

Diabetes Prevention Strategies in 2020

The 2020 Vision of a GP with £2million spare cash

Prevention Strategies

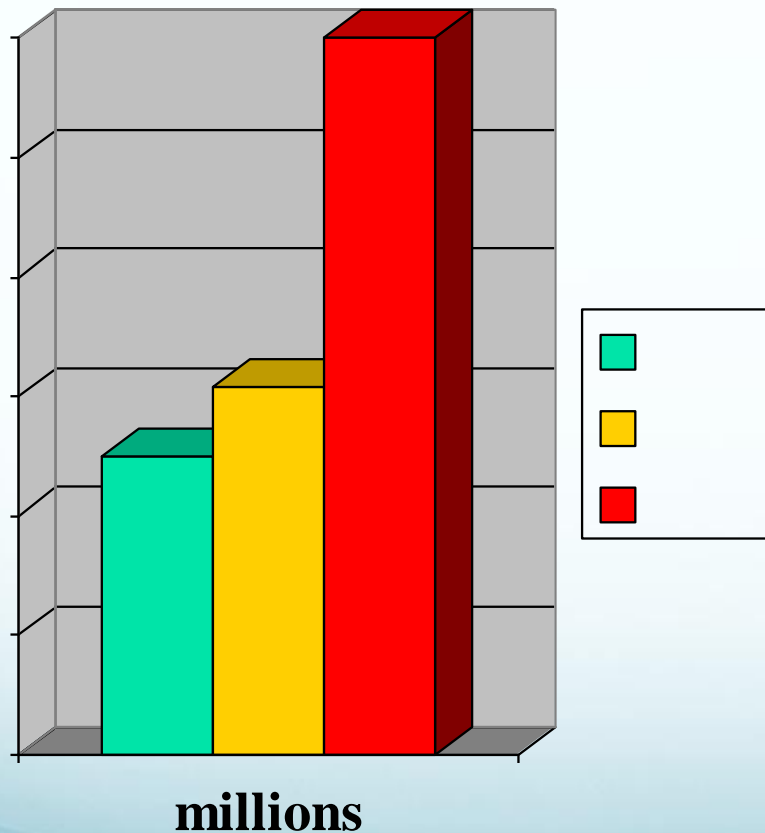
- **Strategy:** A set of essential measures believed sufficient to control a health problem.
- The word prevention embodies the goals of medicine: to promote health, to preserve health, to restore health when it is impaired, and to minimize suffering and distress.

source: Last M, 1995: Dictionary of epidemiology.

Preventive strategies: approaches in the design

- A **population-based strategy**, involving altering the lifestyle and environmental determinants of Type 2 diabetes.
- A **high-risk strategy** applying preventive measures on individuals identified as high-risk for Type 2 diabetes.

Magnitude of the Problem



- The number of people with diabetes will nearly double within the first quarter of this millennium.

World Health Report, 1997;
Geneva: WHO.

Why should we bother to prevent diabetes?

- To alleviate the economic burden.
 - Cost £10 billion per annum to the NHS
- To reduce human suffering.
 - Leading cause of blindness in the UK
 - 100 amputations per week
- To prevent morbidity and mortality from diabetes-related CVD.
 - 24000 premature deaths per year

Pre-Diabetes: a golden opportunity

- Long pre-clinical phase – pre diabetes- of up to 12 years provides opportunity for intervention to prevent progression
- 20% of population has pre-diabetes
- Without intervention 66% of those with pre-diabetes will develop diabetes in 6 years
- Lifetime risk of developing diabetes is 33%

Levels of prevention in Type 2 diabetes

- **Primary:** Includes activities aimed at preventing diabetes from occurring in susceptible populations or individuals.
- **Secondary:** Early diagnosis and effective control of diabetes in order to avoid or at least delay the progress of the disease.
- **Tertiary:** Includes measures taken to prevent complications and disabilities due to diabetes.

