Cancer Prevention: The challenge for primary care

Linda Bauld, University of Stirling & Cancer Research UK
Outline

• Cancer prevention
• Prevalence + mechanisms for main risk factors
• Interventions
  – At the population level
  – At the individual level
• Our prevention initiative
WE NEED TO PREVENT MORE CANCERS
40% ARE LINKED TO PREVENTABLE RISK FACTORS
Cancer Prevention Ambitions

Prevent

1. Create a “tobacco free” UK by 2035 (less than 5% prevalence)
2. Stall and see a decline in the proportion of adults who are overweight and obese and see a significant decline in the proportion of children who are overweight and obese
3. Reduce overall consumption of alcohol with an emphasis on hazardous and harmful drinking
4. Stall or reduce the incidence of melanoma, through limiting harmful UV radiation exposure
Smoking and Cancer

- Tobacco use is the leading preventable cause of cancer, accounting for 64,500 cases in the UK each year.
- Smoking cessation is relevant for primary and secondary prevention.
- Preventing smoking uptake is also important in reducing tobacco-related cancers in the future.
Declining smoking rates

Lung cancer rates are falling in males but rising in females.

Smoking rates in women were still rising until 1970 then fell more slowly than smoking in men.

Female lung cancer rates are still rising.

Cancer-smoking link first demonstrated.
Tobacco TV ads banned.
Tobacco tax rises.
Tobacco print and billboard ads banned.
Smoking ban in closed public places.
Nicotine & tobacco

- Two thirds of smokers in the UK initiate tobacco use before the age of 18
- They start for a range of reasons but keep smoking primarily because of nicotine dependence
- “Smokers smoke for the nicotine but die from the tar” (Prof Michael Russell, 1979)
- Lab-based research has illustrated both the dependence forming nature of nicotine and the other harmful constituents in tobacco
Alcohol and Cancer

- Alcohol is responsible for around 12,800 cancers in the UK every year.
- A large proportion of head and neck cancers are caused by alcohol – e.g. 30% of UK mouth cancers.
- But because the underlying risk is higher, alcohol is responsible for more cases of breast and bowel cancer – a combined total of around 8,000 cases a year.

![Diagram showing alcohol's effect on cancer]

**ALCOHOL CAN CAUSE 7 TYPES OF CANCER**

- Mouth & Upper throat
- Larynx
- Oesophagus
- Breast (in women)
- Liver
- Bowel

Larger circles indicate cancers with more UK cancer cases linked to drinking alcohol.
Alcohol consumption has doubled since 1960
Variations in alcohol-related mortality and drinking patterns by deprivation
Mechanisms

ONE WAY ALCOHOL CAUSES CANCER

ETHANOL (ALCOHOL)

ADH is an enzyme that converts ethanol into acetaldehyde.

IF A SMALL AMOUNT OF ALCOHOL IS DRUNK...
The body can process it, so that it passes through without doing much damage.

ALDH is an enzyme that converts acetaldehyde into acetate.

People with mistakes in the genetic code of ALDH can’t break acetaldehyde down – they are more prone to certain cancers. Mistakes in ALDH are common among Asian populations.

IF A LARGE AMOUNT OF ALCOHOL IS DRUNK...
The body can’t process it fast enough, so there’s a build-up of acetaldehyde. This is toxic and causes DNA damage.

ACETALDEHYDE can cause:
- Mistakes in DNA
- Chromosome rearrangements
- DNA to bind and form clumps

ACETATE
Energy that the body can use
Obesity and Cancer

- Overweight and obesity is responsible for around 18,100 cancers in the UK every year.
- If current trends continue, it will lead to a further 670,000 cancer cases over the next 20 years.
- Overweight and obesity is linked to some of the most common types of cancer like breast and bowel cancer—and some of the hardest to treat like pancreatic and oesophageal cancer.

Being overweight could cause 10 types of cancer

- Oesophagus
- Breast after menopause
- Liver (number of cases not available)
- Pancreas
- Kidney
- Bowel
- Womb

Being overweight may also cause gallbladder, aggressive prostate and ovarian cancer.

Larger circles indicate cancers with more UK cancer cases linked to being overweight or obese.
Trend in severe obesity among adults
Health Survey for England 1993 to 2014 (three-year average)

Prevalence of severe obesity

Adult (aged 16+) severe obesity: BMI ≥ 40kg/m²
Prevalence of obesity among children
National Child Measurement Programme 2014/15

Around one in ten children in Reception is obese (boys 9.5%, girls 8.7%)

Around one in five children in Year 6 is obese (boys 20.7%, girls 17.4%)

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
Obesity prevalence by deprivation decile
National Child Measurement Programme 2014/15

Child obesity: BMI ≥ 95th centile of the UK90 growth reference
Childhood Obesity

How does obesity in childhood affect cancer risk as an adult?

