL REPORT 2016/17 – TRANSFORMATIONAL PUBLIC HEALTH**

REPORT BY: **DIRECTOR OF PUBLIC HEALTH**

REPORT NO: **DIJB54-2017**

1.0 PURPOSE OF REPORT

This report brings forward the Director of Public Health's Annual Report 2016/17 for information.

2.0 RECOMMENDATIONS

It is recommended that the Integration Joint Board (IJB):

2.1 Notes the content of this report and the Director of Public Health's Annual Report (attached as Appendix 1).

2.2 Notes the progress made against 2015/16's recommendations (pages 4-7 of Appendix 1);

2.3 Supports the recommendations for 2017/18 (page 8 of Appendix 1).

3.0 FINANCIAL IMPLICATIONS

None.

4.0 MAIN TEXT

4.1 Annually, the Director of Public Health in each territorial Health Board is required to publish an independent report on public health. In 2014 I was asked to produce a more focused and better illustrated Report covering fewer topics - feedback on the revised format has been extremely positive.

4.2 Over a three year cycle all our priorities are covered in my Report. This year's Report revisits 2013/14's topic areas (with the addition of Realistic Medicine) and comprises:

- A Population Profile of Tayside
- Health Protection
- Halting the Obesity Epidemic
- Realistic Medicine
- Sexual Health and Blood Borne Viruses
- Substance Use

Next year the Report will cover a different range of topics.

4.3 The Director of Public Health Annual Report is required to be taken to Tayside NHS Board and made public for use by local stakeholders, including individuals, committees, third sector, local authorities and NHS partners.

4.4 The Report focuses wherever possible on the health inequalities which surround us, and the

efforts being made in partnership to promote health equity. Transformational change in population health and wellbeing can be achieved by taking an explicitly public health approach, incorporating co-production, needs assessment, prevention, value for money, early intervention, putting evidence into practice, shifting the balance of care, having people formerly known as patients at the heart of all change, health and economic literacy, and asset based approaches with a resolute focus on equity.

4.5 It is sometimes said that public health is part of the solution. In my opinion a public health approach is the solution – not only to the challenges faced by NHS Tayside but also to those of its partners.

5.0 POLICY IMPLICATIONS

This report has been screened for any policy implications in respect of Equality Impact Assessment. There are no major issues.

6.0 RISK ASSESSMENT

No risk assessment has been carried out as the Director of Public Health's Annual Report is submitted for information only.

7.0 CONSULTATIONS

The Chief Finance Officer and the Clerk were consulted in the preparation of this report.

8.0 BACKGROUND PAPERS

None.

Drew Walker
Director of Public Health

DATE: 17 November 2017

Appendix 1

Population Profile

Health Protection

Halting the Obesity Epidemic

Realistic Medicine

Sexual Health and Blood Borne Viruses

Substance Use

Director of Public Health 2016/17 Annual Report

NHS Tayside

Transformational Public Health

Foreword

Recommendations from 2015/16 Report - an update

Recommendations from this year's Report

Population Profile - Pages 11-18

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Health Protection - Pages 19-27

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Halting the Obesity Epidemic - Pages 28-38

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Realistic Medicine - Pages 39-49

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Sexual Health and Blood Borne Viruses - Pages 50-58

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Substance Use - Pages 59-67

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Foreword

Welcome to my Annual Report for 2016/17. This is my 17th Report as the Director of Public Health in Tayside, and my 26th since I first became a director of public health. I hope you find it interesting and helpful. I would welcome any comments or suggestions for future Reports.

As in recent years, the Report only covers about one third of the topics which are currently a priority for us and our partners. This continues our recent pattern for Annual Reports, which means that all of our priorities are covered at least once every three years.

When I started work here 17 years ago NHS Tayside was under intense financial scrutiny related to a lack of financial control and a lack of sustainable models of care. The main outcome of that scrutiny was the financial overspend at the time being written off, but very little else changed. What followed was a period of unprecedented increase in NHS resources which were used in Tayside to develop a wide range of valued services, but also a significant number of unsustainable models of care, sometimes accompanied by suboptimal financial control.

As I write, NHS Tayside is once again under intense financial scrutiny. Whatever the outcome of that process, if we want to avoid history repeating itself, then this time something fundamental needs to change. I think we are all agreed that this change has to be transformational. I have been looking at a range of definitions of transformation, and the one I like best is as follows:

Transformation is a process of profound and radical change that orients an organisation in a new direction and takes it to an entirely different level of effectiveness.

Unlike 'turnaround' - which implies incremental progress on the same plane - transformation implies a basic change of character with little or no resemblance to the past configuration or structure.

Currently the word transformation is being bandied around and applied to almost any type of change. And while there are some very good examples of transformational change taking place in Tayside - recent progress towards the eradication of hepatitis C and the development of our gluten-free food scheme are outstanding examples - the majority of change taking place is incremental and/or transactional. Most of these current approaches are not going to take us to where we need to be.

It is no coincidence that these two outstanding examples of transformational change have taken an explicitly public health approach, incorporating population health intelligence, co-production, needs assessment, prevention, value for money, early intervention, putting evidence into practice, shifting the balance of care, having people formerly known as patients at the heart of all change, economic and health literacy, and asset based approaches with a resolute focus on equity.

It is sometimes said by people that public health is part of the solution. I take a different view. In my opinion the public health approach described above **IS** the solution - not only to the challenges faced by NHS Tayside but also to those of our partners. To that end, my public health colleagues and I are becoming increasingly

engaged in the transformation work taking place within the Board itself, and within our Health and Social Care Partnerships and our Community Planning Partnerships. That shift in our focus is very evident in all of the chapters in this Report.

It has become a bit of a cliché to say that the NHS is more of an illness service than a health service. While that might be understandable, there is no doubt that the single most important responsibility of the NHS is to improve population health, but it has been overly focused on treating disease while underinvesting in health improvement. Our NHS has prioritised technical approaches to the treatment of illness rather than preventing people becoming ill in the first place.

Addressing waste, variation and harm in the way we use the resources available to us has the potential to make a significant contribution to the transformation which is needed. The huge amount of money tied up in medicines when not used appropriately, is just one example of unacceptable waste. The disparity in the use of and outcome from services between our most and least affluent individuals and communities is just one example of unacceptable variation. Unnecessary admissions to hospital and the undermining of our natural resilience to adverse circumstances are just a couple of examples of unacceptable harm. There are many more examples of each of these. Addressing all of them in a transformational way will lead to better health and much greater cost effectiveness.

In addition to programmes which aim to improve the health of individuals and families, there is a need to change the environment in which we live. Much has been said in recent years about salutogenesis - the conditions which create health. I am starting to talk more and more about morbogenesis - the conditions which create ill health. These are the conditions in our environment which encourage people, for example, to over-consume high calorie, low nutritional value food, to become too sedentary and not take enough exercise, to make poor choices around their sexual health and wellbeing, and to use a range of substances - alcohol and other drugs - as self-medication to cope with the stresses and disappointments of life. By taking an explicitly public health approach we would focus on creating an environment where the healthy choice is the easy choice - whether that is in the food, alcohol and other drugs we consume, the relationships and mental resilience we develop, our sexual behaviour, accessing good housing and healthy, fulfilling employment, or the extent to which we are physically active. All of that is possible, but it will only happen if there is public, professional and political support.

Please let me know what you think.

As always, I am very grateful to a range of colleagues in my directorate and in partner organisations for the quality of the content and the impact of the work described. I am constantly aware how fortunate I am - and how fortunate Tayside is - to have such a high calibre of professional expertise available to us in tackling the public health and health equity challenges we face. My thanks go to Lesley Marley, Directorate Manager, Public Health, who has commissioned and coordinated this Report on my behalf. I would also wish to acknowledge Alistair McGillivray, Graphic Designer, who has designed and produced this year's Report.

Dr Drew Walker
Director of Public Health
June 2017

Recommendations Update

Below is a brief update on the work undertaken in 2016/17 to fulfill the recommendations from our topics in last year's Report, 2015/16

Early Years, Children and Young People

Evidence demonstrates the importance of prevention, early identification and intervention throughout the early years of life. We will:

Secure national support to progress Suit of Summaries (SOS) will be sought in 2016/17.

This was developed to a level where it can be held in abeyance until funds can be identified for it to be developed nationally.

Develop further the work to support improving outcomes in young people's mental health and emotional wellbeing.

The Early Years and Young People Team (EYYPT) remains engaged in the Child and Adolescent Mental Health Service (CAMHS) Mental Health Innovation Fund Project Advisory Group, working collaboratively with partners to support the progress of key areas within the project plan. The EYYPT has worked with the project team by supporting communication between CAMHS and the education departments in the three local authorities and providing advice and expertise as appropriate.

Develop further opportunities for young people participating in the A Stop Smoking in Schools Trial (ASSIST) programme to take forward health issues identified in their school and wider community.

Delivery of the ASSIST programme continues in Tayside secondary schools, and young people are encouraged routinely to continue to apply their learning to other health issues relevant to their school and wider community. As well as promoting remaining smoke free to their peers, young people have also indentified other health related concerns as a focus for further work, and have been supported by the wider EYYPT to extend their learning and the learning of others. Young people have further disseminated their knowledge at parents' evenings, health drop-ins and school assemblies. In 2016 ASSIST was delivered in 25 of the 26 local authority secondary schools in Tayside. The final year of the three-year pilot was completed on target in 2017. 'Process Evaluation Report of Implementation of ASSIST in Scotland' was published by Scottish Government in March 2017. http://www.gov.scot/Resource/0051/00515634.pdf

Work with partners, including education and other local authority services and local communities to agree and embed the smoke free homes initiatives and awareness of the issue of second hand smoke into ongoing work. We will also develop further opportunities to support individuals and families to make their homes smoke free.

Working in partnership with 'Shaper/Caper', the EYYPT has incorporated specific learning activities into the 'Well Good' one-day smoking and health workshops for children in Primary Six or Seven. The team has also built-in learning into the Storytelling Project which is currently being developed for engagement with children in Primary Five and Primary Two throughout Tayside and possibly beyond. Work to develop a specific secondhand smoke training session for colleagues working with children in early years' settings is ongoing and will be offered to schools as a test of change in the next academic year, 2017/18.

Identify further opportunities to develop cessation support for young people who have started smoking and want to stop.

Work within the EYYPT has focused on updating the current cessation support materials used to assist young people who express a desire to stop smoking. To ensure sustainability, multi-agency colleagues have been offered training to enable them to support young people giving up smoking.

Screening

Specialist public health involvement focuses on ensuring that the conditions required for successful screening are met operationally.

The national screening programmes will remain a priority for NHS Tayside in 2016/17. Maintain and where possible improve the uptake of screening programmes, especially in our more deprived communities.

Cervical screening uptake has been declining nationally. Scottish Government launched a national campaign in February 2017 to promote awareness of cervical screening and is supporting work locally to promote uptake, especially in young people in our more deprived communities.

In March 2017, the NHS Board Chief Executives approved a business case which will see cervical screening transition to primary high-risk human papilloma virus (hr-HPV) testing in future. Primary hr-HPV testing of the smear will be a more effective way to advise women whether they have any risk of developing cervical cancer.

Uptake in abdominal aortic aneurysm (AAA) screening has increased following a reconfiguration of services. Sixteen local screening sites in Tayside and six in Fife were consolidated into four sites in Fife and four in Tayside. The percentage of men attending screening clinics in the areas where sites were consolidated increased by 7.9%. The change in the service delivery model also resulted in a more efficient service, reduced screening risk and improved patient experience.

A new IT system to support diabetic retinopathy screening has been implemented recently.

Smoking

Smoking remains a major influence on ill health. Tobacco use is strongly associated with excess mortality and morbidity and is also a major influence on health inequalities and poverty. Reducing the harms created by tobacco use also means changing public opinion and working to de-normalise its use. To achieve this it was recommended that:

We work with local authority partners to identify opportunities to protect children and young people from the harms of tobacco smoke.

Work has continued in 2016/17 to provide incentives to pregnant smokers to encourage cessation. A consultation with cessation service users was carried out across Tayside; the majority of dients that responded were happy with services but provided suggestions as to developments that may increase uptake in communities.

Local authorities have worked with NHS Tayside to review and update their smoking policies for foster care and adoption placements.

We review our policies and practices to identify areas in which a harm reduction approach can be used to minimize the health problems caused by tobacco.

In line with the Tayside Tobacco Plan the smoking policies within statutory organisations in Tayside are being reviewed. This will enable these major employers in Tayside to give the same message i.e. that the provision of smoke free buildings and grounds contributes significantly to the health of employees and service users.

Training has been delivered to 25% of the mental health workforce in Tayside to enable them to support clients to be smoke free before and during a hospital admission. Two pilot wards have made this transition and have identified improvements in patients' health - particularly in weight reduction, increased physical activity and reduction in medication levels. The mental health service in Tayside will be smoke free from October 2017.

In October 2016 a law prohibited smoking in cars containing a person under the age of 18. Work with partners in within schools and nurseries to raise awareness is ongoing.

We identify ways in which we can make tobacco less available and a less desirable choice. We will work with partners to reduce the number of opportunities that people have to smoke tobacco and we will strive to create opportunities for smokers to choose healthier options.

The publication of the Health (Tobacco, Nicotine etc. and Care) (Scotland) Act 2016 has enabled us to work with partners to tighten controls around the sale of nicotine vapour products. To protect young people, restrictions on advertising will follow. The Act will allow us to look at the provision and overprovision of tobacco and work within communities to reduce access to tobacco and to promote external smoke free areas.

Physical Activity

We know that regular physical activity of at least moderate intensity provides general health benefits across a range of diseases and across all ages. We will:

Provide leadership for physical activity in health and social care integration.

Physical activity leadership event was held. As a result of good practice, Tayside was chosen as a national improvement site for the second 'test of change' for the application of a methodology that aims to promote a culture that makes physical activity a strategic priority. The presentations from Scottish Government as well as national and local speakers put into context the compelling evidence for change. The commitments generated were:

- *Physical activity should be a core component in planning structures in population health improvement.*
- *Consider all partners in how we deliver physical activity e.g. transport and leisure, Social Enterprise Network, private sector and public sector, third sector.*
- *Consider a physical activity discretionary budget targeted to increase action to the 20% least active in the population.*
- *Active Workforce/Active Travel; improve our active infrastructure - people and place.*
- *Communicate better physical activity messages/awareness within health promotion training for health and care staff.*

These commitments fall into three themes; environment, policy and workforce. The local Physical Activity Strategic Partnerships are now responsible for both developing tangible actions from the corporate commitments and leading on implementation. The proposal is to roll-out the learning across Scotland.

Via Healthy Working Lives (HWL) and Health Promoting Health Service (HPHS), embed the benefits of physical activity/active travel in workforce development to create an active health and social care workplace.

In 2016/17 the HWL programme has continued to encourage employees to be more physically active and travel more actively. Initiatives included; the annual virtual step count challenge, summer walks and healthy picnics, Join Us In July - walking a mile a day and the Swim the Tay Challenge at the Ninewells swimming pool. Travel smarter events and promotions at hospital sites provided sustainable travel information in partnership with local authorities and TACTRAN e.g. European Car Free Day, Cycle to Work Day, National Liftshare Week, the SUSTRANS Workplace Journey Challenge and the promotion of the workplace pool bikes and cycle skills training provided by a volunteer staff member. The Cycle to Work scheme was facilitated by the procurement department.

Small grants have been made available through the HWL programme to support staff-led physical activity initiatives at community hospitals and other sites.

The 2016 HWL Employee Wellbeing Survey indicated that 64% of 625 respondents were active at a moderate intensity level for 30 minutes or more each day. This is an increase on previous reported levels, however, work is still required and will be ongoing.

As part of a national improvement programme, Perth and Kinross Health and Social Care Partnership focused on enabling older people using care services to be less sedentary. Several local events will take place to bring people together to learn and share.

In Angus, care home residents are benefiting from a new activity programme called Video Active which broadcasts chair-based activity classes from local sports centers to care homes. This is available through the joint partnership of Angus Alive and Angus Health and Social Care Partnership

Work to maximize the use of NHS/local authority green space for physical activity.

Dundee has a wide range of nature based health promotion initiatives and nature based interventions which contribute to local health priorities and targets. The Directorate of Public Health is collaborating with local partners, communities and Scottish Natural Heritage to create the conditions for a Local Green Health Partnership. Nationally, the Scottish Government is encouraging development of these partnerships to mainstream approaches to increase physical activity and improve mental health through engagement with the natural environment.

In NHS Tayside many of our outdoor spaces are being utilised as an important healthcare resource. Joint funding from the Community Innovation Fund and Forestry Commission Scotland has resulted in the completion of a Leaf Room in Ninewells Hospital Community Garden. The Leaf Room is well used but would be enhanced by the installation of electricity, water and toilet facilities; discussions are progressing with NHS Tayside. Other gardens are now established on or near hospital sites and are flourishing through the dedication of volunteers.

In 2016/17 additional Ramblers Scotland Medal Route Hubs at Perth Royal Infirmary and Murray Royal Hospital were created. These routes provide a focus for walking at these sites. Cycling Scotland Cycle Friendly Employer Awards have been attained for the Perth Royal Infirmary and King's Cross sites.

In NHS Tayside 28 teams took part in the MacMillan Step Count Challenge. The Ninewells Intensive Care Team achieved top place in Scotland.

In Tayside the physical activity partnerships are working with the third sector to reduce inactivity. The wellbeing teams in leisure trusts are using the medium of sport and physical activity to improve the quality of life for a number of targeted groups - a priority area is to support people with long-term conditions to increase their levels of physical activity and to support families to be active together.

Therapeutic Nutrition

For Coeliac Disease:

The Scottish Government plans to develop a national Coeliac Disease Clinical Pathway. This work will be led by a member of Tayside Nutrition during 2016/17 as part of the Developing Out-patient Integration Together (DOIT) Programme (Scottish Government). A review of the local pathway is already underway which will feed into the national work. Once finalised, the national Coeliac Disease Clinical Pathway will be incorporated into the NHS Tayside local pathway.

NHS Tayside is one of four NHS Boards in Scotland to be allocated additional funding to test the new Scottish Coeliac Disease Clinical Pathway. This will see increased investment in nutrition and dietetics and the implementation of new technology enabled care tools to better support people to manage their condition themselves.

For Renal Disease:

Consider and understand better the demographics of the renal population of Tayside and identify health inequalities.

Work continues to better understand and identify health inequalities relating to nutritional care for renal patients in Tayside. Inequalities in clinical service delivery were identified for patients receiving haemodialysis.

Hold a stakeholder event to explore co-producing and developing nutritional care pathways for nutritional support (food first, oral supplements and enteral tube feeding); weight management; healthy eating; phosphate restriction; potassium restriction; sodium restriction; fluid management and diabetes.

A stakeholder event has not been held but work is underway with the development of nutritional care pathways specifically looking at phosphate, potassium, sodium and fluid management. This began with the development of first line intervention information aimed at patients attending 'low clearance' clinics. Consultation is underway with stakeholders and patient feedback is being sought via patient representative groups such as the Tayside Kidney Patients' Association and the Patient Liaison Committee.

Weight management has been identified as an area for pathway development with an initial focus on pre-transplant patients. We are liaising with the Adult Weight Management Service with a view to adapting its programme to make it suitable for adults with renal conditions.

Identify health inequalities in nutritional care and work with key stakeholders to use targeted approaches to reduce them.

Inequalities in clinical service delivery for patients receiving haemodialysis has been addressed with the establishment of regular sessions at renal units throughout Tayside.

Scope further self-care and secondary prevention and consider the use of emerging information technologies such as Smart Phone Apps, internet and webcasts to support patients and staff to improve nutritional care.

Renal dietitians plan to trial the use of teleheath for nutritional support patients using the 'Florence' text messaging system. It is hoped that this approach can also be used to help individuals to manage their phosphate restriction.

For Cows' Milk Allergy (CMA):

Design an update session for health visitors in response to a follow-up survey which assessed the impact and changes in practice. Apply improvement methodologies to the referral pathway for children with CMA from primary to secondary care and make recommendations. Work with stakeholders to identify and reduce health inequalities in the management of CMA.

The planned health visitor update sessions on the CMA pathway did not progress due to a lack of staff availability; therefore, we have been unable to review implementation of the pathway. Despite this, introductory training continued to be delivered to health visiting staff on the diagnosis, management and treatment of colic, reflux, constipation and mild to moderate non IgE mediated CMA. Continuous improvement activities have been undertaken to inform further developments such as a review of specialist milk spending and group weaning education sessions for CMA.

Recommendations from this year's Report

Below are the recommendations from our topics in this year's Report. They feature in our 2017/18 work plans and progress will be updated in my next Report

Health Protection

Priority theme	Specific topics	Recommendations for 2017/18
Blood borne viruses	Hep B vaccination for exposed and at-risk babies	Establish electronic call/recall system
		Agree robust multi-disciplinary pathway for identification and follow-up of eligible patients
	Prevention for high-risk/vulnerable groups	Develop strategies to inform and reduce risks associated with 'chemsex', commercial sex work, and injecting drugs
Immunisation programmes	Scottish Vaccination Transformation Programme	Lead three year wholesale reorganisation of services in line with national programme
	IT/records systems (e.g. GP, hospital, child health etc)	Advocacy for national renewal of electronic systems so that they inter-connect
		Develop more efficient local interim solutions to multiple recording/data entry
		Pursue full access to immunisation call/recall system for Health Protection Team admin. staff
	Unscheduled/catch-up vaccinations	Clarify responsibilities of Immunisations service/GPs/others and streamline pathways
	Staff education and training	Develop regular comprehensive training and update programmes for immunisers
	Accessibility and uptake	Work with services delivering staff flu, pregnancy and other programmes to enhance awareness and accessibility
Gastrointestinal infections	E. coli	Revise protocols to ensure consistency in where, when and how exclusion is required
		Streamline financial compensation for those excluded so vulnerable individuals and families are not disadvantaged
	Multiplex Polymerase Chain Reaction (PCR) testing	Management of anticipated increase in workload from more sensitive testing
		Resolve management of asymptomatic chronic carriers in whom clearance difficult
	Lyme disease	Engage with national public information and management development work
	Campylobacter	Commonest single pathogen notified in Scotland - participate in national epidemiological study
Environment	Air pollution	Responding to national initiatives to identify and remediate high emissions areas
	Lead in water	Implementation of new quality standards including in schools and childcare facilities
Tuberculosis (TB)	National TB Framework	Develop and implement strategies for screening and detection of latent TB in new entrant and other high-risk groups
		Increase screening accessibility by extending to peripheral sites
Health Protection Team management	Resilience	Identify and train nurses from wider work-force to provide health protection nursing team resilience
	Administration capacity	Explore opportunities to re-direct staff time
		Formalise documentation in electronic systems when using staff resilience
	Out-of-Hours	Engage with national project evaluating arrangements, including mutual aid options
	Action cards (administration team)	Ensure continuous review and update
	Team development	Ongoing review and update of mandatory training requirements
		Develop team induction programme

Halting the Obesity Epidemic

We will do all that we can to make sure obesity becomes an explicit priority at strategic and delivery levels for NHS Tayside and local authorities.