An obese child is around 5 times more likely to be obese as an adult.

Excess weight as an adult increases risk of up to 10 cancers.

Increased risk of cancer.

It is possible overweight children may be at increased risk of cancer as adults, regardless of what they grow up to weigh, but the evidence isn’t clear.

Let’s beat cancer sooner: cruk.org/health

Source: cruk.org/childhoodobesity
How Could Obesity Lead to Cancer?

1. **Oestrogen**
   - After the menopause, oestrogen made by fat cells can make cells multiply faster in the breasts and womb, increasing the risk of cancer.

2. **Insulin and Growth Factors**
   - Excess fat can cause levels of insulin and other growth factors to rise, which can also tell cells to divide more rapidly.

3. **Inflammation**
   - Cells in fat called macrophages release chemicals called cytokines, encouraging cells to divide (including cancer cells).

There are other theories too, but these are the main ideas being studied. More research is needed to understand this in more detail.
What can we do?

1. Raise Awareness
Raising awareness

• Cancer Research UK is working to raise awareness of the links between alcohol and cancer
• As in other countries, current knowledge levels are low, compared to the understanding of the links between tobacco use and cancer, for example
• Work we have recently commissioned suggests (as in Australia) that individuals who know the links between alcohol and cancer are...

More supportive of effective population level alcohol policies
Primary responsibility for tackling alcohol related harms is seen to rest with individuals, the alcohol industry, and the national government.

More than 4 in 5 people want to know about the health harms associated with alcohol.

Around 1 in 10 people recalled cancer as a potential health condition resulting from drinking too much alcohol.*

10.8% of men and 15.2% of women who drink accurately identified the maximum daily units they should not exceed, and reported using this guideline to keep track of their own drinking.*
AIM: To measure public awareness of the link between obesity and cancer in the UK adult population

METHODS:
• Online cross-sectional survey
• 3293 participants (adult, UK-wide)

KEY FINDINGS: Low levels of awareness with only 1 in 4 linking obesity and cancer when unprompted
OB___S___Y causes cancer

Guess what is the biggest preventable cause of cancer after smoking.
What can we do?

1. Advocate for population level policies
The future of millions of children, the sustainability of the NHS, and the economic prosperity of Britain all depend on a radical upgrade in prevention and public health

Simon Stevens “NHS Five Year Forward View”
Along with the British Liver Trust & other partners, we funded the development of an independent alcohol strategy for the UK, *Health First*, published in 2013. Endorsed by over 70 organisations & developed by a ‘civil society’ group of researchers, clinicians & advocates, it is now used by the Alcohol Health Alliance as a blueprint for alcohol policy in the UK. Limited progress has been made in implementing its recommendations but it sets out a longer term vision.
Tackling obesities: future choices

- Investment in early life interventions
- Controlling the availability of and exposure to obesogenic food and drink
- Increased walkability/cyclability of the built environment
- Increasing responsibility of organisations for health of employees
- Targeting health interventions for those at high risk or already obese

Signposting healthier choices through labelling

23 companies, representing two-thirds of pre-packaged food, have committed to adopt and implement a voluntary Front of Pack nutrition labelling scheme.
Reformulation: creating a healthier food supply

- **50% decrease in salt**
- **40% reduction in fat**
- **50% decrease in salt**
- **30% less sugar**
- **70% reduction in saturated fat**
- **7% reduction in energy**
THE OBESITY PROBLEM IN SCOTLAND

Nearly 40% of all calories are purchased as a result of price promotions.

7 in 10 adults in Scotland support banning supermarket promotions on unhealthy food.

LET’S BEAT CANCER SOONER
cruk.org/ScaleDownCancer
Fiscal measures

- Health-related food taxes now in place in France, Hungary, Finland, Norway, Mexico, some US states and some South Pacific islands (mostly sugary drinks)

- In Mexico a 10% tax on sugary drinks linked to ~ 10% decline in purchases

- Implementation of UK soft drink industry levy, still facing considerable opposition ....
Exposure to food advertisements increased subsequent energy intake in all children.

The increase was greater in obese children (155%) and the overweight children (101%) than the NW children (89%).