We will engage with external partners to integrate support and provide sustainable preventative and treatment services based on the following outcomes:

- Access to a free-of-charge 12-week Weight Watchers© programme is extended to women of childbearing age.
- UK Baby Friendly accreditation is achieved as a minimum standard by NHS Tayside.
- There is a robust analysis of the necessary steps for healthy eating and physical activity for children, young people and families that address obesity prevention.
- Vulnerable families continue to be assisted to develop fundamental food skills and access affordable healthy food.
- NHS Tayside's Nutrition and Dietetic service supports partners in activities that prevent and control obesity.
- An improved adult weight management service tier 3 programme is implemented.
- Obesity prevention and control strategies in the workplace are developed and implemented.
- A standardised framework supporting high-quality, consistent evaluation of obesity prevention and treatment is developed.
- The principles of co-production and asset based approaches continue to be applied to the design and delivery of all obesity prevention and treatment approaches.

In addition to the above we will work with partners to identify opportunities to create leptogenic environments whereby physical activity and the consumption of healthy food and drinks are easy, affordable and widely accepted, making a healthy lifestyle the default option.

Realistic Medicine

Across NHS Tayside we have programmes in place that are embracing the challenge set by Realistic Medicine. The programmes all encourage patient-centred care and a shift in our ways of working to consider more proactive responses to the needs of our communities.

In 2017/18 we recommend an increase in the availability of these resources across Tayside to begin to shift care upstream and meet people's needs in a sustainable way e.g.

- The Equally Well programme in Dundee has been established to address some of the personal and socio-economic circumstances that impact on people's health and wellbeing that primary care have neither the time nor sometimes skills to address. Link Workers work across four general practioner (GP) practices to address these unmet needs and support people to make the necessary lifestyle changes to invest in their future health. Investing in social prescribing gives alternates to medical prescribing and when medical intervention and treatment are necessary then it can build resilience, enabling people to cope with the required burden and in turn improve disease control.

- The Enhanced Community Support model (ECS) trialled in South Angus and Perth and Kinross for the care of frail elderly patients is a good example of shifting care upstream. This model of care recognises that older people should have access to proactive care in response to escalating health and social care requirements in the community, relevant to the needs of the person and hence increase the patient's resilience and ability to cope in their own home.

- The Area Drugs and Therapeutics Collaborative hosted by Healthcare Improvement Scotland has developed materials for patients to help them to understand what the right treatment is for them as an individual. The leaflet entitled 'Medicines in Scotland: What's the right treatment for me?' is a valuable resource to begin a conversation with the patient to enable them to work with their doctor or other health care professional to understand their treatment options and how to gain the greatest benefit from treatment.

Sexual Health and Blood Borne Viruses

Delivering a comprehensive and integrated tiered approach to primary prevention.

- Appropriate hepatitis B (HBV) vaccination coverage and uptake, in particular for people who inject drugs (PWIDs)
- Sustained action to reduce teenage pregnancy and securing effective leadership and local engagement for the Scottish Government's Pregnancy, Parenthood, and Young People (PPYP) strategy
- Inclusive Relationships, Sexual Health and Parenthood Education (RSHP), underpinned by standards and performance indicators
- Improved awareness among young men who have sex with men (MSM) of the risks of human immunodeficiency virus (HIV)
- Improving availability and uptake of long acting reversible contraception (LARC)

- Strengthening partnership with Alcohol and Drug Partnerships (ADPs) and addictions services to ensure effective prevention programmes and increase access to harm reduction, injecting equipment provision (IEP) and Opiate Substituition Therapy (OST)
- Ensuring effective partnerships with Community Planning Partnerships (CPPs), in particular Integrated Children's Services
- Work with individuals, communities and the media to reduce stigma and discrimination associated with poor sexual health and blood borne viruses (BBVs).

Reducing undiagnosed population

- Reducing undiagnosed HIV and late diagnosis Implementing effective hepatitis C (HCV) case-finding and eradication strategies.

Targeted behaviour change interventions

- Design and delivery of behaviour change interventions for high-risk behaviours, including increased engagement of women who inject drugs with sexual and reproductive health.

Effective delivery of care and treatment

- Implement Pre Exposure Prophylaxis (PrEP) for prevention of HIV in 2017 as part of a comprehensive, combination approach to HIV prevention
- Support the introduction of human papilloma virus (HPV) vaccination in MSM in 2017
- Work with prison healthcare to make sure people in custody have equitable access to testing, treatment and care
- Ensure access to adequate resources for treatment to meet the aims of the HCV elimination strategy Review provision for people ageing with HIV.

Substance Use

In order to deliver public health improvements within current resource constraints there needs to be a strategic shift from treatment and care towards prevention and early intervention.

Priority areas will include:

- Reducing health inequalities
- Focusing on prevention and early intervention
- Increasing prevention interventions targeting children at risk of early initiation into substance misuse
- Involving communities to co-produce change

Angus (ADP) is leading a review and redesign of current service provision to strengthen and enhance experience of people/families with alcohol/drugs and/or mental health problems focusing on a whole family approach model. The pilot phase demonstrated successful change and as a result the whole family approach model is in the process of being embedded more widely across services in Angus.

Dundee ADP and Integration Joint Board (IJB) are in the process of developing an 'Integrated Alcohol and Drug Services - Strategic and Commissioning Plan (2017-2020)' that sets out the strategic priorities and guides the delivery of a transformational improvement programme across the city. Produced to provide clear direction for services this plan will drive forward, inform and enhance the already well-established partnership approach to achieving better outcomes for people who need alcohol and drug services.

Reducing alcohol availability

The NHS Tayside Directorate of Public Health will be working closely with the newly formed Licensing Boards to provide the information and evidence required to inform the development of overprovision policy statements over the next 18 months.

A vision for the future

Tayside will progressively be a region where healthy and responsible attitudes to alcohol and other drugs prevail. Increasingly, prevention needs to become a key focus for joined-up, evidence-informed and accessible services which are designed and delivered as an equal partnership between the public, a range of organisations and professionals. The outcomes being sought should more and more be those which are important to the individuals and communities as well as the professionals. Progress needs to be monitored carefully using quantitative and qualitative information from as many sources as possible.

Population Profile Tayside

Population

Demographics

The demography of a population is an important factor in tackling health issues. Many illnesses, conditions and health related behaviours are associated with age, gender or other demographic characteristics. An awareness of population distributions and attributes helps identify those likely to experience health inequalities.

The estimated population of Tayside on 30th June 2016 was 415,470, an increase of 430 (0.1%) from 2015. Similar in proportions to previous years, 48.6% of the population were males and 51.4% females.

Tayside's population is distributed across three local authority areas, in 2016 there were 116,520 residents (28.0% of the Tayside population) in Angus, 148,270 in Dundee (35.7%) and 150,680 in Perth and Kinross (36.3%). Chart 1 displays the age structure of the Tayside population and its three local authority areas for 2016.

The proportions in each age category across the three local authority areas are relatively similar. However, Dundee City has a higher proportion of the population who are of working age and a lower proportion of those who are pensionable in comparison to its Tayside counterparts.

Many illnesses, conditions and health related behaviours are associated with age, gender or other demographic characteristics

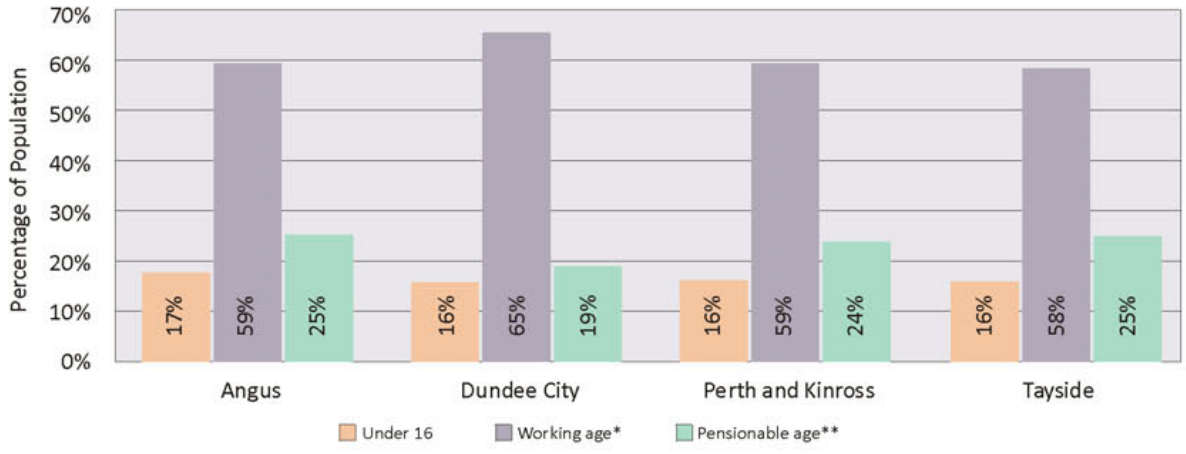
Minority Ethnic Population

The 2011 Census reported that 3.2% (13,111 individuals) of the Tayside population were of non-white ethnicity. This varied across the region with the corresponding proportions in Angus, Dundee City and Perth and Kinross being 1.3%, 6.0% and 2.1% respectively.

Life Expectancy

Life expectancy at birth is the average number of years a newborn infant can expect to live if current mortality rates continue to apply. Life expectancy at birth has increased over the last decade across Tayside residents by 2.8 years in males and 2.2 years in females[1]. Chart 2 summarises the current life expectancy estimates (2012-2015 based) for Tayside's three local authorities.

Chart 1: Age structure of the Tayside resident population - June 30, 2016



Source: National Records of Scotland (NRS) Mid Year Populations Estimates (MYPE), June 30th 2016
Notes: *Working age at 30 June 2016 was defined as men aged 16 to 64 and women aged 16 to approximately 62 years and 237 days
**Pensionable age at 30 June 2016 was 65 for men and approximately 62 years and 238 days for women

[1] 2003-2005 based life expectancy for Tayside males 75.0 years and females 79.4 years
[2] SIMD_2016 current version is based on 2011 Data Zone, direct comparisons with previous SIMDs is not possible

Chart 2: Tayside residents' life expectancy at birth by gender - 2013-2015 based

Source: National Records of Scotland (NRS) - Life Expectancy Tables

The current life expectancy across Scotland is 77.1 years for males and 81.1 years for females. Dundee City life expectancy figures are lower than both Scottish averages; these are also the lowest life expectation of the three Tayside local authority areas for both genders. In comparison, those living in Perth and Kinross are expected to live the longest of all Tayside residents (both genders).

Deprivation

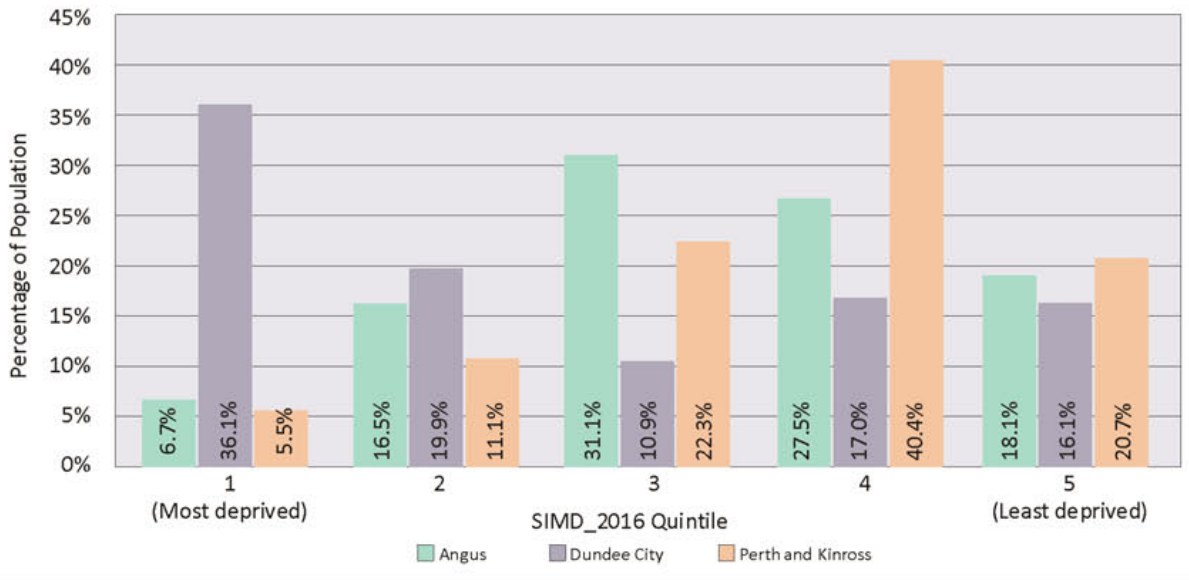
The Scottish Index of Multiple Deprivation (SIMD)[2] is an area-based measure of deprivation, identifying small area concentrations of multiple deprivation in a comparative manner. It combines the domains of income, employment, health, education, skills and training, housing, geographic access and crime, based on a ranking system from most to least deprived. These ranks can be grouped into quintiles.

In a standard population, 20% of the population would be expected to live within each quintile. Locally across Tayside there are large variations between the differing levels of deprivation. Chart 3 below displays the population proportions residing in each deprivation quintile for all three of the local authority areas.

As shown in Chart 3, in 2015 Dundee City had the greatest proportion of their residents living within the most deprived areas (SIMD Quintiles 1 and 2). In Quintile 1 (20% most deprived) 36.1% of the Dundee City population resided here, more than five times when compared to its Tayside counterparts within this quintile.

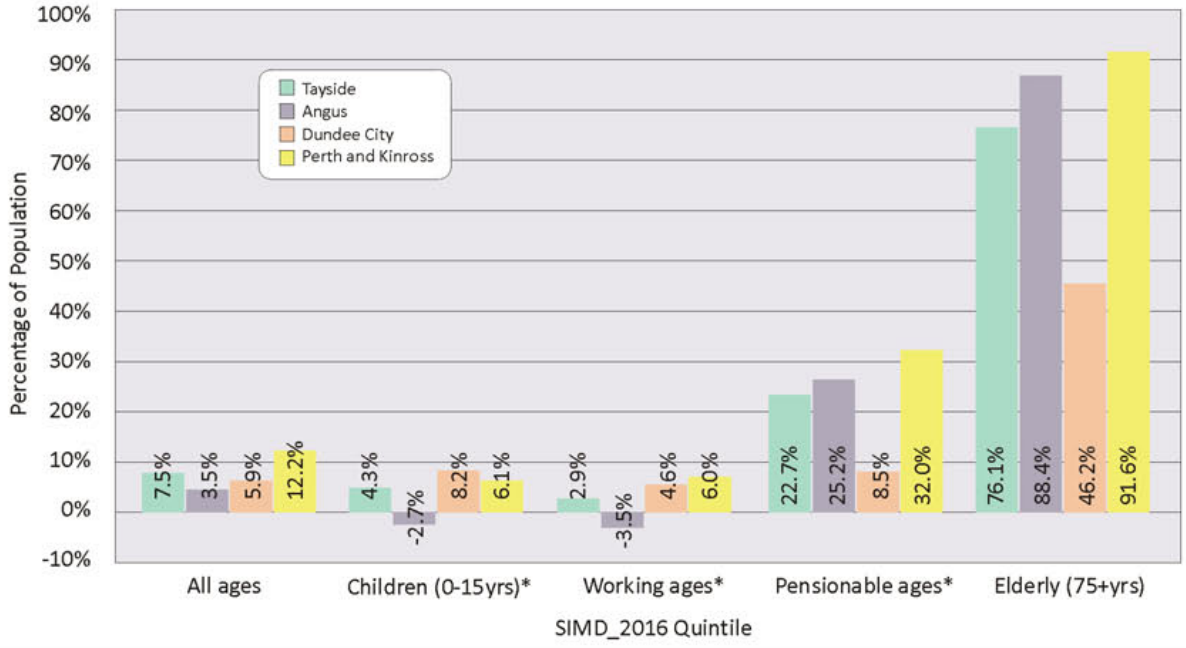
In comparison, the Perth and Kinross area recorded the highest proportion of their population residing in the least deprived areas (SIMD Quintiles 4 and 5).

Chart 3: Percentage of Tayside resident 2015 mid-year population estimate by SIMD_2016 Quintile



Source: SAPE 2015 (based on data zones 2011) via National Records of Scotland (NRS) and SIMD_2016 via Scottish Government

Chart 4: Tayside projected population changes by age group (all persons), 2014 and 2039



Notes: * Children under 16, working age and pensionable age populations based on state pension age (SPA) for a given year. Working age and pensionable age are over estimated from SPA. As set out in the 2014 Pensions Act, between 2014 and 2018, state pension age will rise from 62 to 65 for women. Then between 2019 and 2020, it will rise from 65 years to 66 years for both men and women. A further rise in state pension age to 67 will take place between 2026 and 2028. Between 2044 and 2046, state pension age will increase from 67 to 68. The UK Government plan to review state pension age every five years in line with life expectancy and other factors.
Source: National Records of Scotland (NRS) Projected Population Report - 2014 population estimate based

Population Projections

The total Tayside population is projected to increase by 7.5% (N=444,763) by 2039 (2014 population estimate based). Displayed in Chart 4 are the projected changes in the Tayside population, showing the variations in the differing age groups across the three local authority areas.

Perth and Kinross is expected to represent the largest projected population change by 2039, an increase of 12.2% (N=167,087) from the baseline estimate of 2014.[3] The other two local authority areas are also projected to increase in total population by 2039: Angus is projected to increase in population by 3.5% (N=120,799), with a 5.9% increase across Dundee City (N=156,877).

As shown in Chart 4, of those age groups encompassed within the population of Tayside, those of pensionable age, and especially those aged 75+ years, are projected to display the greatest increase in population size by 2039 from the 2014 baseline estimate.[4] Over the next 25 years, the most elderly age band, those aged 85+ years, is projected to increase by 128.7%.[5] Of Tayside's three local authority areas, both Angus and Perth and Kinross are predicted to show the greatest increases in these elderly age groups. With intervening factors over the forthcoming years that may impact on the accuracy of these estimates, population projections should be viewed with some caution. However, the potential population increase does require some consideration for any future planning of services and resources.

Births

In 2015 there were 3,977 live births in Tayside[6], a rate of 51.7 per 1,000 females aged 15-44 years. While this may simply be a natural annual fluctuation, the rate does represent a minor reduction in births from the previous year (2014=54.6) and the lowest in the last decade.

[3] Estimates (All Ages) Angus = 116,740, Dundee City = 148,130, Perth and Kinross = 148,930

[4] 75+ years Tayside Pop; 2014 = 39,028 compared with 2039 = 68,728, an increase of 29,700 persons

[5] 85+ years Tayside Pop; 2014 = 10,908 (2.6% of total Tayside Pop) compared with 2039 = 24,944 (5.6% of total Tayside Pop)

[6] Based on Tayside Health Board of Residence (based on board boundaries 01/04/14), regardless of location of birth

Across Tayside, 26.8% of births were to mothers in Angus, 39.1% were to mothers in Dundee City and 34.1% to mothers in Perth and Kinross. This resulted in live birth rates of 54.7, 47.8 and 54.4 per 1000 females in Angus, Dundee City and Perth and Kinross respectively in 2015. These rates represent a slight decline in Angus and Dundee City compared to the previous year. However, they do not represent a significant change in Perth and Kinross between 2014 and 2015.[7,8]

In more recent years the rate of live Tayside births has shown a decline

There is a slight decline in figures when comparing the live birth rates (per 1,000 females aged 15-44 years) for Tayside mothers between 2005 (rate=52.7)and 2015 (rate=51.7) As presented in Chart 5, across all localities including Scotland, there was an initial general increase in the first half of the decade, while in more recent years the rate of live Tayside births has shown a decline, reflecting similar rates to those at the start of the decade.

Taking into consideration these fluctuations over the decade, both Angus and Dundee City have recorded a slight reduction in their live birth rate between 2005 and 2015, while Perth and Kinross has changed very little over this period.[9]

Ill health

Many patterns of diseases and conditions demonstrate inequalities between genders, age groups or geographical areas.