‘Ad Brake’ Study

**AIM:** To investigate how children engage with unhealthy food advertising on television

**METHODS:**
- Children aged 8-12
- 4 English schools, 2 Scottish schools
- 25 focus groups, 137 children in total
JUNK FOOD TV ADVERTS RESULT IN CHILDREN'S "PESTER POWER"

“I asked mum if I could have it and she said ‘no’... I kept trying and she finally said ‘yes’.”
Girl, Primary 5

“I saw this sweet cake I'd like... I was like, ‘you’ve got to buy that by tomorrow’.”
Boy, Year 4

“Mummy, can I please buy this? Can I please buy this? Can I please buy this?”
Girl, Year 6
Ad Brake Key Findings

This study has shown that, despite current regulations, children are still engaging with junk food advertising on television and it is influencing their behaviour.

As a consequence, if public health policy aims to reduce the intake of junk food in the UK in the future, young people’s current exposure to junk food adverts will need to be addressed.
Policy priorities

WHAT WE NEED TO TACKLE CHILDREN'S OBESITY

JUNK FREE TV

SUGARY DRINKS LEVY

REFORMULATION OF EVERYDAY FOOD

LET'S BEAT CANCER SOONER
To act now, visit cruk.org/junkfreetv
What can we do?

1. Support individuals
Effect of general practitioners' advice against smoking

M A H RUSSELL, C WILSON, C TAYLOR, C D BAKER

British Medical Journal, 1979, 2, 231-235

Summary and conclusions

During four weeks all 2138 cigarette smokers attending the surgeries of 28 general practitioners (GPs) in five group practices in London were allocated to one of four groups: group 1 comprised non-intervention controls; group 2 comprised questionnaire only controls; group 3 were advised by their GP to stop smoking; and group 4 were advised to stop smoking, given a leaflet to help them, and warned that they would be followed-up. Adequate data for follow-up were obtained from 1804 patients (88%) at one month and 1697 (75%) at one year. Changes in motivation and intention to stop smoking were evident immediately after advice was given. Of the people who stopped smoking, most did so because of the advice. This was achieved by motivating more people to try to stop smoking rather than increasing the success rate among those who did try. The effect was strongest during the first month but still evident over the next three months and was enhanced by the leaflet and warning about follow-up. An additional effect over the longer term was a lower relapse rate among those who stopped, but this was not enhanced by the leaflet and warning about follow-up. The proportions who stopped smoking during the first month and were still not smoking one year later were 0.3%, 1.6%, 3.3%, and 5.1% in the four groups respectively (P < 0.01).

The results suggest that any GP who adopts this simple routine could expect about 20 long-term successes yearly. If all GPs in the UK participated the yield would exceed half a million co-smokers a year. This target could not be matched by increasing the present 50 or so special withdrawal clinics to 10 000.

Introduction

A potentially highly effective approach to smoking in Great Britain remains virtually untapped—namely, collective effort by all 20 000 and more general practitioners (GPs). Over 90% of adults visit their GP at least once in five years, the average number of attendances exceeding three in a year, and smokers attend at least as often as non-smokers. Thus GPs see over 18 million of the 20 million smokers in Britain at least once every five years, and most of them much more often. Although mass media may be used to confront smokers on a similar scale, face-to-face communication may be more persuasive, especially for the less-well-educated majority, among whom anti-smoking campaigns have been less effective.

The role of special withdrawal clinics is limited by the size of the problem. They also attract relatively few smokers, and those who do attend seem to be the most difficult cases, who are highly dependent and have less chance of success. GPs, on the other hand, see all kinds of smokers, including those who are more likely to succeed and will not necessarily need intensive treatment and support. The potential of GPs working individually is so immense that a genuine success rate of even 5% nationally would be more useful than the higher success rates obtained by more intensive methods at specialist clinics.

In chest clinics, screening clinics, and hospitals, straightforward, firm advice to stop smoking, without any accompanying treatment or support, may be as effective as protracted treatment at special withdrawal clinics. Attempts by GPs to persuade patients to stop smoking have had varied results, and it is not clear what the average long-term success rate would be if simple but firm advice to stop smoking were given routinely by GPs to all their patients who smoke cigarettes. We therefore decided to test this. A printed instruction leaflet was given to some patients to see whether this would increase compliance.

Subjects and methods

DOCTORS

Twenty-eight of the 28 doctors in five group practices in London took part; the remaining doctor, who was a smoker, declined. A further nine doctors participated while serving as locums. Of the 28
Very Brief Advice for Smoking

Very Brief Advice on Smoking
30 seconds to save a life

ASK
AND RECORD SMOKING STATUS
Is the patient a smoker, ex-smoker or a non-smoker?