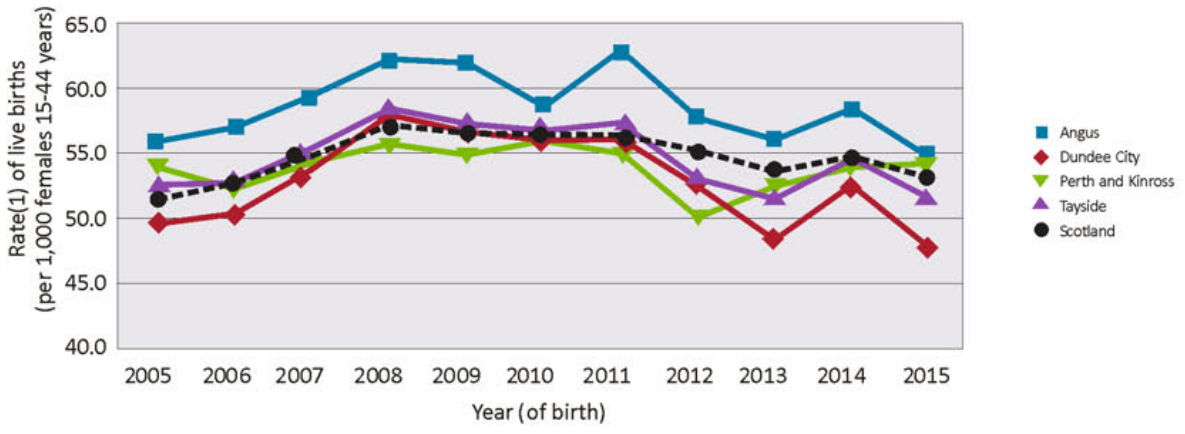
It is estimated that one in four adults (aged 16+ years) report some form of long term condition (LTC) and by the age of 65 nearly two thirds will have developed a LTC. Examples of common LTCs include diabetes mellitus, asthma and chronic obstructive pulmonary disease (COPD). Some people will need to be hospitalised at some point (either as an emergency or elective) as a result of their LTC.

Chart 6 on the following page compares the age standardised rates in 2011/12 and 2015/16 for those Tayside residents aged under 75 years who were discharged from hospital with a diagnosis of diabetes mellitus, COPD, coronary heart disease (CHD) and asthma.

The chart also shows the rate of cancer registrations for the calendar years 2011 and 2015.

Dundee City has higher rates than either Angus or Perth and Kinross in all of the conditions examined. Although CHD hospital discharge rates are the highest of the conditions considered, they have decreased over time while rates for diabetes, cancer registrations, COPD and asthma have predominantly increased.

Chart 5: Rate of live births by mothers area of residence - 2005-2015



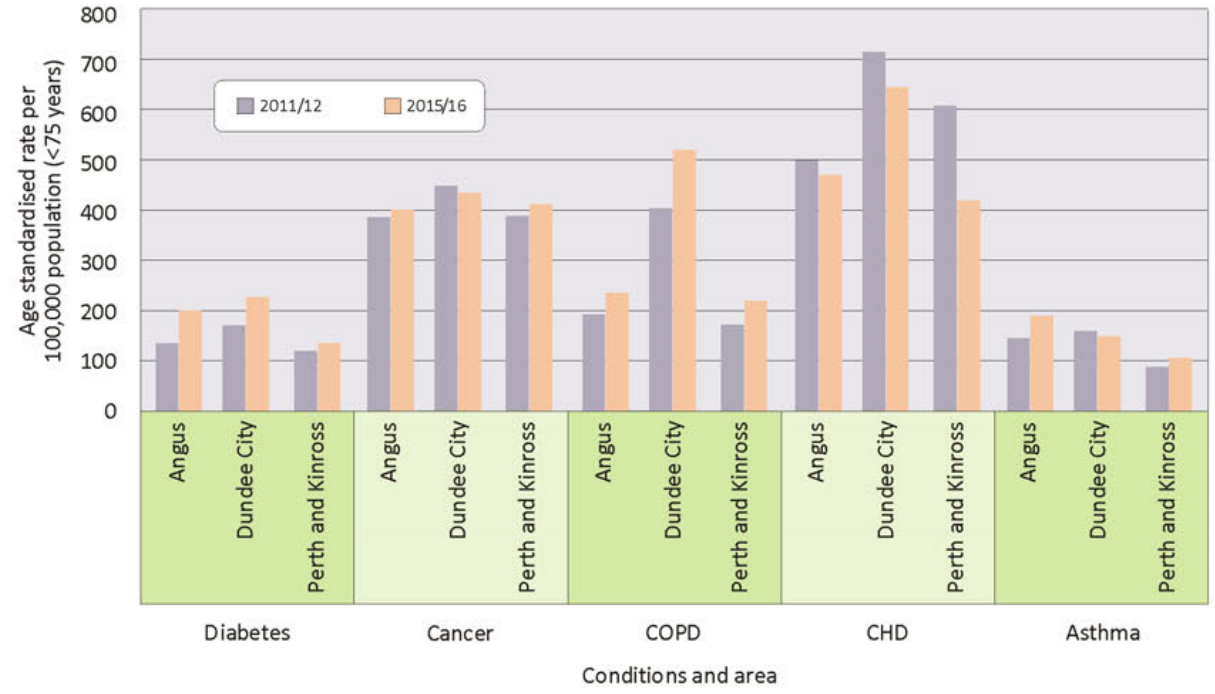
Source: National Records of Scotland (NRS) - Vital Events Birth Table 3.14
Note: 1. Rate per 1000 females aged 15-44 years (Calculated by NRS)

[7] 2014 Live Birth Rates: Angus - 58.4; Dundee - 52.6; Perth and Kinross - 54.1

[8] Perth and Kinross Live Births Rates: 54.1 (2014) and 54.4 (2015)

[9] Rates: Angus 55.9 (2005) and 54.7 (2015); Dundee 49.5 (2005) and 47.8 (2015); Perth and Kinross 54.2 (2005) and 54.4 (2015)

Chart 6: Age standardised rates for those aged under 75 years for selected conditions across Tayside 2011/12 and 2015/16 (cancer registrations compare calendar years 2011 and 2015)



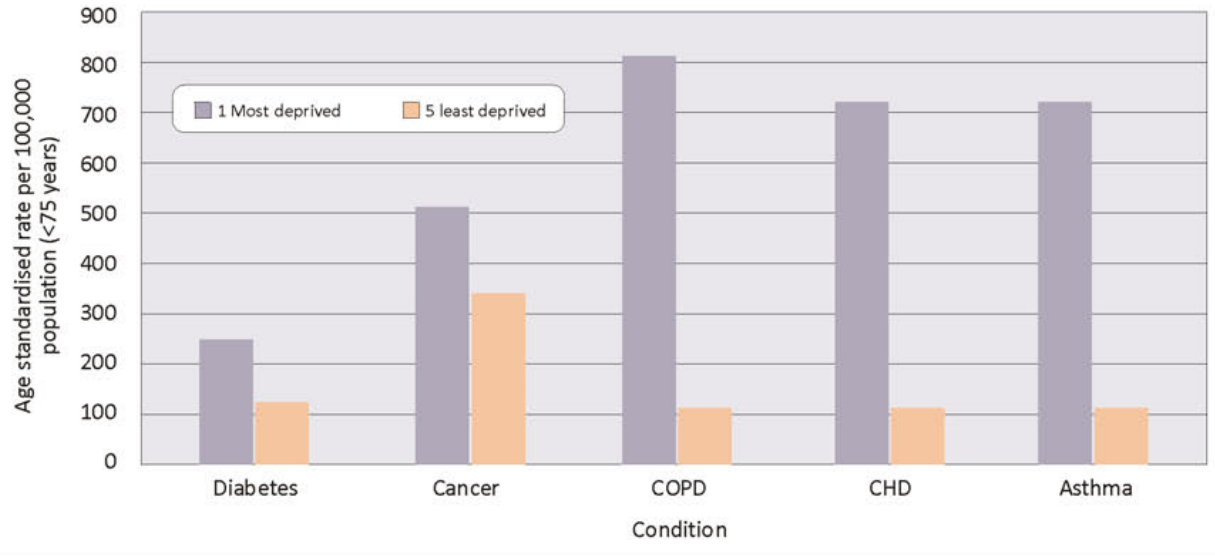
Notes: Diabetes mellitus defined by ICD10 codes E10-E14. Cancer defined by ICD10 codes C00-C96 excl C44. COPD defined by ICD10 codes J40-J44. CHD defined by ICD10 codes I20-I25. Asthma defined by ICD10 codes J45-J46. Source: SMR01, SMR06 and NRS

Chart 7 shows the clear inequality gradient that exists when the hospital discharge rates for these selected conditions for those aged under 75 are examined by deprivation. This is particularly evident for COPD where rates in the most deprived areas are eight times higher than those in the least deprived. This is likely to be associated with the historical differences in smoking rates when most and least deprived areas are compared.

Health risk behaviours

The health and wellbeing of the population is known to be influenced by a number of health risk behaviors. These include alcohol and drug misuse, poor diet and nutrition, lack of physical activity and tobacco use. Some of these topics are explored in more detail later in this year's Director of Public Health's Annual Report.

Chart 7: Comparison of age standardised rates for the most and least deprived areas in Tayside for selected conditions 2015/16 (2015 for cancer registrations)



Source: SMR01, SMR06, NRS and SG SIMD2016

Table 1: Various health risk behaviours in Tayside and Scotland		
Health risk behaviour	**Tayside**	**Scotland**
Smoking prevalence (adults aged 16+ years)	20.8%	20.2%
Estimated smoking attributable deaths (per 100,000 popn)	329.2	366
Alcohol related hospital stays (per 100,000 popn)	449.9	664.5
Deaths from alcohol conditions (per 100,000 popn)	21.9	22.1
Drug related hospital stays (per 100,000 popn)	142.0	133.6
Drug related deaths (per 100,000 popn)	16.4	13.5
Active travel to work	18.3%	15.7%
Source: ScotPHO Health and Wellbeing Profiles (Tayside)		

Table 1 summarises the prevalence or rate of selected health risk behaviours and compares Tayside with the national average for the most recent data available. While Tayside shows favourable rates compared to Scotland as a whole, there are strong links with deprivation for these indicators with Dundee City having much higher rates than the rest of Tayside.

Mental Health

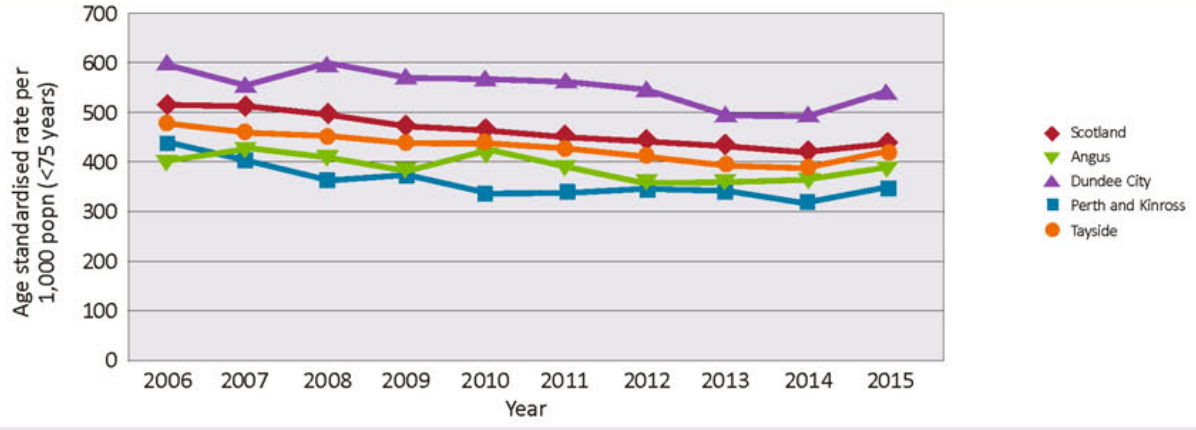
Over the last 10 years, age standardised rates of psychiatric hospitalisation have consistently been higher in Tayside than the national average. However, despite some fluctuations, the Tayside rates have decreased over time from 424.0 per 100,000 in 2002 to 342.6 per 100,000 population in 2014.

Rates of hospital discharge for those with a specific diagnosis of depression have also decreased over time. Prescribing data show that rates of prescribing of drugs for anxiety/depression/psychosis have risen over the last five years in Tayside from 16.3% of the population in 2012 to 18.3% in 2015. These prescribing rates are slightly higher than the national average (18.0%). This may mean that these conditions are being managed in the community.

With some fluctuations, the number of suicides in Tayside has reduced over time. On average between 2010 -2014, there were 51 deaths each year by intentional self-harm, an age standardised rate of 12.7 per 100,000 population; three quarters of these deaths were males.

Over the last 10 years, age standardised rates of psychiatric hospitalisation have consistently been higher in Tayside than the national average

Chart 8: Premature (<75 years) mortality in Tayside and Scotland - 2006-2015



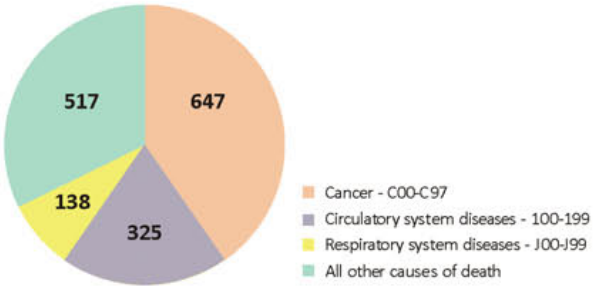
Source: National Records of Scotland (NRS)

Mortality

Death rates vary across age groups and different geographical areas. Premature mortality rates (those dying under the age of 75 years) are far higher in Dundee City than the rest of Tayside and indeed Scotland (see Chart 8). Overall, premature mortality rates have decreased since 2006 although there have been increases in the intervening years. Data from 2015 show the first increases in all areas of Tayside since 2006.

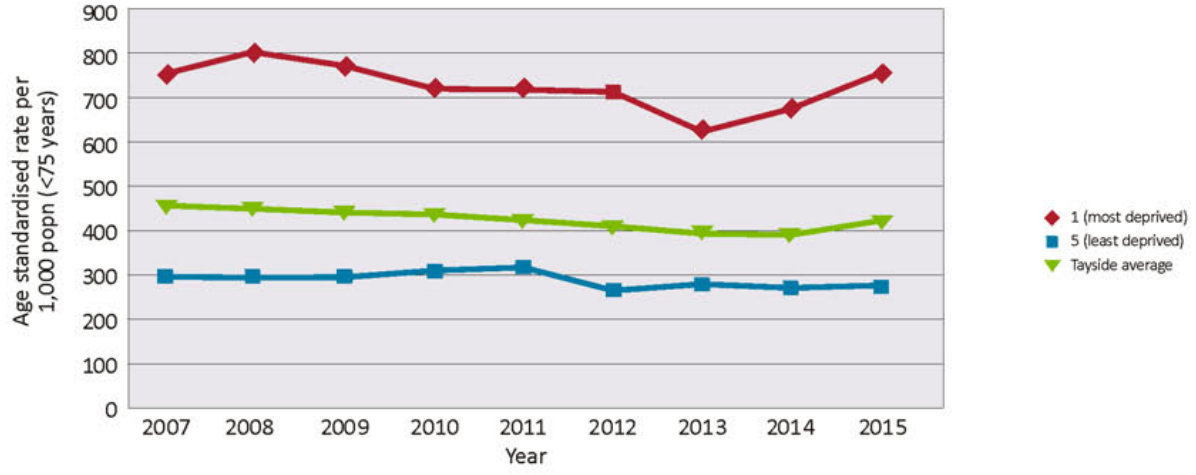
Cancer and diseases of the circulatory (includes CHD and stroke) and respiratory systems account for the majority (68.2%) of premature deaths across Scotland. Rates of these diseases have decreased over time up to 2015 with the exception of cancer which has increased to a peak in 2015. Tayside rates are lower than the Scottish average for each of these diseases, but there is large variation within Tayside with Dundee City having above average rates for each of these causes. Chart 9 shows the 1,627 premature deaths in Tayside by category of death.

Chart 9: Premature (<75 years) mortality by cause of death in Tayside - 2015



Analysis of premature death by deprivation shows a clear inequality gradient. Chart 10 compares the rate of the most and least deprived communities in Tayside with the average rate. In 2015, there was a widening of the gap between the most and least deprived quintiles due to an increase in rates in the most deprived areas being accompanied by a reduction in the least deprived rate.

Chart 10: Premature (<75 years) mortality in Tayside and Scotland - 2006-2015



Source: NRS and SG SIMD 2012 and SIMD 2016

Health Protection

The Health Protection Team's Function

The core health protection function relates to the statutory duties of NHS Boards to protect their populations from infectious diseases and environmental hazards. This is achieved through both reactive and strategic work carried out by the Health Protection Team (HPT) in preventing, monitoring, maintaining preparedness for, and responding to individual cases, outbreaks and other incidents. Additionally, the health protection function includes coordinating and providing technical expertise to immunisation programmes, and efforts to reduce the burden of infectious disease in the community.

The NHS Tayside Health Protection Team Vision

To take action and provide leadership, expert guidance and support to prevent and manage risks to the health of the public from infectious diseases and environmental hazards

There are three key elements in the delivery of the health protection function:

- Risk identification
- Risk management
- Risk communication

This basic model underpins the various activities and areas of work undertaken by the HPT daily, which in turn can be broken down into five broad themes:

- Surveillance, prevention and control of communicable diseases and environmental hazards.
- Provision of specialist advice and support to primary care, hospitals, and other relevant organisations such as care homes and nurseries, to support effective delivery locally of the core health protection purpose of prevention and control of infectious disease and environmental hazards.
- Investigation and management of a full range of health protection incidents (including single cases and outbreaks of diseases such as meningococcal meningitis, tuberculosis (TB), food poisoning, and environmental release of chemical, biological or radiological agent).
- Coordinating and contributing to planned, preventive programmes including routine and selective immunisations, emergency and resilience planning, and public information and education initiatives.
- The conduct of clinical audit, research and teaching, and contributing to and undertaking continuous professional development relating to health protection.

Topic areas within which these activities are undertaken include:

- Immunisation and vaccine preventable diseases
- Respiratory infections (including TB and pandemic influenza planning)
- Gastrointestinal and waterborne infections and zoonoses (diseases that can be transmitted from animals to humans)
- Blood borne viruses
- Infection control in non-NHS community settings
- Port health
- Environmental health
- Resilience planning

By its nature, the health protection function is subject to sporadic and often unpredictable challenges, with the potential for surges in demand inherent in the responsibility to respond to new and emergent incidents and public health threats. Thus a key priority is sustaining strategic resilience within the Directorate of Public Health to maintain the capacity necessary for effective management of outbreaks and public health incidents.

National and legislative context

The cornerstone of health protection practice is the Public Health etc. (Scotland) Act 2008,[8] which defines a comprehensive set of infectious agents, clinical illnesses and more general health risks that are notifiable and which medical professionals have a legal responsibility to inform health protection services of, with appropriate urgency.

Statutory duties and responsibilities set out in the 2008 Act include the surveillance and public health management of these notifiable diseases and organisms, and monitoring, control and management of environmental health hazards. The Act defines Competent

Persons for the delivery of functions in relation to premises (led by the local authorities) and persons (led by the NHS Board). Competent Persons have significant powers to require, or seek the Sherriff to enforce, restrictions on businesses and individuals, including closure of premises, exclusion from work or other settings, decontamination, and quarantine of individuals.

Supporting and directing Health Boards and local authorities in fulfilling their statutory and professional responsibilities are a range of national technical expert and oversight agencies, including Health Protection Scotland (HPS), Scottish Environmental Protection Agency (SEPA), water quality regulators, and resilience planning partnerships. In 2015, a Scottish Health Protection Network was established bringing together these territorial and national expert agencies in a national structure, with coordination, quality assurance and governance provided by HPS. This network liaises with UK and international counterparts in a joined up system of global disease surveillance and incident response.

In 2016/17, the HPT has participated in a new set of initiatives introduced by the Scottish Government towards establishing a new public health strategy for Scotland. This aims to achieve greater coordination of the wider public health workforce across the NHS and other sectors, and a 'Best for Scotland' approach to managing national services on a consistent, Scotland-wide basis. This has included a focus on a review of the delivery of the health protection function out-of-hours through on-call rota arrangements.

Health Protection challenges in Tayside

There are many similarities but also significant variations between local authority areas in key health protection risks and challenges, which are shaped by the physical and human geography of the Tayside area, and specific local demands and expectations.

Both Angus and Perth and Kinross are home to many rural communities, where working and residential environments are associated with exposure to farm and wild animals, soil and untreated water sources. Agricultural and rural exposure to environmental pathogens can result in a range of infectious diseases e.g., *Cryptosporidium*, *E. coli* O157, and Lyme disease, and significant potential exists for chemical and biological contamination of private water supplies.

Amongst the agricultural and other workers of Perth and Kinross and Angus there are a large number of migrant workers and travellers. The specific health needs of these groups include those associated with poor standards of accommodation, transient use of primary health care services, and imported infections. The standard of residential accommodation has been a concern, especially where caravans are used.

In contrast with the rest of Tayside, Dundee is a wholly urban area with a relatively high population density and high levels of deprivation. The city's large number of temporary residents includes students from across the UK and international locations. Infectious diseases common to other areas of the world can therefore present in temporary residents, with a good example being a small but significant number of cases of TB.

Dundee has the biggest percentage of flatted property per head of population in Scotland, which results in a wide range of environmental health problems. The city's industrial legacy means that there are many former industrial sites zoned for development. Screening for contaminated land with a view to remediation is a major environmental health function.

Amongst several large commercial gatherings and events across Tayside, Perth and Kinross hosts the largest annual music festival in Scotland, 'T in the Park', whose campsite facilities provide accommodation to an estimated 65,000 people over four days, with a concomitant risk of outbreaks of communicable disease. More generally, the thriving tourist industry of both Angus and Perth and Kinross results in many visitors to the area, who may develop infections typically associated with holiday populations e.g. norovirus.

The coastal location of Tayside carries particular significance for health protection

The coastal location of Tayside carries particular significance for health protection. Both Dundee's seaport and airport accommodate international traffic, while the harbour at Montrose, for example, is involved in ammonium sulphate storage. Port health issues are also relevant to Perth harbour.

There are a number of Control of Major Accident Hazards (COMAH) sites throughout Perth and Kinross, and Dundee has one lower tier COMAH site. A wastewater treatment works and Shell and BP Onshore Pipeline Systems are located in Angus. Like a number of other local authorities, Dundee has a range of measures in place to improve air quality, since it has targets for airborne particulate matter (PM_{10}) and nitrogen dioxide (NO_2) currently not being met in the city centre and around major arterial routes. Some Angus premises use biomass boilers which can also produce particulate matter if they have insufficient filtration.

Joint working arrangements

Like many public health services in Scotland, health protection relies on coordinated strategic efforts between various organisations. The Public Health Act of 2008 required the development of a Joint Public Health Protection Plan (JPHPP), setting out the arrangements in Health Board areas for delivery of the health protection function, and giving an overview of health protection priorities, provision and preparedness. The JPHPP for Tayside has been renewed and updated for 2016-2018, and delivery is supported through a range of well-established local professional network groups.

- **Tayside Gastrointestinal Liaison Group**
  Ensures the NHS, three local authorities, Tayside Scientific Services and other key stakeholders take a consistent approach in reporting, investigating, monitoring and controlling gastrointestinal infectious disease.

- **Joint Tayside and Fife Water Group**
  This partnership between the NHS and other statutory organisations fulfils responsibilities in protecting and informing the public on the risks associated with public and private water supplies and blue-green algae (BGA).

- **Communicable Diseases - National Pregnancy Screening Programme**
  The programme offers screening to all pregnant women for human immunodeficiency virus (HIV), rubella, syphilis and hepatitis B, with onward referral for diagnosis and treatment as required. Follow-up must be in line with NHS Quality Improvement Scotland and relevant Managed Clinical Network (MCN) standards.

- **Tayside Sexual Health and Blood Borne Virus Managed Care Network** (SH&BBV MCN)
  This multi-agency accredited MCN is charged with implementing and monitoring delivery of the Scottish Sexual Health and BBV Framework 2011-15,[2] the Hepatitis C Action Plan,[3] and the HIV Action plan.[4] Representation includes NHS Tayside, voluntary sector agencies, and local authorities.

- **Tayside Significant Infections Group**
  This multi-professional group focuses on planning and preparedness for pandemic influenza and other new and emerging disease and hazards potentially posing a high-level threat to services across NHS Tayside, allied with the regional Resilience Planning Partnership.

- **TB network groups**
  In 2016, the Scottish TB Action Plan[5] became a Framework, and the HPT engages actively with the

national network implementing and overseeing its recommendations. This includes establishing and coordinating a local TB multi-disciplinary team (MDT) with clinical and microbiology colleagues, and participation in regional case review and peer education programmes.

- **Tayside Immunisation Steering Group (TISG)**
  The TISG coordinates delivery of all UK routine and selective childhood and adult vaccination programmes. It brings together NHS pharmacy, administration, finance, community and school nursing, and children's services, along with primary care and local authority education departments. In 2016/17 the TISG structure was refreshed and renewed with a new operational subgroup and occupational seasonal influenza short-life working group, which has freed the main group to prepare for and plan implementation of the Scottish Vaccination Transformation Programme[6] announced in February 2017. This involves a shift away from general practices delivering immunisations in favour of more centrally-managed services.

In Scotland, infectious diseases and environmental hazards disproportionately affect deprived and marginalised populations

Health Protection and Inequalities

In Scotland, infectious diseases and environmental hazards disproportionately affect deprived and marginalised populations, linked to upstream determinants such as low socioeconomic status and migration, which can in turn lead to downstream risk factors such as tobacco, alcohol and drug use, poor living conditions, limited social networks, and difficulty in accessing services.

In 2016/17, a significant piece of work overseen by the HPT explored the scale of minority ethnic and migrant communities in Tayside, in order to inform planning for enhanced screening and case-finding for TB among these potentially high-risk groups in line with national TB Framework priority actions.

Over the decade between the 2001 and 2011 UK Censuses, the non-white ethnic population in Tayside increased by over 5,500, from 7,495 to 13,294 individuals. The proportion of the population of Tayside that identified as non-white increased from 1.9% to 3.2%. 'Asian' (including Scottish and British) was the largest single non-white ethnic population group (2.1%), followed by 'African' (0.4%) and then both 'Mixed/Multiple' and 'Other' (0.3%). In 2011 Dundee City recorded the highest proportion of non-white individuals in its council area (6%), accounting for 66% of Tayside's total non-white ethnic population as a whole.

Analysis was carried out of data on adult overseas nationals registering for a new National Insurance (NI) number for the purposes of work, benefits or tax credits, which provide an indication of the number of new arrivals coming to a particular area. In 2015/16, a majority of overseas nationals in Tayside were registered within Perth and Kinross, accounting for 51.9% (N=2,774) of the total. Overseas nationals in Dundee City accounted for 24.8% (N=1,352) and in Angus 24.3% (N=1,327), of the total for Tayside.

There is some variation between the three Tayside local authority areas in terms of country of origin of their NI number allocations. Romanian is the most common single nationality of non-UK nationals registered in Tayside as a whole (29.7%) and both Angus (47.9%) and Perth and Kinross (30.6%). In comparison, among Dundee's allocations, those of Romanian origin represented only 9.8%, and the largest grouping was Polish nationals, representing 19.9% of the city's allocations.

1,275 clinical and laboratory notifications were received by the HPT in the year 2016/17, an average of 3.5 per day

A separate analysis indicates that every year between 700 and 1,000 students from countries around the world with high TB incidence register with the Universities of Abertay and Dundee (combined), and it is likely that most are not included in the NI number statistics. In all, it is estimated that around 12,000 individuals come to Tayside each year who would at least fit criteria for requiring screening for latent TB infection. Many will also be at risk of a range of infectious and environmental illnesses depending on the country and area of origin.

Other sectors of the population which are potentially vulnerable and/or associated with being under-served include rural communities and people experiencing homelessness. In 2013/14, 19.1% of the Tayside population resided in 'accessible rural areas', and 5.2% were living in 'remote rural areas'. During 2014/15, Dundee City Council received 1,102 applications for assistance under Homeless Person's Legislation, compared with Angus (597 applications) and Perth and Kinross (680 applications). Over the last eight years there has been a decline in the number of applications, most pronounced in Perth and Kinross.

The exploration of vulnerable communities in Tayside will be taken forward to seek solutions to better identify and make health protection related services more accessible for them, including appropriate screening for latent TB and other infections, and routine immunisations.

Overview of core activities in 2016/17

Under the 2008 Public Health Act there is a list of diseases that registered medical practitioners have a statutory duty to notify to their public health department based on reasonable clinical suspicion, and a largely corresponding set of organisms that diagnostic laboratories also have a statutory duty to notify. The HPT uses the national HPZone electronic record system to document these notifications and coordinate responses, which include issuing information and advice to individuals, professionals and the public; putting exclusions in place; offering pre and post-exposure antibiotics and vaccinations to reduce the risk of disease and tracking trends.

HPZone data show that, in total, 1,275 clinical and laboratory notifications were received by the HPT in the year 2016/17, an average of 3.5 per day, and ranging from common infections requiring limited follow-up such as campylobacter, to severe and complex cases such as E. coli O157, Legionnaires' disease and TB. Additional to this are other reports and enquiries the team responds to, including water quality failures and potential environmental hazards, and requests for advice on vaccinations. In total these numbered 698 in 2016/17.

The notifications and enquiries figures include those which led on to the HPT declaring and managing an outbreak or other public health incident. In total there were 30 of these situations in 2016/17. Some are quite routine, including infectious respiratory and gastrointestinal outbreaks in care homes. Others are more challenging, and among the most significant were outbreaks associated with childcare settings, including one of E. coli O157 and one of meningococcal infection, and infections of pertussis (whooping cough) and TB in healthcare workers. All such incidents are subject to detailed 'lessons learned' and reporting processes.

Strategic Priorities

In recent years, the HPT has been guided in setting priorities by the Chief Medical Officer for Scotland's 2012 annual report, which specified key challenges and priorities in relation to communicable diseases, many of which remain relevant today:

- Gastrointestinal and food-borne infections - reflecting complex transnational foods chains, and zoonoses such as *Salmonella, Cryptosporidium, E. coli* O157 and Lyme disease.
- Travel and international health, and emerging and re-emerging infections - with millions of international journeys made from and to Scotland every year, the threat of gastrointestinal, viral and vector-borne infections such as chikungunya, Zika, avian influenza and MERS-CoV is significant.
- Environmental factors - estimated to account for 14% of the UK's disease burden; the main environmental concern for Tayside is air pollution, to which traffic is a major contributor.
- Resilience and emergency preparedness - highlighting the need to predict and respond to established and emerging global health threats posed by infectious diseases, environmental hazards, natural disasters and bioterrorism

Many of these threats and activity themes remain highly relevant and current in 2017, and for the years ahead. They have informed the NHS Tayside HPT's own work-planning and prioritisation programme, consisting of regular development events and management and professional knowledge update meetings, in service of realising the team's long-term strategic vision. Priority work-streams for 2017/18 been identified provisionally as summarised Table 1 on the following page.

Strategies to meet these priorities and the challenge of current and emerging health protection threats will include becoming technologically smarter, particularly in surveillance, risk communication, and applying national guidance; and increasing collaboration towards resilient, multi agency structures and national strategic plans such as the new Vaccination Transformation Programme, the Sexual Health and Blood Borne Virus Framework, national TB Framework, and VTEC/E Coli O157 Action Plan.[7]

Table 1		
Priority theme	**Specific topics**	**Recommendations for 2017/18**
Blood borne viruses	Hep B vaccination for exposed and at-risk babies	Establish electronic call/recall system
		Agree robust multi-disciplinary pathway for identification and follow-up of eligible patients
	Prevention for high-risk/vulnerable groups	Develop strategies to inform and reduce risks associated with 'chemsex', commercial sex work, and injecting drugs
Immunisation programmes	Scottish Vaccination Transformation Programme	Lead three year wholesale reorganisation of services in line with national programme
	IT/records systems (e.g. GP, hospital, child health etc)	Advocacy for national renewal of electronic systems so that they inter-connect
		Develop more efficient local interim solutions to multiple recording/data entry
		Pursue full access to immunisation call/recall system for HPT admin. staff
	Unscheduled/catch-up vaccinations	Clarify responsibilities of Immunisations service/GPs/others and streamline pathways
	Staff education and training	Develop regular comprehensive training and update programmes for immunisers
	Accessibility and uptake	Work with services delivering staff flu, pregnancy and other programmes to enhance awareness and accessibility
Gastrointestinal infections	E. coli	Revise protocols to ensure consistency in where, when and how exclusion is required
		Streamline financial compensation for those excluded so vulnerable individuals and families are not disadvantaged
	Multiplex Polymerase Chain Reaction (PCR) testing	Management of anticipated increase in workload from more sensitive testing
		Resolve management of asymptomatic chronic carriers in whom clearance difficult
	Lyme disease	Engage with national public information and management development work
	Campylobacter	Commonest single pathogen notified in Scotland - participate in national epidemiological study
Environment	Air pollution	Responding to national initiatives to identify and remediate high emissions areas
	Lead in water	Implementation of new quality standards including in schools and childcare facilities
TB	National TB Framework	Develop and implement strategies for screening and detection of latent TB in new entrant and other high-risk groups
		Increase screening accessibility by extending to peripheral sites
Health Protection Team management	Resilience	Identify and train nurses from wider work-force to provide health protection nursing team resilience
	Administration capacity	Explore opportunities to re-direct staff time
		Formalise documentation in electronic systems when using staff resilience
	Out-of-Hours	Engage with national project evaluating arrangements, including mutual aid options
	Action cards (administration team)	Ensure continuous review and update
	Team development	Ongoing review and update of mandatory training requirements
		Develop team induction programme

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Halting the Obesity Epidemic

Introduction

Overweight/obesity remains a major public health issue and occurs when energy intake from food and drink consumption, including alcohol, is greater than the body's energy requirements over a prolonged period, resulting in the accumulation of excess body fat. Body Mass Index (BMI), a measurement comparing weight to height, is commonly used as a measure of overweight and obesity.

Prevalence of obesity in the UK has more than doubled in the last 25 years and it is estimated that by 2050, 60% of men, 50% of women and 25% of children will be obese.[1] In adults a BMI between 25 and 30 indicates overweight and a BMI greater than 30 indicates obesity. Obesity and overweight levels are generally higher in the most disadvantaged groups, but the socioeconomic status gradient is much clearer and steeper in women than in men. The Scottish Health Survey[2] shows that for the period 2012/15 in Tayside:

- Almost 65% of adults (68% men and 62% women) were overweight or obese compared to 69% and 61% in Scotland.
- Almost 29% of adults were in the obese category, which is slightly higher than the Scotland figure of 28%.
- Obesity is more prevalent in women (30%) than men (27%).

Poor diet and inactivity are significant issues,[2] for example:

- 69% of adults in Tayside have fewer than the recommended five portions of fruit and vegetables per day, compared to 70% in Scotland.
  - The average number of portions per day is 3.1 in Tayside and 3.2 in Scotland.
  - In Tayside 10% of men consume no fruit or vegetables per day compared to 9% of women.
  - 21% of men and 21% of women in Tayside consume five portions or more per day. This is very similar to the figures for Scotland (20% and 21%, respectively).
- 62% of adults in Tayside (63% in Scotland) meet the recommendation of at least 150 minutes of moderately intensive physical activity or 75 minutes vigorous activity per week or an equivalent combination of both.
  - There is a marked difference between men and women, with 67% of men in Tayside (68% in Scotland) meeting recommendations compared to 58% of women (58% in Scotland).

For Primary One children in Tayside during 2015/16:[3]

- 76.1% were classified as healthy weight (defined as BMI above 2nd centile and below 85th centile), a small increase on the 2014/15 figure of 75.2% and slightly less than the Scotland average of 76.8%.
- 23.1% were at risk of overweight/obesity (defined as BMI on and above 85th centile) combined.
- The risk of obesity (defined as BMI on and above 95th centile) has reduced slightly from 11% in 2014/15 to 10%.

Being obese or overweight can increase the risk of premature death and developing a range of serious diseases including, type 2 diabetes, hypertension, heart disease and some cancers. This situation is avoidable but the solution is complex.

Prevalence of obesity in the UK has more than doubled in the last 25 years and it is estimated that by 2050, 60% of men, 50% of women and 25% of children will be obese

Multi-agency partnership working is necessary to make 'sustainable changes to our living environment in order to shift from one that promotes weight gain to one that supports healthy choices and healthy weight for all'. [4]

The Scottish Government identified four preventative actions:[4]

- Control exposure to, demand for, and consumption of, excessive amounts of highly calorific foods and drinks.
- Increase opportunities for physical activity in daily lives and minimise sedentary behaviour.
- Establish lifelong habits for positive health behaviour.
- Increase the responsibility of organisations for the health and wellbeing of employees.

The Scottish Government also calls for assurance that cost effective and appropriate weight management services are provided.[4]

Getting the Best Start in Life

The diet and nutritional status of the mother before conception and during pregnancy, the feeding received in the first few months of life, the introduction of complementary feeding and, the diet and nutritional status of the growing infant all contribute to the long-term health of the population.[5, 6]

Healthy Start

Poorer households in Scotland have a worse diet than affluent households.[7] The national Healthy Start scheme provides monetary vouchers (for cows' milk, infant formula milk, fruit and vegetables) and free vitamins to those most in need. Uptake of the scheme in Tayside is around 70%, which is on a par with the rest of Scotland (Chart 1). Healthy Start vitamin supplements are important because 8% of children under five in the UK do not have enough vitamin A in their diet, families in lower income groups tend to have less vitamin C in their diet, and all pregnant and breastfeeding women and young children are at risk of vitamin D deficiency (teenagers, younger women and those from ethnic minorities are particularly at risk).[8, 9]

What are we doing to improve uptake of Healthy Start and reduce inequalities?

- Healthy Start is introduced by midwives to all pregnant women at booking, and opportunistically by multi-agency partners (e.g. housing association and voluntary sector personnel).

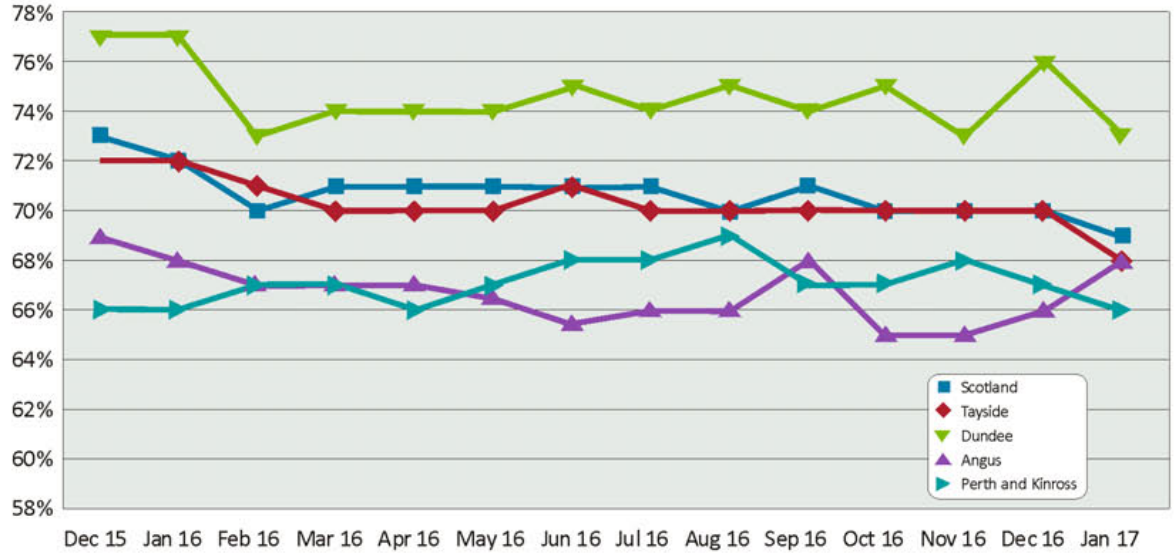
8% of children under five in the UK do not have enough vitamin A in their diet, families in lower income groups tend to have less vitamin C in their diet

- Healthy Start vitamin supplements for pregnant or lactating women and children are issued throughout Tayside. Between April 2016 and March 2017 midwives issued over 12,000 units of vitamin tablets to pregnant and breastfeeding women and health visitors issued over 6,000 units of children's vitamin drops.

Infant Feeding

Exclusive breastfeeding for the first six months of an infant's life is the ideal. Evidence shows short and long-term health benefits for both mothers and infants and several factors influence whether or not a mother continues to breastfeed. In 2015/16 Tayside's exclusive breastfeeding rate at 10 days was 38.9% compared to 35.6% in Scotland which represents a 1.7% increase since

Chart 1: Uptake of Healthy Start Vouchers by NHS Tayside, Local Authority and Scotland Average



Source: Scottish Government Healthy Start statistics, 2015-2017

Exclusive breastfeeding for the first six months of an infant's life is the ideal

2013/14 (Chart 2). At 6-8 weeks 29.2% of babies were exclusively breastfed compared to 28.2% in Scotland, which is a 3.3% increase since 2013/14 (Chart 3).

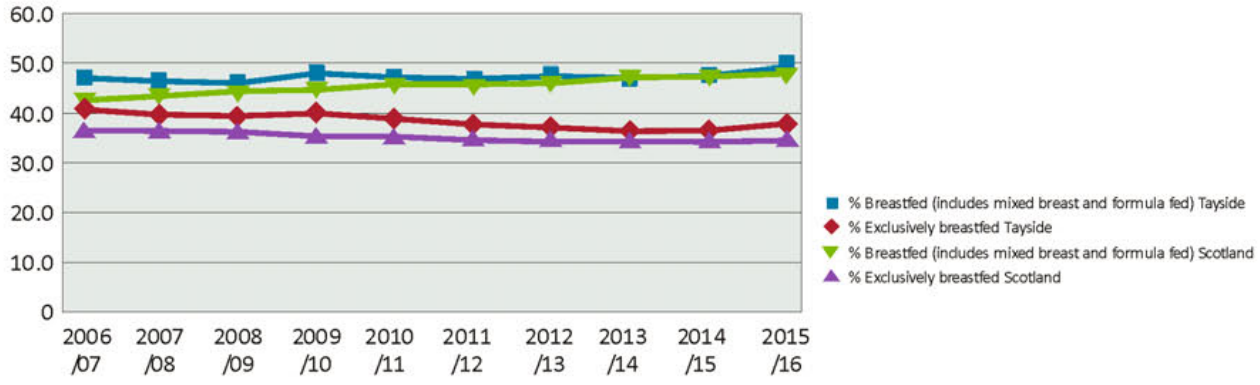
What are we doing to improve infant feeding and reduce inequalities?

- We are continuing to improve the knowledge, skills and confidence of all those working with pregnant women and new mothers by delivering separate two-day courses on breastfeeding management and maternal and infant nutrition; plus two online training programmes, each covering infant formula milk and breastfeeding challenges.
- We are working with maternity and community nursing services to maintain UNICEF UK Baby Friendly Initiative accreditation.
- We are working with neonatal services to implement the UNICEF UK Baby Friendly standards.
- We are providing additional support to mothers through breastfeeding support workers, peer support volunteers, telephone contacts and social media. We have extended the additional breastfeeding support in one area of Dundee as a test. We have increased the number of breastfeeding volunteers and are supporting a volunteer coordinator role.
- We are providing impartial information about infant formula milks to NHS Tayside staff to share with parents.
- In partnership with mothers we are continuing to increase the number of cafés and restaurants participating in the Breastfeeding Welcome scheme.