ADVISE
ON THE BEST WAY OF QUITTING
The best way of stopping smoking is with a combination of medication and specialist support.

ACT
ON PATIENT’S RESPONSE
Build confidence, give information, refer, prescribe.
They are up to four times more likely to quit successfully with support.

REFER THEM TO THEIR LOCAL STOP SMOKING SERVICE

Complete NCSCT VBA module: www.ncsct.co.uk
• Advice increases quit attempts by 24%
• Offering support on how to quit increases them by 68% to 117%
• Direct comparison offer help vs offer advice increases quit attempts by 39% to 69%
and .... E-cigarettes
To vape or not to vape? The RCGP position on e-cigarettes

Dr Richard Roope, RCGP and Cancer Research UK Clinical Champion for Cancer

Smoking tobacco is the single largest cause of preventable illness and premature death, being responsible for around 100,000 deaths a year in the UK. Smoking accounts for 27% of all cancer deaths, 35% of all respiratory deaths and 13% of all circulatory disease deaths. It is in this context that smoking cessation is one of the most effective health interventions. Until recent years the main tools to support those trying to give up smoking have been nicotine replacement therapy, and oral bupropion or varenicline. Research shows that professional support alongside medication has been the most effective approach. (8% success rates at one year, compared with 3% in those who attempt to quit unaided).

ENDS are battery-powered devices that allow the inhalation, or “vaping” of an aerosol containing nicotine, with the option of flavouring. They became available in 2004, following their invention in China in 2003, and global use has increased year on year. By May 2016 2.8 million adults in Great Britain were using ENDS. Of these, approximately 47% were ex-smokers and 51% were using both cigarettes and ENDS.
“While you’re here, I just wanted to talk about your weight…”
said the doctor to their patient.

The BWEL (Testing a Brief intervention for WEight Loss in primary care) trial tested the effect of GPs advising people who are overweight about losing weight. At the end of a consultation about another health problem, GPs spent just 30 seconds advising their patient that the best way to lose weight was to attend a weight loss programme and offered an NHS referral to a weight-loss group in their local community.

<table>
<thead>
<tr>
<th>SECONDS</th>
<th>ATTENDED</th>
<th>WEIGHT LOSS</th>
<th>LOST 5%</th>
<th>PATIENTS AGREED</th>
</tr>
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<tbody>
<tr>
<td>to carry out this brief opportunistic intervention.</td>
<td>the weight management programme they were referred to.</td>
<td>on average after 1 year compared with 1.04kg in the control group.</td>
<td>of their bodyweight over 12 months.</td>
<td>that the conversation with their doctor was appropriate and helpful.</td>
</tr>
</tbody>
</table>

25% | 2.4 kg 5.3 lb | 4 out of 5

Conclusions of the BWeL trial

- Most patients find very brief interventions related to their excess body weight very acceptable.
- 1 in 500 people find it unacceptable and unhelpful.
- No one found it very unacceptable and very unhelpful.
- A very brief intervention of offering help, immediate booking, and creating accountability can motivate over 40% of unselected patients to attend a weight management programme.
- This intervention could reduce the weight of the population of people who are obese by 1.5-2.5kg.
Even small reductions in obesity could prevent cancer and save money.

Reducing being overweight and obese by 1% every year could...

Avoid 64,200 cases of cancer over the next 20 years.

Save £40m in the annual cost of NHS cancer care.

Avoid 7,300 cases of cancer annually from 2035.
Cancer Prevention Initiative

- National Leadership
  - Cancer Prevention Champion & Advisory Board
- Innovation
  - “Sandpit Workshops” Grants up to £20,000
- Action
  - Policy Research Centre for Cancer Prevention
- Sustainability
  - Cancer Prevention Fellowships
Primary Care Advice

AIM: To investigate the advice given by primary care professionals on alcohol and weight: for alcohol for examole, is there parity, are the new CMO guidelines being used, and what are the barriers.

METHOD: National cross-sectional survey of GPs and nurses including in Wales. The study will be carried out by the PRCP. Publication expected late 2017

KEY MESSAGES: Highlight the current situation re. brief advice on alcohol and weight in primary care, awareness and use of guidelines and recommendations to overcome existing barriers

POLICY GOALS: Raise awareness of alcohol and overweight and obesity and cancer. Support the new CMO guidelines and better support for cancer prevention in primary care.
Thank you

Linda.Bauld@stir.ac.uk
Linda.Bauld@cancer.org.uk