Maternal Obesity

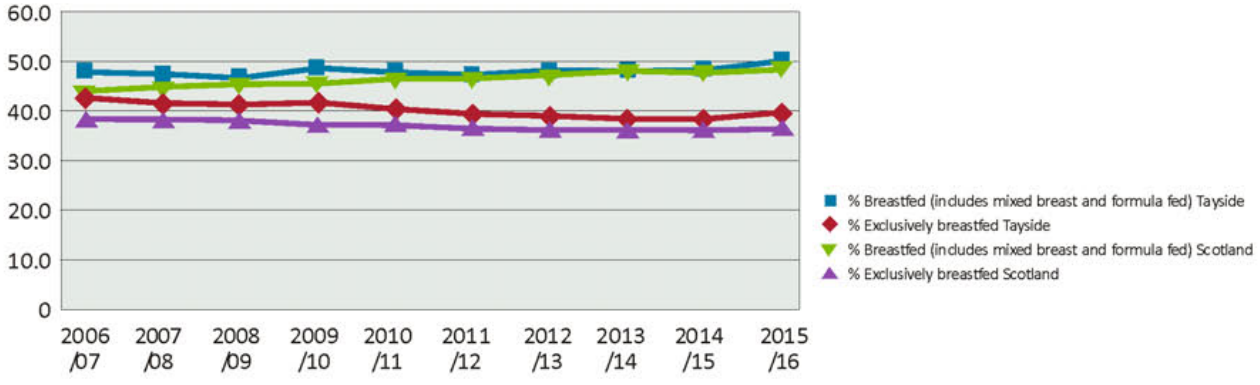
Obesity in pregnancy is currently 'the biggest challenge facing maternity services today'.[10]

Chart 2: Breastfeeding at the first health visitor visit - NHS Tayside and Scotland



Source: ISD Breastfeeding statistics, Financial year 2015-16

Chart 3: Breastfeeding at the 6-8 week health visitor review - NHS Tayside and Scotland



Source: ISD Breastfeeding statistics, Financial year 2015-16

Women with obesity are more than twice as likely to have a stillborn baby and the risk increases with increasing BMI. Babies born to mothers with obesity are less likely to be breastfed and are more likely to have congenital anomalies (especially neural tube defects) and to require admission to neonatal units. It is also more difficult to monitor the health of these babies during pregnancy and birth.

The mother's health is also at risk. They are more likely to have pregnancy related complications such as gestational diabetes, pre-eclampsia, haemorrhage following birth, thromboembolism and deliver their babies by caesarean section.

What are we doing to address maternal obesity and reduce inequalities?

Underpinned by national guidance[11] and in partnership with multi-disciplinary and multi-agency personnel and local women we have developed, delivered and evaluated:

- Written information for all pregnant women with a BMI over 30, on the risks of obesity in pregnancy and how to access available support and guidance. This is issued after discussion with the midwife.
- The optiMUM programme (an exclusive lifestyle programme for pregnant women with a BMI over 30), which is now integrated into antenatal services and offered throughout Tayside. This nationally recognised service was allocated Scottish Government funding for an independent evaluation.
- A vulnerable care pathway with specific guidance on the management of pregnant women with a BMI over 30.
- A free-of-charge 12-week Weight Watchers© programme for postnatal women with a BMI over 30 at pregnancy booking.

Complementary Feeding and Family Food Skills

People living in areas of deprivation are less likely to eat wholemeal bread and vegetables, and are more likely to drink soft drinks (not diet drinks) and eat more processed meats, whole milk and sugar.[9]

Babies born to mothers with obesity are less likely to be breastfed and are more likely to have congenital anomalies

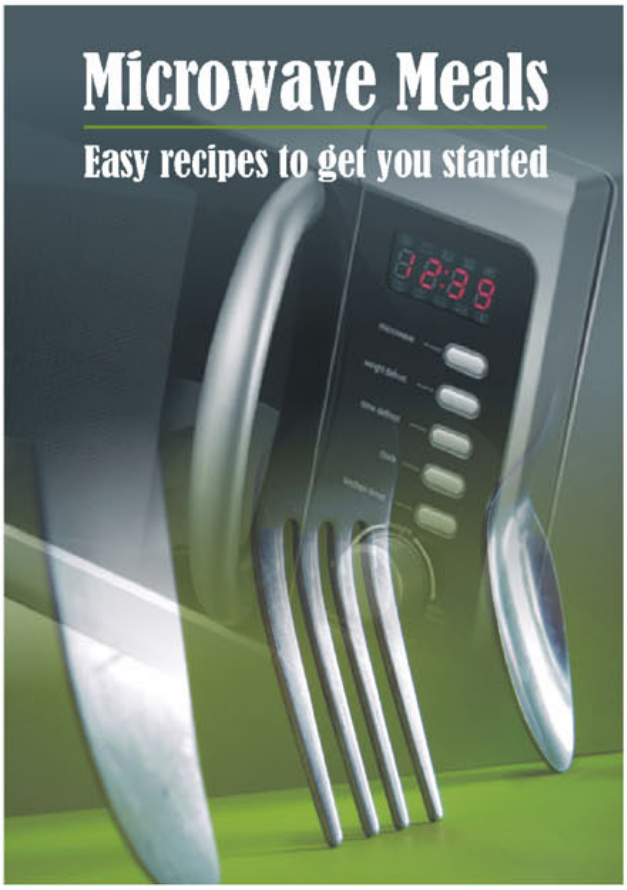
Adults in Scotland consumed an average of just over three portions of fruit and vegetables a day in 2015[2], compared to the recommended minimum of five portions. Over the past several decades a change in cooking and food preparation skills has resulted in an increased use of pre-prepared, packaged and convenience foods, which require fewer and/or different skills from what is often referred to as 'traditional cooking'. This change has also had an important impact on healthy eating.

- 77% of children receive solid food before the recommended age of six months.
- Over half of children aged 4-18 months in Scotland who had food other than milk, had eaten a commercial baby or toddler meal.[12]
- Children continue to consume too much sugar and not enough fruit and vegetables[3] especially children from areas of deprivation.[13]
- 14% of children aged 2-15 years eat at least five portions fruit and vegetables every day.[14]

What are we doing to increase food skills and reduce inequalities?

- We are working with NHS Tayside's Nutrition and Dietetic Service and the Dundee Healthy Living Initiative (DHLI) to develop and/or deliver food related training. Examples include the Royal Environmental Health Institute for Scotland's Elementary Food Hygiene and Food and Health courses, NHS Tayside's practical food skills' programme 'Community Cook It' and 'complementary feeding' training.
- We are continuing to support Dundee's local food skills' network that supports anyone delivering practical food activities.

- We are working in partnership with Dundee Leisure and Culture, and Dundee City Council to support and sustain the nutrition and play programme, 'Eat Well Play Well'.
- We are harnessing more opportunities to work with partners to partly fund and/or support them in delivering practical food activities and cooking courses within disadvantaged communities across Tayside including 'Eat Well Play Well' groups, parent lunchtime session in schools, parent and child cooking courses (DHLI), healthy lifestyle courses and practical food skills sessions (Helm Health in Dundee).
- We are developing practical nutrition resources which support partners to provide consistent and evidence-based nutrition messages such as a traffic light guide to complementary feeding and a resource for microwave meals.



Protecting Health

Child Healthy Weight

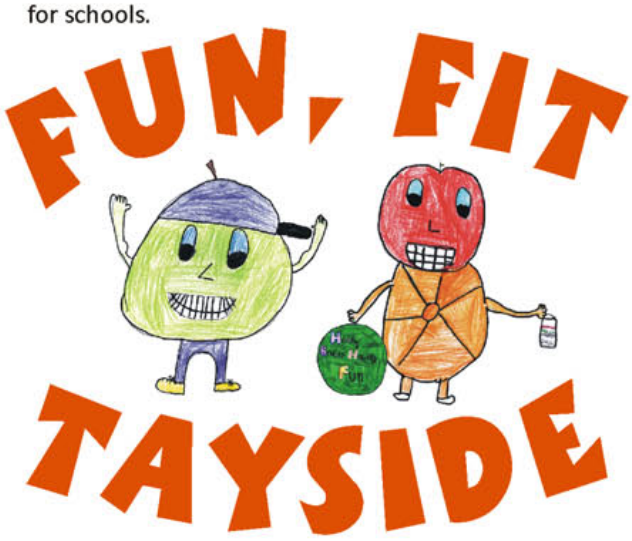
Childhood obesity persists into adulthood with the likelihood increasing markedly for obese teenagers.[15, 16] Risk factors include sedentary lifestyle, poor diet, social deprivation and parental obesity. Adults have an important role in determining the lifestyle choices of children, particularly during the earliest years of a child's development. Factors such as income, gender and a person's ethnicity increases the impact of obesity within certain population groups.[1]

In children and teenagers a wide range of health problems can be associated with excess weight including high blood pressure, diabetes, psychosocial dysfunction and the worsening of existing conditions such as asthma. Management of childhood obesity is important due to the high prevalence of overweight and obesity. In 2015/16, 23.1% of Primary One pupils were overweight or obese[3].

What are we doing to tackle childhood obesity and reduce inequalities?

The Paediatric Overweight Service Tayside (POST) continues to deliver:

- A weekly clinical service at Perth Leisure Pool, Kirkton Community Centre in Dundee and the Saltire Centre in Arbroath for children and young people aged under 16 years who are actively managing their weight.
- Community groups e.g. 'Get Going' in Dundee (delivered by partner organisation Mytime Active until July 2016).
- A co-production approach to child healthy weight called 'Learn Well'. In Dundee's east end and the North Muirton and Pitcairn areas of Perth and Kinross, 'Learn Well' is engaging with the local community around promoting healthy lifestyle, healthy weight and normalising discussions on body weight. In Dundee, community engagement events were held with over 200 people attending at Craigiebarns and Rowantree primary schools. The POST team is working in these schools, as well as, Pitcairn and North Muirton to promote the Daily Mile and delivery of 'Fun Fit Tayside' - a child healthy weight health promotion programme for schools.



Workforce

A healthy workforce is essential to help Scotland increase sustainable economic growth. Rising levels of obesity make a significant and growing contribution to levels of illness and subsequently sickness absences in the workforce. Currently 2.5 million people in Scotland are in employment (25% in public sector) and given the amount of time individuals spend at work there is a real opportunity to engage a larger proportion of the adult population in activities that prevent obesity.

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In addition, our current obesogenic environment (places, situations or practices) promotes excessive weight gain and/or discourages healthy lifestyle choices within the home or workplace.[17, 18]

What are we doing to improve diet and lifestyle in the workforce and reduce inequalities?

- All workplaces participating in the Healthy Working Lives (HWL) programme are required to address healthy eating and physical activity within the workplace setting as part of the criteria for the Silver Award. Thirteen NHS Tayside sites are registered for participation in the HWL programme with six of the sites having reached Silver Award level or above. A further 15 non-NHS workplaces throughout Tayside have also achieved either the Silver or Gold Award.
- The HWL team regularly promotes healthy eating information in all workplaces and this year included the Scottish Cancer Prevention Network's healthy eating assessment and healthy recipes and other healthy recipes.
- All 10 NHS Tayside dining areas serving food to staff and the public hold the national 'healthyliving award plus'. NHS Tayside has two non-NHS providers; one currently holds the award and the other has applied.
- NHS Tayside continues to include Health Promoting Health Service criteria in the specification for the combined vending contract for drinks, confectionery and snacks.[19, 20, 21]
- In the NHS setting the Healthcare Retail Standard (HRS) creates an environment where healthier choices are easier choices and gives an opportunity for retailers to encourage the nation to eat more healthily. Fifty percent of food items and a minimum of 70% of soft drinks stocked must meet agreed criteria; HRS also restricts promotions to healthier items and meal-deals.[21] Five retail premises (one NHS, two non-NHS premises and two non-NHS trolley services) comply with the HRS. Two further non-NHS retail premises are working towards achieving the HRS in 2017/18.

Effective Health Services

The number of overweight or obese adults within our population is now so high that being a healthy weight is no longer 'normal'. What can be done to treat overweight/obesity depends on how able or willing an individual is to change various lifelong behaviours relating to food and physical activity.

Adult Weight Management

Sustained modest weight loss (5-10%) has a number of health benefits:

- Improves physical, mental and social wellbeing
- Improves pre-existing obesity related co-morbidities
- Reduces future risk of obesity related co-morbidities

The Scottish Government advocates a four tiered service:

Tier 1: Population-wide health improvement work: pre-healthcare lifestyle advice; self-care including workplace support and activities; community pharmacy and commercial weight management programmes.
Tier 2: Primary Care: healthcare assessment, advice, support, intervention and monitoring which may include referral to practice or community-based services (e.g. lifestyle adviser support service, Counterweight®, Winning Weigh, community dietetic service or commercial slimming organisations) and possible drug therapy.

Tier 3: Specialist Weight Management: access to a multi-disciplinary team and more intensive assessment and support for people with severe and complex obesity.
Tier 4: Specialised bariatric surgical service: referral only after full and active engagement in tier 3.

What are we doing to improve adult weight management services and reduce inequalities?

Helping people to lose and/or maintain weight is the central aim of NHS Tayside's specialist adult weight management service.

Helping people to lose and/or maintain weight is the central aim of NHS Tayside's specialist adult weight management service

We continue to:

- Listen to patients who make it clear that being able to access the best treatment close to home is a priority.
- Review the clinical pathway in line with the recommended tiered approach.
- Support being an opt-in service, ensuring an individual's 'readiness to change' is assessed prior to treatment.
- Deliver a multi-disciplinary group programme for tier 3 covering diet, activity/inactivity and behaviour change which includes access to physiotherapy and clinical psychology, and if necessary, to other therapies such as anti-obesity medication and surgery.

We have also:

- Commenced a revamp of the tier 3 programme and designed a new programme around patients' comments and feedback.
- United child and adult weight management services in order to provide a more integrated approach.
- Started to discuss the best way to combine work with parents, children and young people to address childhood obesity.

Recommendations

During 2015/16 we reviewed Tayside's Healthy Weight Strategy (2005). A fact file was created which forms a central part of the evidence-base and includes information on demography, national and local obesity policy drivers, healthy weight related data and, local healthy weight services and activities. An assessment of the Strategy's 52 recommendations (82 elements) showed that implementation varied from 'no progress' (three elements) to 'significant' or 'sustained improvement' (37 elements). Therefore, whilst we have made some progress since 2013/14 there is still much to do.

We will do all that we can to make sure obesity becomes an explicit priority at strategic and delivery levels for NHS Tayside and local authorities.

We will engage with external partners to integrate support and provide sustainable preventative and treatment services based on the following outcomes:

- Access to a free-of-charge 12-week Weight Watchers© programme is extended to women of childbearing age.
- UK Baby Friendly accreditation is achieved as a minimum standard by NHS Tayside.
- There is a robust analysis of the necessary steps for healthy eating and physical activity for children, young people and families that address obesity prevention.
- Vulnerable families continue to be assisted to develop fundamental food skills and access affordable healthy food.
- NHS Tayside's Nutrition and Dietetic service supports partners in activities that prevent and control obesity.
- An improved adult weight management service tier 3 programme is implemented.
- Obesity prevention and control strategies in the workplace are developed and implemented.
- A standardised framework supporting high-quality, consistent evaluation of obesity prevention and treatment is developed.
- The principles of co-production and asset based approaches continue to be applied to the design and delivery of all obesity prevention and treatment approaches.

Whilst personal responsibility plays an important role in weight gain, in obesogenic environments inactivity and over consumption of energy dense foods are easy, affordable and widely accepted; making an unhealthy lifestyle the default option. Therefore, in addition to the above we will work with partners to identify opportunities to create leptogenic environments whereby physical activity and the consumption of healthy food and drinks are easy, affordable and widely accepted, making a healthy lifestyle the default option.

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Realistic Medicine

In her first Annual Report, Realistic Medicine,[1] Dr Catherine Calderwood, Chief Medical Officer, set out to engage clinicians with her vision that our health services could work to reduce unnecessary treatment, address unacceptable variation in outcomes, and deliver more appropriate, personalised care: the concept of minimally disruptive medicine.

Putting people at the centre of decision-making and building a personalised approach are key to our Chief Medical Officer's plans to change the way in which we work across all professions in NHS Scotland. Realising Realistic Medicine[2] has set out the ways in which we can change patients' experiences of our health service. Both Reports encourage clinicians to manage clinical risk and become improvers and innovators whilst addressing unwarranted variation.

Figure 1: Realistic Medicine - key message

Source: Chief Medical Officer's Annual Report Realistic Medicine

'In striving to provide relief from disability, illness and death, modern medicine may have over reached itself and is now causing hidden harm - or at best providing some care that is of lesser value'.[1]

This requires a culture shift within the NHS, where the norm is that the responsibility for health is removed from the patient and placed with the prescriber, who is expected to to follow clinical guidelines. It is increasingly recognised that clinical guidelines that are developed for single disease-states can not necessarily be extrapolated to manage those with multiple diseases, and that implementation of all applicable guidelines can drive polypharmacy.[1] [3]

> Evidence demonstrates that at least 50% of people on four or more medications often do not take them as prescribed

Polypharmacy is an increasing burden on both the patient and the NHS

We are all aware that as our populations live longer they are more likely to develop a range of long-term conditions - all of which can require multiple medications. Up to 11% of all unplanned hospital admissions are attributable to medicines-related harm. Research shows that this increases with age. In Tayside, the Acute Frailty Team found that 42% of patients with unplanned hospital admissions in the over 80 age range have medicine-related component to their admission.[4]

Potentially, inappropriate prescribing can occur where medication is prescribed in a traditional condition-specific manner, rather than as part of a holistic person-centred approach. Evidence demonstrates that at least 50% of people on four or more medications often do not take them as prescribed, and up to 6% of all admissions to hospital are caused by incorrect use of medicine.

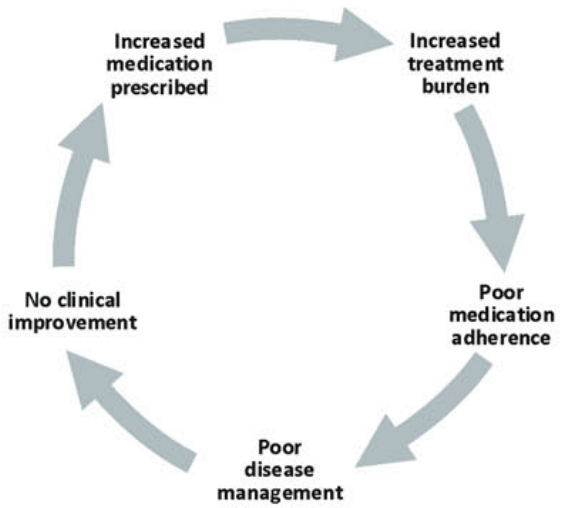
From a public health perspective I am aware of the differential uptake of treatments by members of our more disadvantaged communities and the poorer outcomes that are often experienced by them from NHS care. A significant contributor to the poorer outcomes are problems with health literacy (the ability to understand and make use of information that sustains and improves health) amongst these populations. The delivery of care from within communities holds the prospect of addressing some of the issues with health equity that are caused by the need to navigate journeys through complex secondary care pathways. These are significant challenges for our healthcare systems – not just for the added cost that we collectively bear, in a time when resources are tighter than ever, but also for how

we enable our citizens to gain as high a quality of life as possible.

The World Health Organisation (WHO), and World Bank combined data globally estimate that mismanaged polypharmacy contributes to 4% of the world total avoidable costs due to suboptimal medicine use. A total of 0.3% of global total health expenditure, or 18 billion US dollars worldwide, could be saved by managing polypharmacy correctly.

Treatment burden can be assessed using polypharmacy as an index. The more medicines you take, the greater the burden of storing, organising, scheduling doses and understanding what each medicine does. The greater the burden, the less likely you are to take your medicines as intended. This situation causes an increasing problem for the patient and creates a condition in which they are unable to comply with the medicines prescribed and so do not meet the therapeutic outcomes, leading to more medicines being added.

Figure 2: Cycle of polypharmacy, treatment burden and treatment failure

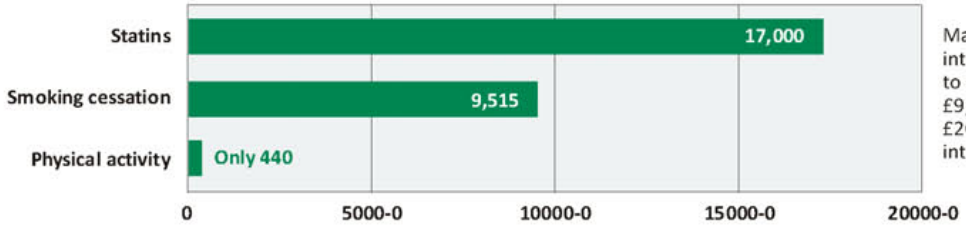


Alcohol and tobacco consumption, physical inactivity, lack of a nourishing diet and poor mental wellbeing are the most pressing causes of ill health across all groups of the population

Alcohol and tobacco consumption, physical inactivity, lack of a nourishing diet and poor mental wellbeing are the most pressing causes of ill health across all groups of the population, but are particularly prevalent in poorer communities. Inequalities in power and in resources, including for some, the inability to afford necessities such as fuel, make it difficult for some people to live healthily or make healthy lifestyle choices. For better population health individuals need to be supported directly, but it is equally important that we improve the circumstances within which people are born, live, work and age.

Recent controversy over the widespread prescribing of statins[5] demonstrates our over reliance on medicines to fix problems arising from lifestyle choices. Little scrutiny has taken place over the effect prescribing a statin has on a person's diet and lifestyle changes and it is argued that by prescribing a statin it discourages adoption of lifestyle changes that would have a greater impact on their overall health and wellbeing. The consequences of this over reliance can be demonstrated effectively by looking at the cost of interventions by Quality-Adjusted Life Years (QALY) of statins, smoking cessation and physical activity.

Figure 3: Cost of interventions by quality-adjusted life year (QALY)



Maximum figures cited for each intervention. Ranges were £10,000 to £17,000 for Statins, £221 to £9,515 for smoking cessation, and £20 to £440 for physical activity interventions

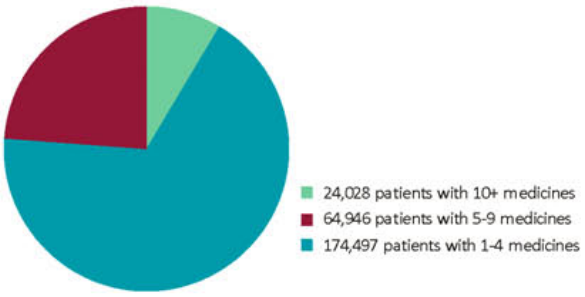
Note: One QALY is equivalent to one year of life at full health. Cost per QALY is a common way to compare interventions, with lower cost meaning greater effectiveness.
Source: Transform Scotland for sustainable transport.

Most people struggle to take more than four medicines consistently and as prescribed

Number of medicines prescribed across Tayside

Figure 4 below demonstrates the number of medicines prescribed to patients across NHS Tayside from July to December 2016. From this it can be seen that nearly 89,000 people in Tayside have a considerable treatment burden which may in itself be having a negative impact on their health. Most people struggle to take more than four medicines consistently and as prescribed.

Figure 4: Patient count by number of distinct British National Formulary (BNF) paragraphs for NHS Tayside between July and December 2016 for patients of all ages



Source: PIS dataset for NHS Tayside July to December 2016

The Triple Aim Framework

The Triple Aim Framework is a concept developed by the Institute for Health Care Improvement. It hypothesises that to change service delivery for the better all three aims must be considered simultaneously.[6]

Figure 5: The Triple Aim Framework

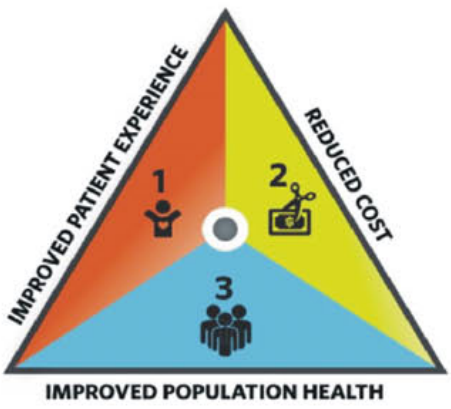


Image source: Medical University of South Carolina

By empowering people to take responsibility for their health and supporting decisionmaking we can improve the patient's experience of our healthcare system.The Triple Aim concept helps us to address the current imbalance of investment across the health service. If we can shift the balance towards preventative actions and health promotion and away from cost of treatment we can have a positive impact on our population's health.

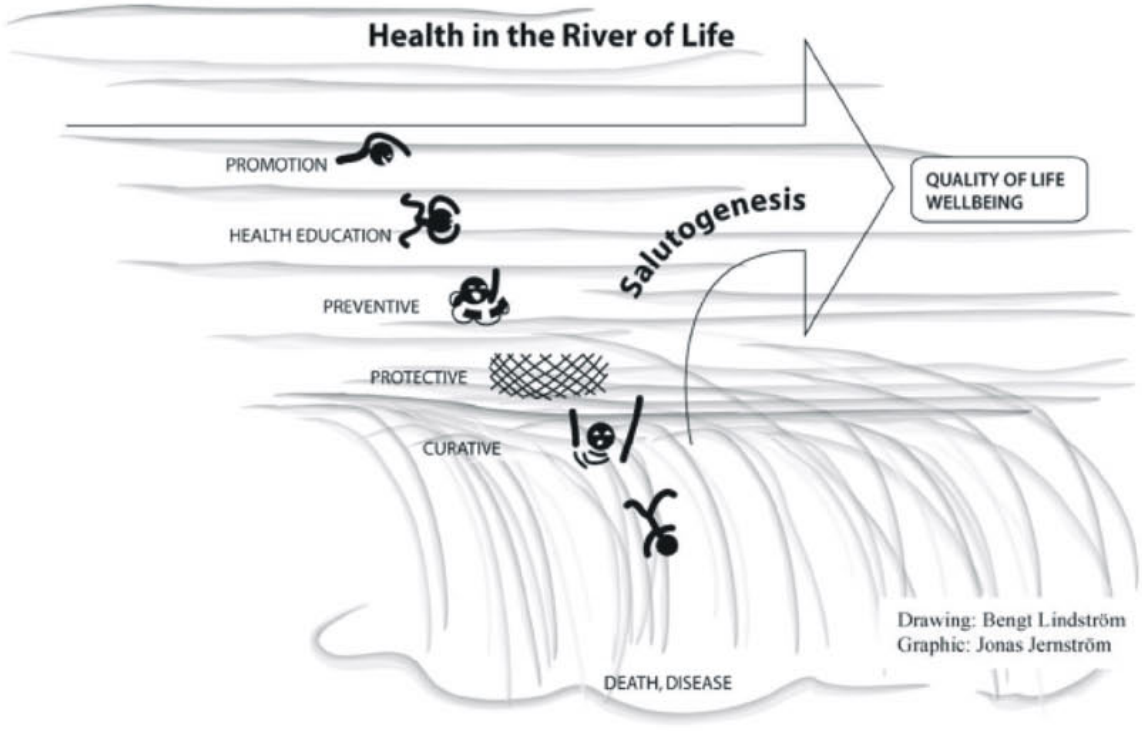
Why improving health means moving upstream

One of the ways that the difference between the usual health approach and the public health approach has been described is as a river. The following stages are described moving up the river: (i) cure or treatment of diseases; (ii) health protection/disease prevention; (iii) health education and finally on top health promotion (Figure 6). Health promotion holds a rather different perspective, relating mainly to resources or assets, for health and life not primarily risk and disease. All approaches ultimately strive to improve health, but through different perspectives. If our current approach to health services was compared to this concept we would see that there is a 'down river bias', focusing on processes where the risk exposure already may have caused damage (cure, protection, prevention and often health education).[7] The health concept in this way of thinking about health is constructed from the understanding of disease, illness and risks. However, in the health promotion approach we bring the focus upstream finding resources, initiating processes not only for health but wellbeing and quality of life. To create sustainable healthcare, our approach must be focussed upstream.

> The obligation for public services and for individuals is to ensure that we plan, design and provide high-quality services in ways which best meet people's needs in a safe environment in a sustainable way

The obligation for public services and for individuals is to ensure that we plan, design and provide high-quality services in ways which best meet people's needs in a safe environment in a sustainable way. This approach to the planning and delivery of public services is likely to be better for people, carers, families and communities, and appropriate management of medication is absolutely at the vanguard of effective delivery of better outcomes.

Figure 6: Health in the River of Life



Source: Health in the River of Life, Eriksson and Lindström 2008[7]

Figure 7: Genetic and lifestyle risks

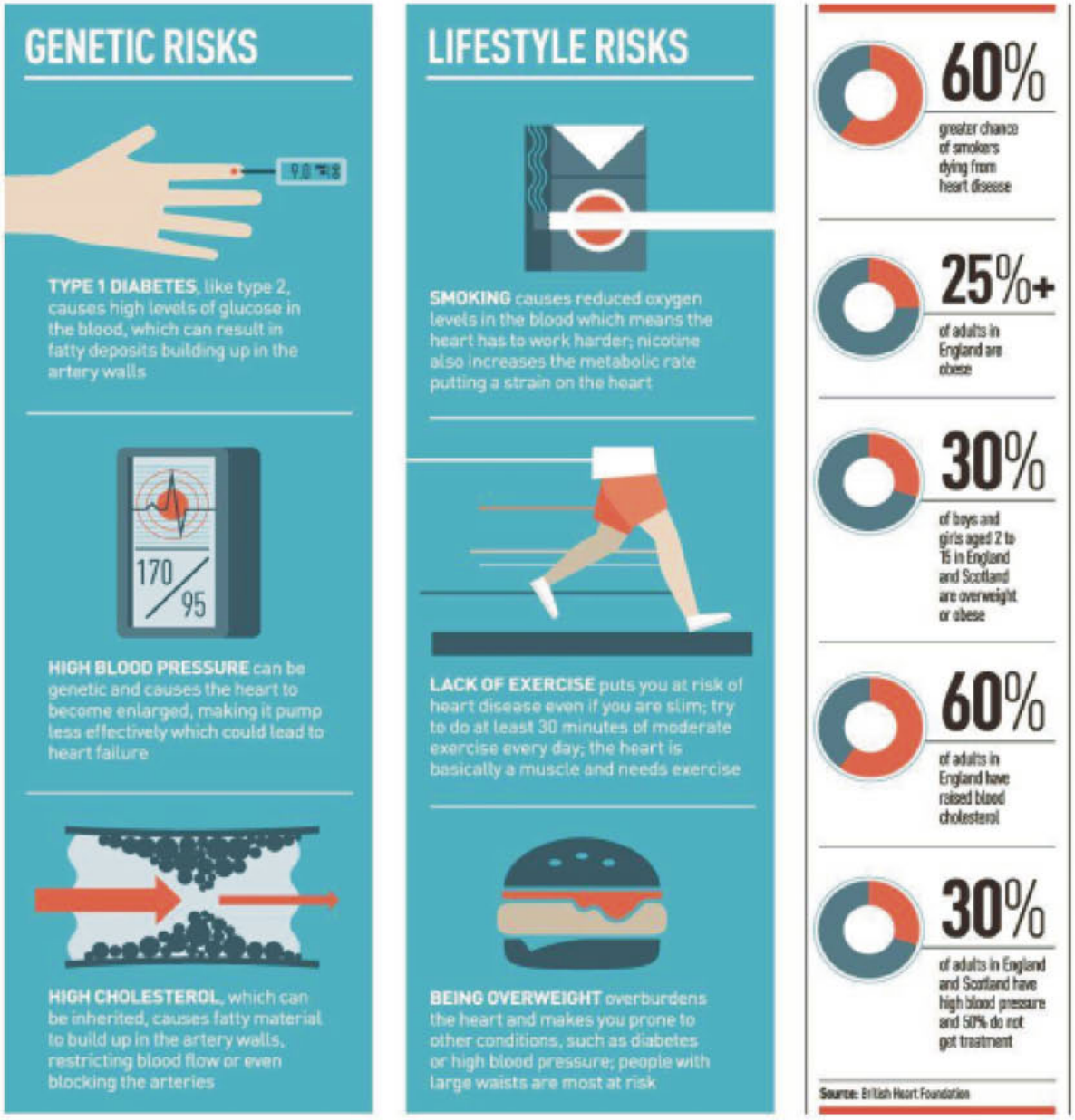


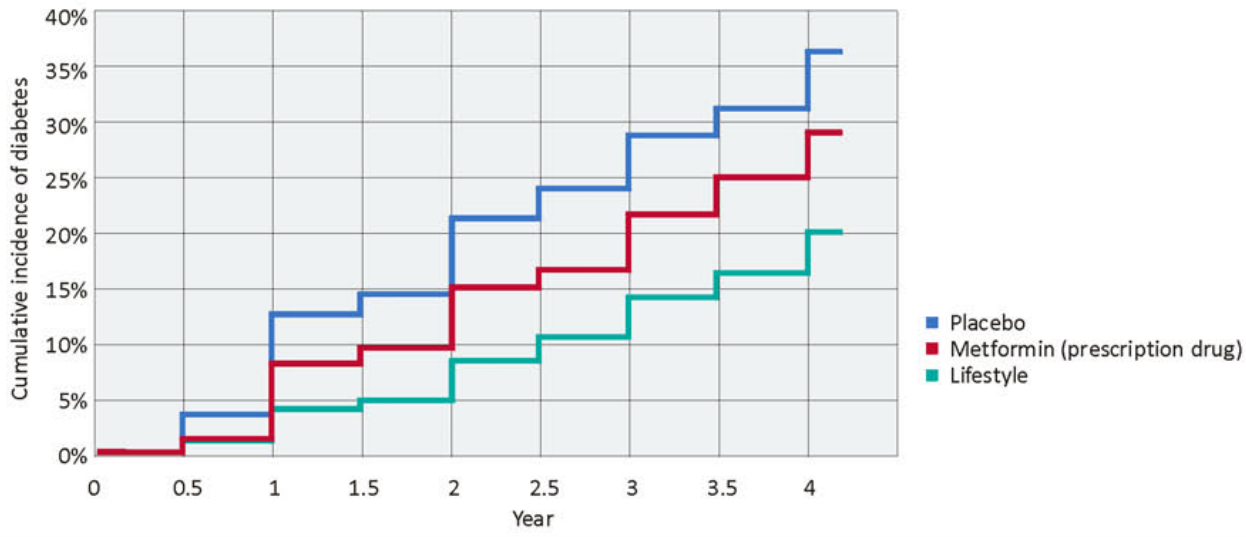
Image source: Raconteur 'Know the risks and be healthy' - 2013

As clinicians, we can only help the people with whom we consult to manage some of their risk factors (Figure 7). The people in our communities have a responsibility to take action to manage the risk factors within their own ability to control, such as lack of physical activity, being overweight and smoking. However, there are sections within our population that are not capable of taking these actions on their own. It is our responsibility as a healthcare service to provide these communities with support to enable them to do so. The benefit derived from successfully managing these lifestyle factors is likely to be greater than the benefits accrued through prescribing medication.

Lifestyle, Environment and Epidemics

Major challenges to population health have been recognised over time, e.g. John Snow's work to limit the spread of cholera; improvements in housing and nutrition and work to limit the spread of tuberculosis. Changes to lifestyle and environment have been key to tackling epidemics over the last 150 years. The challenges we face today due to obesity related diseases including heart disease, cancer and type 2 diabetes are likely to be no different. As demonstrated in Figure 8 on the following page, weight loss is the key to controlling the diabetes epidemic we now face.

Figure 8: Prevention and cure of type 2 diabetes



Source: BMJ 2002[8]

Snapshot of the health of Scotland's population in 2015

- 10,000 deaths and 128,000 hospital admissions relate to smoking
- Only 21% of the population met or exceeded five portions of fruit or vegetables daily target
- 65% of adults aged 16 years or over were overweight with 29% being obese
- Only 65% of adults aged 16 years or over met current physical activity guidelines
- There were 664.5 per 100,000 population alcohol related hospital admissions

Source: Scottish Health Survey

The concept of minimally disruptive medicine focuses on patients achieving their own goals for life and health whilst imposing the smallest possible treatment burden. The concept requires clinicians to consider the support structures patients have at home before they prescribe and it requires them to consider what treatment burden could be removed to enable the patient to achieve their goals and aspirations for life.[9] [10] [11] [12]

Prescribers are often patients too

There is evidence that doctors would choose different treatment for themselves than for their patients. For example doctors are less likely to choose a surgical option than the general population. They are also less likely to choose medication for illnesses such as depression than they would usually prescribe to their patients[13].

'..this really does involve a change of mind-set for many, including the 'gentle art of doing nothing'. We need to understand better why healthcare professionals tend to default to action and often make incorrect assumptions about what people are seeking'.[2]

From this, it has been suggested that clinicians may focus too much on achieving therapeutic objectives rather than considering inconvenience and treatment burden for the patient, however, when a clinician chooses for themselves they are aware of the daily inconvenience this may cause and how this will affect their lifestyle choices so choose the minimally disruptive option.

There is evidence that doctors would choose different treatment for themselves than for their patients

Loneliness and Health

NHS Highland's report 'Loneliness and Health' demonstrates the impact on health from loneliness and how this impacts on the wider communities' health outcomes and inequalities. The findings from this report are striking.

Having weak social relationships increases the chance of an early death to the extent that it is:

- The equivalent of smoking 15 cigarettes
- Greater than not exercising
- Twice as harmful as being obese

Source: NHS Highland 'Loneliness and Health'

80% of patients with one or more long-term condition felt lonely.[14] When this factor is combined with the challenges posed by long-term conditions and the additional treatment burden of polypharmacy, it is unsurprising that this group of people, with diminished resilience, visit the general practitioner (GP) more often and enter the prescribing cycle.

Improving resilience and addressing loneliness are important in coping with polypharmacy and allowing patients to be in control of their health.

'You should expect the doctor (or other health professional) to explore and understand what matters to you personally and what your goals are, to explain to you the possible treatments or interventions available with a realistic explanation of their potential benefits and risks for you as an individual, and to discuss the option and implications of doing nothing. You should expect to be given enough information and time to make up your mind. You should consider carefully the value to you of anything that is being proposed whether it be a treatment, consultation or diagnostic investigation and be prepared to offer challenge if you feel it appropriate'.[2]

80% of patients with one or more long-term condition felt lonely

Balancing benefits

When deciding to prescribe a medication to a patient the absolute risk reduction for commonly prescribed drugs should be used as a guide to inform patients about risk and benefits to them as individuals. The Number Needed to Treat (NNT) can be used to aid judgement as to whether prescribing a medicine is in the best interests of a patient, when considering their wishes and their pre-existing prescribed medicines.[15] NNT is the number of patients that need to be treated in order for one to benefit.

Recent figures published by National Institute for Health and Care Excellence (NICE) on some common treatments GPs prescribe demonstrate the absolute benefit of treatment in terms of their Number Needed to Treat (NNT).

Conclusion: People first, patients second

If we are to shift this balance and encourage patients to become decision makers, we will require a significant culture change within the NHS. The ideal is that the patient should be responsible for supplying their expertise of their situation and lifestyle goals. The clinician will support decisions using their expert knowledge and experience to provide the patient with all the information required to make a balanced and informed decision. This approach will change the type of work undertaken by healthcare staff and increase the capacity of the individual to make choices - supporting individuals to take responsibility to safeguard their own health as an investment in their future.

Table 1: Summary of treatment effects of commonly prescribed drugs

Intervention	Diagnosis	Outcome prevented (in one patient)	Annual NNT
Anticoagulation	Atrial fibrillation	Ischemic stroke	40
Antidepressant	Depression	Relapse of depression	4
Antihypertensive	Hypertension	Death	1,050
Aspirin	Angina	Death	192
β-blocker	Heart failure	Death	42
Oseltamivir	Influenza	Pneumonia	100
Pioglitazone	Type 2 diabetes	Major adverse cardiovascular death	145
Statin	Cardiovascular primary prevention	Cardiovascular death	1,949
Statin	Cardiovascular secondary prevention	Cardiovascular death	239

Source: Adapted from Pulse, January 2017[16]

Recommendations

Across NHS Tayside we have programmes in place that are embracing the challenge set by Realistic Medicine. The programmes all encourage patient-centred care and a shift in our ways of working to consider more proactive responses to the needs of our communities.

The Equally Well programme in Dundee has been established to address some of the personal and socio-economic circumstances that impact on people's health and wellbeing that primary care have neither the time nor sometimes skills to address. Link Workers work across four GP practices to address these unmet needs and support people to make the necessary lifestyle changes to invest in their future health. Investing in social prescribing gives alternates to medical prescribing and when medical intervention and treatment are necessary then it can build resilience, enabling people to cope with the required burden and in turn improve disease control.[17]

The Enhanced Community Support model (ECS) trialled in South Angus and Perth and Kinross for the care of frail elderly patients is a good example of shifting care upstream. This model of care recognises that older people should have access to proactive care in response to escalating health and social care requirements in the community, relevant to the needs of the person and hence increase the patient's resilience and ability to cope in their own home.

The Area Drugs and Therapeutics Collaborative hosted by Healthcare Improvement Scotland has developed materials for patients to help them to understand what the right treatment is for them as an individual. The leaflet entitled 'Medicines in Scotland: What's the right treatment for me?' is a valuable resource to begin a conversation with the patient to enable them to work with their doctor or other health care professional to understand their treatment options and how to gain the greatest benefit from treatment.[18]

In 2017/18 we recommend an increase in the availability of these resources across Tayside to begin to shift care upstream and meet people's needs in a sustainable way.

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Sexual Health and Blood Borne Viruses

Introduction

Sexual health and blood borne viruses (BBVs) - human immunodeficiency virus (HIV), hepatitis B (HBV) and hepatitis C (HCV) - remain a major public health issue. The number of individuals infected with a BBV continues to grow, and whilst there has been significant reduction in teenage conception rates, they remain high in comparison to Western Europe and sexually transmitted infections (STIs) continue to rise, especially among young people.

Many people living with BBVs continue to face stigma and social exclusion

Poor sexual health and BBVs affect people from all walks of life, however they disproportionately impact on particular communities and there is a clear association with disadvantage and poverty. Many people living with BBVs continue to face stigma and social exclusion.

The impact on the health and wellbeing for individuals living with BBVs and their carers is considerable, as are the associated costs of health and social care.

The long-term consequences of HBV and HCV are significant, with up to 85% of people infected with HCV going on to develop chronic disease; putting them at high-risk of liver cirrhosis and cancer. HCV is responsible for up to three quarters of all liver cancer cases and two thirds of all liver transplants in the developed world. There is no cure for HIV or for chronic HBV, but increasingly effective treatments that can prolong life and improve the quality of life are available. Chronic HCV is curable and Scotland is committed to its elimination. A highly effective vaccine is available against HBV.

The cost of treating BBVs has risen significantly in recent years. The estimated HIV-related lifetime costs for diagnosed patients is estimated at £360,800. In Tayside, the cost of drug treatment for HIV and HCV has risen significantly in response to better case-finding and dramatic improvements in drug therapy. Treatment as Prevention (TasP) is now recognised as an important element of a combination approach to HIV prevention and is emerging as a promising intervention in combating the transmission of HCV in people who inject drugs (PWIDs). The increasing economic burden of treatment, as well as the long-term consequences for individuals, reinforces the importance of effective primary prevention.

The refreshed Scottish Government Sexual Health and Blood Borne Virus Framework 2015-2020 continues to promote an integrated approach that encompasses prevention, testing, treatment and care. The Framework has five strategic outcomes:

- Fewer newly acquired BBV and sexually transmitted infections and unintended pregnancies;
- A reduction in the health inequalities gap in sexual health and BBVs;
- People affected by BBVs lead longer, healthier lives;
- Sexual relationships are free from coercion and harm;
- A society where the attitudes of individuals, the public, professionals and the media in Scotland towards sexual health and BBVs are positive, non-stigmatising and supportive.

In Tayside, the multi-agency Sexual Health and BBV Managed Care Network (MCN) provides strategic leadership, overseeing the planning and commissioning of effective preventative interventions as well as treatment and support. The MCN also ensures strong and cohesive partnerships across Tayside and with each of the Health and Social Care Partnerships, Alcohol and Drug Partnerships (ADPs) and the three local authorities in Tayside.

There remains a major challenge to identify individuals who may have acquired their infections decades earlier and who are not in contact with services

Prevention and Health Improvement

The MCN strives to ensure that we have a comprehensive, evidence-based approach to prevention that combines education; health promotion; behavioural interventions, early intervention; asset based approaches; as well as biomedical interventions, including testing and TasP.

The BBV Prevention Strategy developed in 2013 remains the basis for action. More recent evidence in relation HIV Pre-exposure Prophylaxis (PrEP) as well TasP for both HIV and HCV has increased the importance of these interventions. In 2016, a local Health Improvement Plan for Sexual Health and BBV in Tayside was developed and will enable the MCN to adopt a more proactive and planned approach to health improvement that will inform future investment and disinvestment strategies as well as an improved basis for collaboration with key planning partners including the ADPs and Integrated Children's Services.

The MCN commissioned TASC Scotland to undertake insight gathering with young people focussing on healthy relationships and what young people felt they needed to 'make it good'. The Tayside work is being utilised nationally to develop key messages and to support the implementation of the Scottish Government Pregnancy, Parenthood, and Young People (PPYP) strategy.

An ongoing outbreak of HIV in PWIDs in Glasgow has reinforced the need for increased awareness of HIV risk in this population, particularly those who are homeless. The importance of regular testing for BBVs, effective joint working with drug treatment services and easy access to clean injecting equipment (IEP) and Opiate Substitution Therapy (OST) are vital to ensure transmission rates in this population remain low.

Understanding and responding to the Public Health Challenge in Tayside

Under diagnosis is the major public health challenge for all three BBVs and complicated STIs. Whilst testing for HIV and HCV has increased, it is estimated that 17% of individuals infected with HIV in Scotland remain undiagnosed and half are diagnosed at a late stage of their infection. Almost half the people infected with HCV in Scotland remain undiagnosed and the majority of those chronically infected are not currently in specialist care. Significant progress has been made in diagnosing individuals with HCV in Tayside, due to the widespread introduction of dry blood spot testing.

There remains a major challenge to identify individuals who may have acquired their infections decades earlier and who are not in contact with services.

Hepatitis B (HBV)

In Tayside the number of notified cases of HBV infection has shown a rising trend in recent years. The majority of new cases are detected amongst people who were born in countries of medium or high prevalence, or whose families reside in these countries. For these individuals, infection is likely to have been acquired at birth or in childhood. The risk of chronic infection and its complications is greatly increased when infection is acquired at a young age, compared with infection acquired in adulthood. This trend, and appropriate responses, has been identified UK wide.[1]

Testing of pregnant women and completion of HBV vaccination for babies born to HBV infected mothers in Tayside is good, with 100% receiving four doses of HBV vaccine in 2015 and 100% receiving at least three doses in 2016 (final data pending).

Hepatitis C (HCV)

The prevalence of HCV amongst Scots is estimated at 0.7% of the population. In Scotland in 2015, there were 1,857 reported laboratory diagnoses of HCV infection, 11% (192) of whom reside in Tayside, 90% of these were amongst people who had been exposed to injecting drug use.[2] We have seen a decline in the number of diagnoses since 2014 however this is mirrored across Scotland.

> Tayside is widely acknowledged as a world leader in innovation and delivery of HCV care and can rightly claim to be first in class

Scotland is globally recognised for its comprehensive response to HCV and in particular translating strategic aspirations into practice on the ground. Tayside is widely acknowledged as a world leader in innovation and delivery and can rightly claim to be first in class.

The integrated approach to HCV has resulted in 78% of the estimated antibody positive population being diagnosed, whilst treatment has increased from 41 patients in 2007/08 to 174 in 2016/17 with 12.7% of those treated in prison. National treatment targets have been consistently exceeded and cure rates continue to be high. Referral and attendance rates are good at 92% and 85% respectively in 2016. Comparative data from across Scotland in the recent Needle Exchange Surveillance Initiative (NESI) report (2015/16 data), reinforces this - Tayside shows the highest rate of testing in PWIDs within the last 12 months (62% v 48%), fewer people unaware or their diagnosis (24% v 36%) and the highest reported proportion of PWID in treatment (45% v 28%).[3]

Results from a BBV testing and case-finding pilot project in general practice in Dundee were positive with increased rates of referral to specialist services, particularly for patients who were lost to follow up and improved levels of self-reported knowledge and confidence by general practitioners (GPs) and practice nurses. This work was replicated in Angus practices in 2016. It is the intention to seek its inclusion as part of the Integration Joint Boards' (IJBs) commissioning plans from 2017/18 onwards.

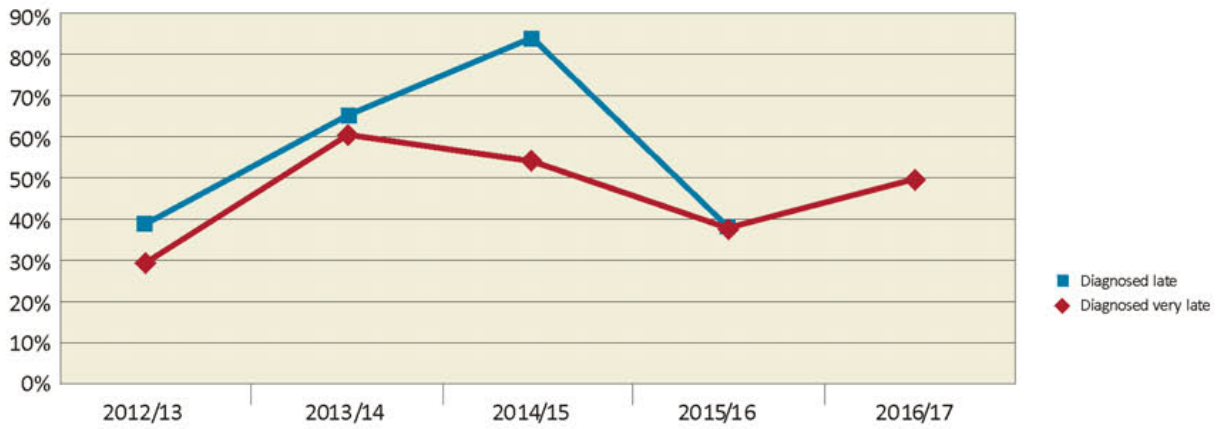
Tayside's success in tackling HCV, in particular the innovation, skill and care of the clinical team and partner organisations has resulted in it continuing to lead a number of major clinical trials. This research and audit is at the forefront of developments in practice and is a major contributor to the international body of evidence. Future research studies over the next two years will aim to eradicate HCV in Tayside by diagnosing and treating 80% of PWIDs who have HCV.

Human Immunodeficiency Virus (HIV)

More than 280 cases of HIV infection were newly identified in Scotland in 2016[4], and prevalence of HIV in the population is increasing as survival improves. Whilst not reaching the epidemic levels in the UK predicted in the 1980s, HIV infection remains a significant cause of morbidity and mortality in Scotland. We have seen a reduction in diagnoses in the last year which appears to be mirrored across the UK. This may be attributable to the introduction of TasP.

In Tayside in 2016, there were 16 new diagnoses of HIV infection.[4] Late diagnosis of HIV (Chart 1) remains an issue with 50% of our new diagnoses considered very late and at immediate risk of acquired immune deficiency syndrome (AIDS) associated morbidity and mortality. This led to the development of an HIV late diagnosis proforma, agreed with general practitioner (GP) colleagues, and a review process that will be piloted in 2017.

Chart 1: Late diagnosis of HIV in Tayside based on local data



There were an estimated 392 people living with HIV in Tayside as at 31 December 2016. 88% are attending services and 97% are receiving treatment. This compares favourably with the rest of Scotland where 89% of people living with HIV are attending services and 95% are on treatment.[4]

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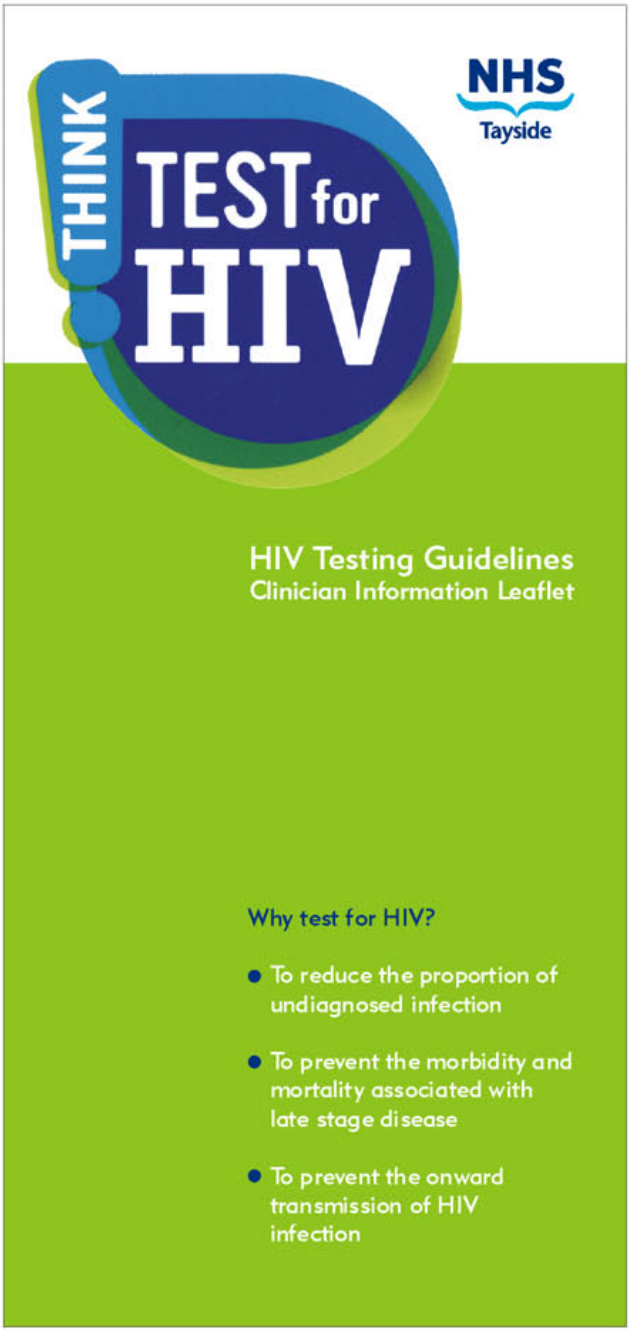
Historically, Tayside has the highest proportion of people infected in Scotland with HIV whose exposure risk was injecting drug use. New infections in this population are extremely rare due to the widespread provision of harm reduction interventions and provision of IEP. We are taking steps to ensure that the recommendations from the Glasgow outbreak are acted upon and strengthen local responses in particular for vulnerable homeless populations.

There is a rising trend in young Men who have Sex with Men (MSM) acquiring HIV, with MSM accounting for the majority of new diagnoses. The remainder of new diagnoses are in the heterosexual population. These changing patterns are important because they indicate where prevention efforts are best focussed.



Men Only Tayside (MOT)

The MOT service is a unique collaboration between NHS Tayside and Terrance Higgins Trust that aims to prevent HIV and STI transmission in gay and bisexual men; improve access to services and encourage regular testing. It combines outreach health promotion, community capacity building, peer-led education with dedicated clinical services and support for men living with HIV.

The number of MSM seen by the NHS Tayside sexual health service has increased by 85% since the introduction of the MOT service in 2012. There has been a 27% increase in attendances between 2015/16 and 2016/17. HBV vaccination and HIV testing uptake were 79% and 88% respectively. 100% would recommend the service to a friend.

Reassuringly, local data for 2016/17 has shown a 50% reduction in syphilis diagnoses from 2015/16

Sexually Transmitted Infections (STIs)

The highest prevalence of STIs is in young people aged 16-24 and in MSM. Chlamydia remains the most common STI; the highest rates of diagnoses are seen in women and those aged under 25 years with NHS Tayside having the highest recorded rates in Scotland. However, the rate of genital chlamydia, even with minor annual fluctuations, has decreased over the last decade in Tayside.

Across Scotland, there has been a 28% increase in diagnoses of gonorrhoea between 2015 and 2014. In Tayside, the number of diagnosed cases increased by 39.5% from 86 in 2014 to 120 cases in 2015.[5] A proportion of the increase in diagnoses is due to more effective testing, however, Health Protection Scotland, suggest that it is also likely that the incidence of infection has also increased. Unlike genital herpes and chlamydia, the majority of gonorrhoea diagnoses are reported in males and is thought to be largely due to an increase in transmission among MSM.

Peak numbers of infectious syphilis diagnoses (N=316) were recorded in Scotland in 2015 with almost double the number of cases reported in 2014. 96% of cases recorded were male (N=302), with the majority identifying as MSM.[6] The MCN has been monitoring infectious syphilis in Tayside following an increase in diagnoses in heterosexuals in 2013/14. Reassuringly, local data for 2016/17 has shown a 50% reduction in syphilis diagnoses from 2015/16.

Teenage conception

The significant reduction in teenage conception in Tayside has been maintained and is greater than reported for Scotland and compares with the best performance in the UK. Local data to the end of June 2016 show an overall 55.1% reduction in teenage conception rates since a peak in 2007 and a 67.1% reduction over the same time period in the youngest age group (females aged 13-15 years).

Local data to the end of June 2016 show an overall 55.1% reduction in teenage conception rates since a peak in 2007 and a 67.1% reduction over the same period in the youngest age group (females aged 13-15 years)

There is a strong link between teenage pregnancy and deprivation across all age groups. This applies across Scotland but the inequality gradient is steeper in Tayside.

The reduction in teenage pregnancy is a result of sustained action by local authorities, the voluntary sector and NHS Tayside working together to implement a clear plan that combines a range of evidence-based interventions, including early intervention in early years of life, youth development, support for parents, education and information for young people as well as improved access to sexual health and contraceptive services.

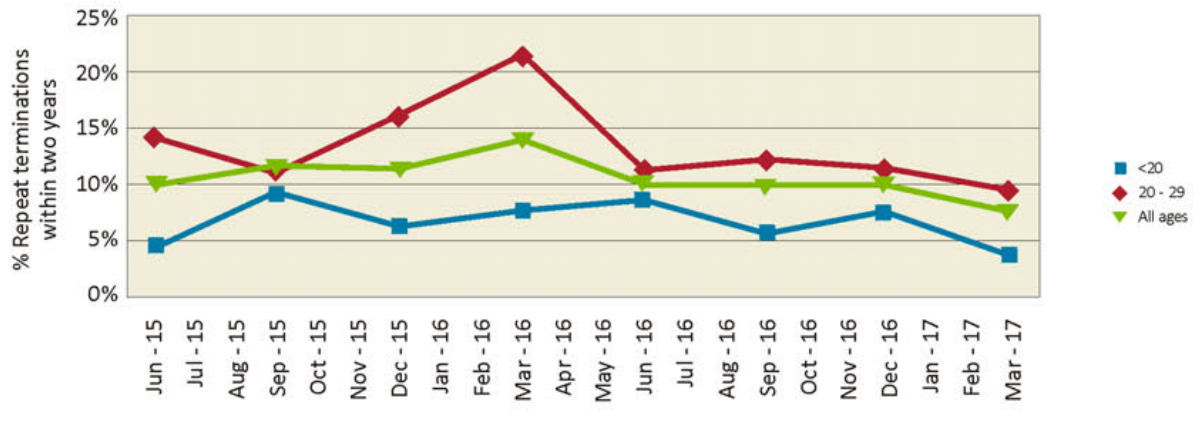
The Scottish Government published its first Pregnancy and Parenthood in Young People Strategy in 2016. It provides a renewed commitment to multi-agency action as well as a greater emphasis on healthy relationships, access to long acting reversible contraception (LARC)and support for young parents aged up to 25.

Termination of pregnancy

Tayside has the highest rates of termination of pregnancy (TOP) in Scotland (13.9 per 1000 women aged 15-44 compared to 11.6 per 1000 across Scotland in 2015). However, rates of TOP have declined overall in line with reductions seen across Scotland. Almost 60% of all terminations are in women aged 20 to 29. National data shows that Tayside remains well above the national average for repeat TOP. However, local data for rapid repeat TOP (within two years), shows a reduction to 9.5% in 2016/17 from 12% in 2015/16. It is too soon to identify if this is an ongoing downward trend (Chart 2).

The proportion of early terminations has been rising steadily in recent years, with 75.4% of all terminations performed at less than nine weeks in 2015, compared to 62.2% in 2009. There has also been a sustained increase in the use of medical methods compared to surgical terminations.

Chart 2: Rapid repeat termination in Tayside local data



What makes the difference?

The MCN has achieved transformational change in some of the most complex and challenging areas of public health. Evidence-based innovation and shared solutions fostered by mutual 'ownership' by professionals, individuals and communities deliver seamless, effective and person-centred care and tangible outcomes for individuals. Critical to its success has been the emphasis on:

- building a common vision, purpose, values and culture
- distributed leadership
- ambitious aims and robust performance management
- use of strength-based approaches to realise individual potential

These elements, coupled with the exceptional degree of cross-agency 'buy-in' have been key to reducing new transmissions, diagnosing and engaging those conventionally regarded as 'hard to reach'.

The whole systems approach to prevention, care, and treatment and the use of a programme budget to support commissioning connects the Directorate of Public Health with professionals across the system and ensures that prevention is integral to planning and delivery of person-centred care. In a very real sense, prevention is no longer just a priority for public health professionals, it is embraced by everyone.

Recommendations - challenges and priorities for the future

Delivering a comprehensive and integrated tiered approach to primary prevention.

- Appropriate HBV vaccination coverage and uptake, in particular for PWIDs
- Sustained action to reduce teenage pregnancy and securing effective leadership and local engagement for the PPYP
- Inclusive Relationships, Sexual Health and Parenthood Education (RSHP), underpinned by standards and performance indicators
- Improved awareness among young MSM of the risks of HIV
- Improving availability and uptake of LARC
- Strengthening partnership with ADPs and addictions services to ensure effective prevention programmes and increase access to harm reduction, IEP and OST
- Ensuring effective partnerships with Community Planning Partnerships (CPPs), in particular Integrated Children's Services
- Work with individuals, communities and the media to reduce stigma and discrimination associated with poor sexual health and BBV.

Reducing undiagnosed population

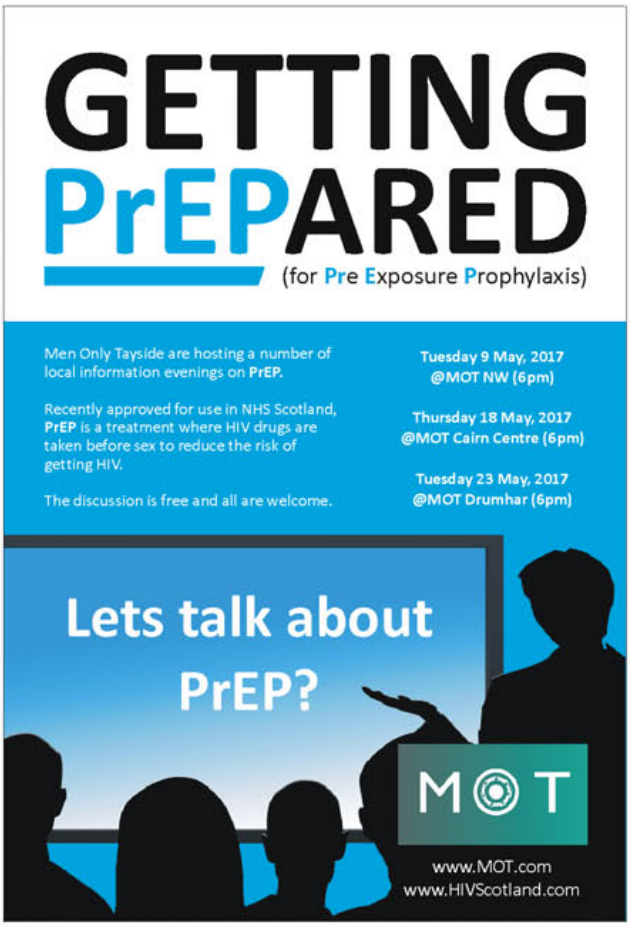
- Reducing undiagnosed HIV and late diagnosis
- Implementing effective HCV case-finding and eradication strategies.

Targeted behaviour change interventions

- Design and delivery of behaviour change interventions for high-risk behaviours, including increased engagement of women who inject drugs with sexual and reproductive health.

Effective delivery of care and treatment

- Implement PrEP for prevention of HIV in 2017 as part of a comprehensive, combination approach to HIV prevention
- Support the introduction of human papilloma virus (HPV) vaccination in MSM in 2017
- Work with prison healthcare to make sure people in custody have equitable access to testing, treatment and care
- Access to adequate resources for treatment to meet the aims of the HCV elimination strategy
- Review provision for people ageing with HIV.



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Substance Use

Substance Use

Introduction

Problem alcohol and drug use (collectively known as substance use/misuse) disproportionately affects people who live in areas of greater socioeconomic deprivation. Substance use adversely impacts health and wellbeing. For example, alcohol is known to be a causal factor in over 200 diseases and injury conditions. [1] Furthermore substance use in an individual can have wider effects on family, friends and the community. Substance use is therefore a major public health concern and is a significant cause and consequence of health inequity. Alcohol and Drug Partnerships (ADPs), which are embedded within the Community Planning Partnerships (CPPs) of the three Tayside local authorities, undertake a strategic role to develop good quality accessible services that promote the recovery of those affected (both directly and directly) by substance use. In terms of future government arrangements, ADPs and Integration Joint Boards (IJBs) were recently advised by the Scottish Government to establish closer working connections to develop greater strategic coherence across the improvement agenda for Health and Social Care Partnerships.

This section provides:

- An overview of substance use in Tayside currently
- An update on recent achievements and ongoing activities
- A look forward to future priorities

Alcohol

Alcohol is considered the drug that causes the greatest harm in Scotland. [2]

Consumption

A considerable proportion of adults continue to drink alcohol in excess of safe government guidelines.

The Scottish Health Survey showed that for Tayside during the period 2012-2015:[3]

- 29% of men and 15% of women drink alcohol at levels that are considered hazardous or harmful (over 14 units per week)

What is encouraging, however, is that it appears attitudes towards alcohol in young people are changing. The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2013 showed that in Tayside:[4]

- 40% of 13 year olds and 67% of 15 year olds report having been drunk at least once (compared to 56% and 74% respectively in 2010).
- 3% of 13 year olds and 20% of 15 year olds reported drinking alcohol in the week prior to the survey (14% and 32% respectively in 2010).

The SALSUS 2013 survey also showed that the most common sources of alcohol for under-age young people in Tayside were friends, relatives or the home either with or without permission.

Substance use is therefore a major public health concern and is a significant cause and consequence of health inequity

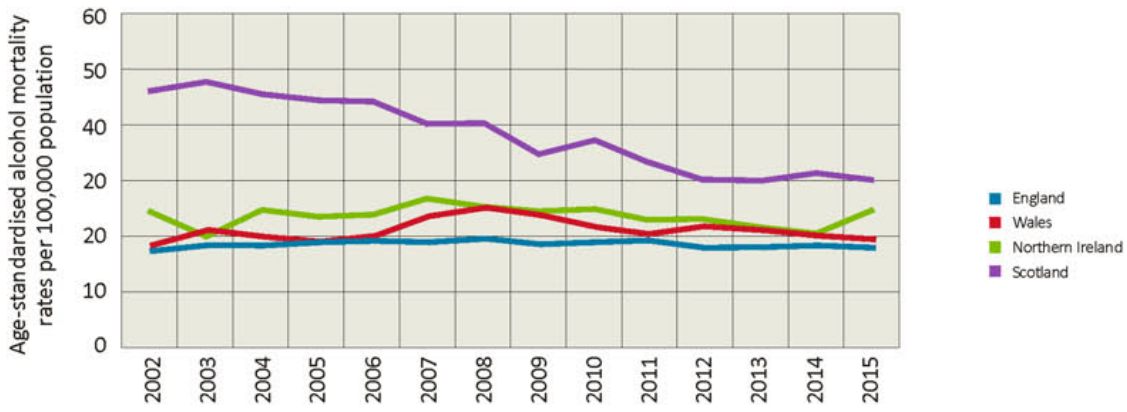
Health Harm and Inequity

Between the years of 2002 and 2012 alcohol-related mortality in Scotland decreased, however, that downward trend is now starting to stall. In addition, Scotland continues to have greater health harm as a consequence of alcohol relative to our UK neighbours (Chart 1).

Tayside has a higher rate of alcohol-related deaths (23.7 per 100,000 population in 2015) than Scotland as a whole (21.8 per 100,000 population). Local authority comparisons in 2015 showed that Dundee City is amongst the worst areas for alcohol-related death rate in Scotland (38.0 per 100,000 population).[5]

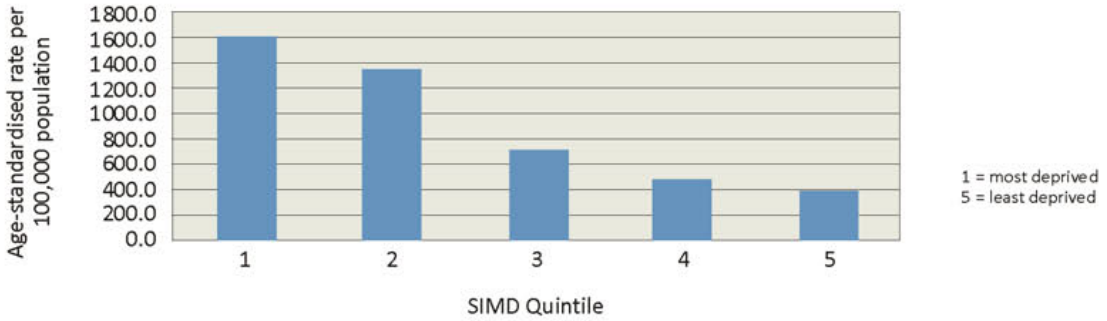
In Tayside there were 3,357 alcohol-related accident and emergency department (A&E) attendances in 2016 and 1,792 alcohol related hospital discharges in 2015/16. When considering the socioeconomic status of those attending for alcohol-related conditions a clear deprivation gradient exists (Charts 2 and 3).

Chart 1: Alcohol-related deaths in males across the UK, 2002-2011



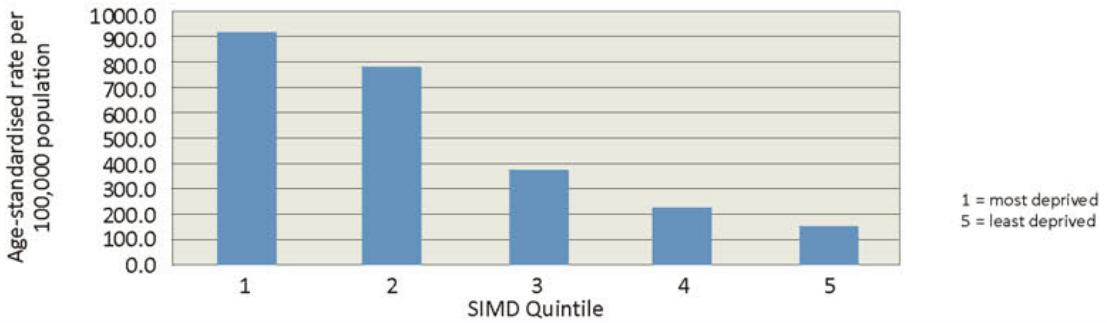
Source: Office for National Statistics, National Records of Scotland, Northern Ireland Statistics and Research Agency (February 2017)

Chart 2: Tayside alcohol-related attendances (2015) at A&E by SIMD 2016



Source: NHS Tayside Business Unit

Chart 3: Tayside alcohol-related hospital discharges (2015/16) by SIMD (2016)



Source: SMR01 (Extracted via BOXI 10/03/2017)

One in two people in Scotland reports having experienced harm as a result of someone else's drinking

Social Harm

The Scottish Crime and Justice Survey for 2014/15 reported that in just over half of violent crimes (54%) the victim thought that the offender was under the influence of alcohol.[6]

Local analysis for Dundee in 2013/14 showed where alcohol was involved in the following incidents:

- 46% of petty assaults
- 27% of breaches of the peace
- 12% of drug offences
- 21% of sexual crimes
- 23% of culpable and reckless conduct

Of note, these percentages are likely to be an under-representation of where alcohol was involved as the data are dependent on the recording officer identifying an alcohol factor. Generally, figures for Tayside are much higher and amongst the worst in Scotland for breach of the peace and common assault offences which are commonly associated with alcohol consumption.[5]

It is estimated that one in two people in Scotland reports having experienced harm as a result of someone else's drinking.[7] One in three people in Scotland reports being exposed to having heavy drinkers in their lives and people who know heavy drinkers are more likely to report experiencing harm from others drinking in private places such as the home or private parties. People who report harm from someone else's drinking also report lower life satisfaction compared to others.

Living with a problem drinker can result in relationship problems, tensions within the household, arguments and chaotic lifestyles. This can have a direct impact on children for whom there is worry, fear and uncertainty, the potential for neglect and reduced school attendance.[7]

Availability

In 2015, 20% more alcohol was sold per adult in Scotland than in England and Wales, and almost all of this (97%) was because of higher sales in supermarkets and off-licences.[8] Almost three-quarters of alcohol currently sold in Scotland is purchased from off-sales trade.

Neighbourhoods with higher numbers of alcohol outlets have significantly higher alcohol-related death rates and alcohol-related hospitalisation rates.[9] Residents of neighbourhoods with the highest availability are more than twice as likely to die from an alcohol-related death than those with the fewest outlets.[9] Furthermore, higher densities of off-sales alcohol outlets are found in the most deprived areas of Scotland.[10]

The contribution made to alcohol-related harm from off-sales outlets is greater than that of on-sales outlets.[11] Reasons for this include: generally cheaper alcohol available to buy from off-sales outlets than on-sales; large volumes obtainable from off-sales outlets and lack of supervision of alcohol consumption when purchased from an off-sales outlet.[12]

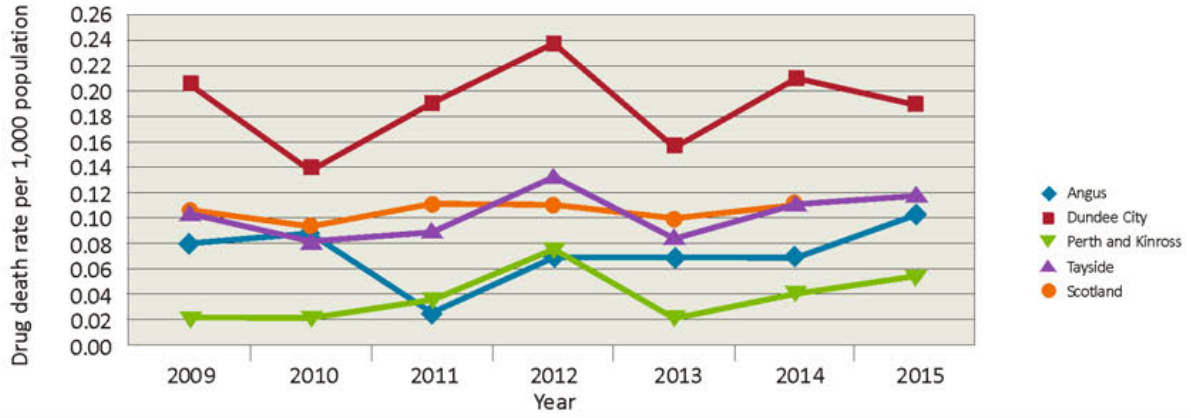
Dundee has the fourth highest alcohol outlet availability in Scotland.[9] Angus and Perth and Kinross have lower alcohol outlet availabilities than Scotland as a whole but nonetheless still have pockets of high availability.

The alcohol-related harm in a population is directly associated with alcohol consumption levels.[8] The increased availability of alcohol in the commercial and public setting results in an increased availability of alcohol in the social setting and vice versa; therefore contributing to changing the social and cultural norms that promote harmful use of alcohol.

prevalence of problem drug use in Dundee is much higher (2.8%). Similarly, although the overall rate of drug related hospital discharges was lower (137 per 100,000 population) in Tayside in 2015 compared to the rate for Scotland as a whole (143 per 100,000 population), the rate for Dundee was much higher (233 per 100,000 population).[5]

The Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS) 2013 found that 2% of 13 year olds and 7% of 15 year olds in Tayside had used illicit drugs in the last month (1% and 9% respectively in 2010).[4]

Chart 4: Tayside drug death rate per 1,000 population by local authority area 2009-2015 (and Scotland to 2014)



Source: Drug Deaths in Tayside, Scotland 2015

Population-based policy options, such as the use of taxation to regulate the demand for alcoholic beverages, restricting alcohol availability and implementing bans on alcohol advertising, have been shown to be the most effective strategies to reduce the harmful use of alcohol.[13,14]

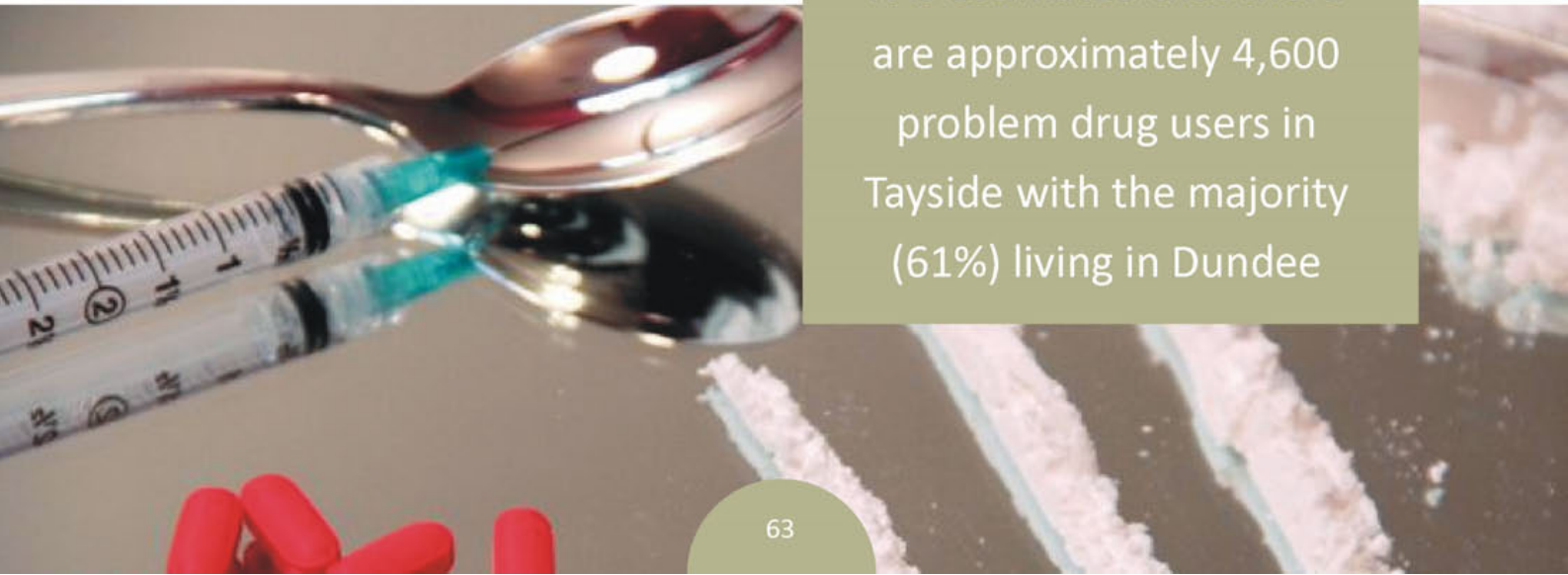
Drugs

It is estimated that there are approximately 4,600 problem drug users in Tayside with the majority (61%) living in Dundee. The prevalence of problem drug use overall in Tayside (1.7%) is comparable to the national average (1.7%). However, at a local authority level, the

In Tayside, over the period 2013-2016, there were 21.3 per 1000 maternities recording drug use compared to the Scottish rate of 13.3.[5] In 2015 the rate of child protection cases where parental drug and/or alcohol problems had been identified was 14.2 per 10,000 population aged under 18. Overall in Scotland the rate was 9.7.

The number of drug deaths in Tayside in 2015 was 48. The trends over time of drug deaths in each of the local authorities are shown in Chart 4.

It is estimated that there are approximately 4,600 problem drug users in Tayside with the majority (61%) living in Dundee



Substantial evidence links levels of availability and access to alcohol with increased consumption and harm

Activities and Achievements

Alcohol Licensing

Substantial evidence links levels of availability and access to alcohol with increased consumption and harm. Recognised strategies that are both effective and cost effective to reduce harmful use of alcohol include restricting alcohol availability. The Licensing (Scotland) Act 2005 requires Licensing Boards to promote the protection and improvement of public health in the work that they do.

The Directorate of Public Health is continuing to influence and advocate for action to reduce alcohol availability and access through involvement in the continuous development of the Overprovision Policy (Dundee) and informing the local licensing processes across Tayside.

Social attitudes to alcohol in Tayside

In 2015 the three Tayside ADPs commissioned a survey to explore local attitudes and behaviours in relation to alcohol.[15] 2078 responses were gathered. The key points arising from the survey were:

- Drinking alcohol appears to be the social norm
- People from deprived areas drink less often but consume more units when they do drink
- Males and Dundee residents reported the highest levels of consumption
- Younger people and people from deprived areas are more likely to get drunk
- There is a low awareness of Licensing Boards and uptake of opportunities to influence licensing decisions.

Alcohol Brief Interventions (ABIs)

All patients attending A&E departments and wider acute settings should be screened opportunistically for harmful or hazardous drinking, offered and given an ABI. Patients identified as dependent, and those with harmful or hazardous drinking patterns who request further help should be directed to an appropriate support service (including health, social services, local authority and voluntary sector).

In Tayside, the Scottish Government HEAT Standard was substantially exceeded in 2015/16 with 6,759 ABIs delivered against a target of 4,758.

Drug and alcohol treatment

The Scottish Government HEAT standard used to assess access to substance misuse services requires that 90% of people who needed help with their drug or alcohol problem should wait no longer than three weeks for treatment.

NHS Tayside has consistently met this standard since it was established in 2013. In the most recent quarter, from January to March 2017, 96.7% (588) clients engaged with treatment within three weeks of referral.

Preventing and Reducing Drug Deaths

Each drug death in Tayside is individually reviewed by the multi-agency Tayside Drug Deaths Review Group which then takes forward specific actions highlighted as a result of the analysis and review of drug death cases.

The most recent Report of Drug Deaths in Tayside was published in August 2016 and details the findings of the Tayside Drug Death Review Group with recommendations made to take future work forward.

There has been a year-on-year increase in the proportion of drug death victims who have suffered from problematic alcohol use

Key findings of the report and actions being undertaken to address these areas are summarised below:[16]

- **Alcohol misuse**

  There has been a year-on-year increase in the proportion of drug death victims who have suffered from problematic alcohol use. In 2015, 63% had suffered from problematic alcohol use at some point in their lives while 14 (29%) were known to be misusing alcohol at the time of their death.

  The Tayside Drug Death Group are working with alcohol services to ensure occasional drug use can be identified where possible and incorporated into the care plan of the individual.

  Information on managing a drug overdose and the provision of naloxone training will be promoted to individuals who attend alcohol services.

- **Service contact**

  67% of individuals had been in contact with specialist services in the six months prior to death but only 44% were still in touch at the time of death.

  Services will ensure that individuals with a poor history of engagement have a risk plan and support that encourages engagement, including peer support and networks.

  The use of assertive outreach models in priority cases will be explored and services will be encouraged to be trauma-focussed.

- **Raising awareness of drug overdose**

  An event is now held annually to publicise the Tayside Drug Death Report and to promote awareness of overdose and its effect on families, friends and communities.

  The multi-agency Tayside Overdose Prevention Working Group reports to the Tayside Drug Deaths Review Group and has progressed the implementation of a comprehensive action plan to tackle the many factors contributing to drug deaths. It has initiated a number of improvement activities across Tayside, taking full account of the strategic recommendations within the Tayside Drug Death report and using these to formulate improvement plans across the region.

Recovery Outcomes Tool

The Recovery Outcomes Tool was developed as a key component of the Drug and Alcohol Information System (DAISy) with the aim of providing a consistent and comparable picture of recovery for drug and alcohol service users across Scotland. Angus ADP was one of four ADPs nationally to pilot the Recovery Outcomes Tool. The evaluation of the tool was positive and determined that it could be used in relation to an individual's recovery journey to aid discussion, agree progress and identify potential gaps and support required. A Tayside Working Group has been established to roll out the project in time for the scheduled 'go live' date of April 2018.

Children affected by parental substance use

Living with a problem drinker or someone who uses substances can result in relationship problems, tensions within the household, arguments and chaotic lifestyles.

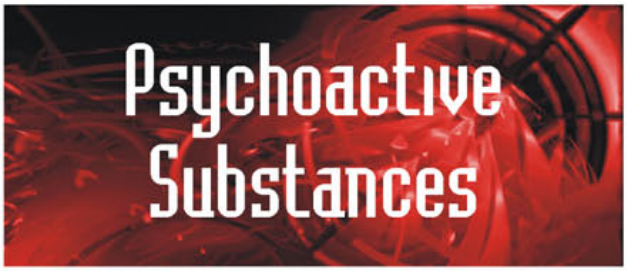
'Rory' is a learning resource for primary school aged children affected by parental drinking. It aims to help children who are affected by a problem drinking parent feel less confused or guilty about what is happening and encourage them to talk to an adult they can trust. For

children who are not affected by a problem drinking parent it aims to increase understanding, empathy and compassion to other children who may have a difficult home life.

The Rory resource was developed by Alcohol Focus Scotland and in 2016, 27 teachers were trained in the use of Rory in Angus. As a result of the training, teachers reported feeling much more confident in identifying children who may be affected by harmful parental drinking and raising the issue of parental drinking with children.

New Psychoactive Substances

The Psychoactive Substances Act 2016 came into force on 26th May 2016 and made it an offence to produce, supply, offer to supply, possess with intent to supply, import or export psychoactive substances. A psychoactive substance is any substance intended for human consumption that is capable of producing a psychoactive effect, excluding food, alcohol, tobacco, nicotine, caffeine and medical products.



New psychoactive substances continue to be a concern principally due to their unpredictability and the potential for significant adverse effects. However, their use represents a small proportion of overall drug use.

Chemsex

'Chemsex' is a term that is used to describe the use of substances, such as crystal meth and ketamine, just before or during sex. In response to recent, growing concern regarding the practice of 'chemsex' in the UK, the three Tayside ADPs in collaboration with Terrence Higgins Trust Scotland conducted a survey to gather information on drugs taken around the time of sex and associated impact in 2015.[17]

61% of 261 respondents advised that they had used alcohol directly before or during sex in the last three months with 87 reporting that use of alcohol had resulted in them having sex that they had not intended to have. 15% of 65 respondents advised that they used drugs directly before or during sex.

Future priorities

In order to deliver public health improvements within current resource constraints there needs to be a strategic shift from treatment and care towards prevention and early intervention.

Priority areas will include:

- Reducing health inequalities
- Focusing on prevention and early intervention
- Increasing prevention interventions targeting children at risk of early initiation into substance misuse
- Involving communities to co-produce change

Angus ADP is leading a review and redesign of current service provision to strengthen and enhance experience of people/families with alcohol/drugs and/or mental health problems focusing on a whole family approach model. The pilot phase demonstrated successful change and as a result the whole family approach model is in the process of being embedded more widely across services in Angus.

Dundee ADP and IJB are in the process of developing an 'Integrated Alcohol and Drug Services - Strategic and Commissioning Plan (2017-2020)' that sets out the strategic priorities and guides the delivery of a transformational improvement programme across the city. Produced to provide clear direction for services this plan will drive forward, inform and enhance the already well-established partnership approach to achieving better outcomes for people who need alcohol and drug services.

- **Reducing alcohol availability**

  The NHS Tayside Directorate of Public Health will be working closely with the newly formed Licensing Boards to provide the information and evidence required to inform the development of overprovision policy statements over the next 18 months.

A vision for the future

Tayside will progressively be a region where healthy and responsible attitudes to alcohol and other drugs prevail. Increasingly, prevention needs to become a key focus for joined-up, evidence-informed and accessible services which are designed and delivered as an equal partnership between the public, a range of organisations and professionals. The outcomes being sought should more and more be those which are important to the individuals and communities as well as the professionals. Progress needs to be monitored carefully using quantitative and qualitative information from as many sources as possible.

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