Types of interventions

- **Behavioural interventions: including changing diet and increasing physical activity.**

And/or

- **Pharmacological interventions: utilising pharmaceutical agents to improve glucose tolerance and insulin sensitivity.**

And/or

- **Surgical Interventions: Gastric bypass surgery**

Behavioural interventions

- Several studies has shown that diet and physical activity reduced the incidence of Type 2 diabetes.
- Example: The Swedish Malmo study showed that diet and exercise for 5 years in men with pre-diabetes reduced the incidence of Type 2 diabetes by 50%.

Eriksson et al, Diabetologia 1991; 34: 891-8

Examples

- **The DaQing Chinese study showed that over 6 years there were significant reductions in the incidence of diabetes in subjects with pre-diabetes who were randomised to diet (31%) , exercise (46%), or combined diet-exercise treatment groups (42%).**

Pan et al, Diabetes Care, 1997; 20: 537-44

Examples- Cont

- **The Finnish Diabetes Prevention Study showed that Type 2 diabetes can be prevented by changes in the lifestyles of high-risk subjects (middle-aged, overweight subjects with IGT). The risk of diabetes was reduced by 58% in the intervention group. The cumulative incidence was 11% in the intervention group compared to 23% in the control group.**

Tuomilehto et al. NEJM, 2001; 344: 1343-50

Motivational Interviewing

A simple and effective way of motivating sustained change and commitment to a specific goal.

Pharmacological interventions

- Several studies examined the effects of various therapeutics in the prevention of diabetes.
- The landmark US Diabetes Prevention Program study included an arm in which participants were treated with metformin which resulted in a 31% reduction in the incidence of diabetes
- Consider a polypill – aspirin, statin, metformin??

Surgery

- **The Swedish Obesity Study included 1879 patient pairs in which one member was surgically treated and the other received did not.**
- **1 year wt loss was 28kg – surgery group compared to 0.5kg in non surgical group.**
- **8 year incidence rates of diabetes reduced 5 fold in the surgical group compared with the non surgical group.**

The Patient Journey

- **It's 2020**
- **The National Screening Committee have now approved a selective population screening programme for pre-diabetes and diabetes**

- **2 stage process**
- **Stage 1: Qdiabetes risk score available on all clinical software – primary and secondary care**
- **Automatic data extraction**
- **Stage 2: High risk (14%, 1 in 7) sent letter invitation for Hba1c test**

- **Meet Bob and Jane**
- **Couple in their 50s, living in Hertfordshire**
- **Both received a screening letter inviting them to have a blood test to screen for diabetes/pre-diabetes**
- **Invitation to pop down to the local diabetes prevention suite located in the newly opened Hub down the road – no appointment necessary**

- **They go to the hub the next day – passed it a few times, lovely looking building, been meaning to go in.**
- **Greeted by a friendly receptionist who directs him to the diabetes prevention suite– no wait for a blood test.**
- **She tells then they are free to make use of all the available facilities.**

- **There's a diabetes awareness event on that morning and a healthy eating session on the week after.**
- **The couple stay for the morning and return home empowered – one of the most informative mornings they've had run by a motivational speaker from Public Health**
- **They have both also decided that they're going to sign up to an exercise class run at the local gym**

- **A few weeks later they receive their results letters:**
- **Bob has pre-diabetes**
- **Jane may have diabetes so is invited for a second blood test**

Bob

- **Is enrolled into the national diabetes prevention programme.**
- **Contacts a specialised diabetes navigator who signposts him to self help groups and community activities**
- **He now visits the hub most weeks – the onsite café serving healthy snacks is a good place to meet people and share information.**
- **He becomes a regular volunteer and advocate**
- **He never develops diabetes**

Jane

- **Has a confirmed diagnosis of diabetes after a second blood test.**
- **Doesn't need to see her own GP.**
- **Instead she is looked after at the diabetes centre in the hub by a range of professionals – GP diabetes champion, specialist nurse, dietician, podiatrist, social worker, volunteers, Diabetes UK representative, community pharmacist, exercise specialist.**
- **She has a 1:1 session with a motivational interviewer who helps her set goals and maintains regular phone contact.**
- **She never develops any complications.**

And the couple live happily ever after

- **Motivated**
- **Supported**
- **Empowered**
- **Listened to**

A few buzz words and phrases for 2020

- **Multi-specialty hub**
- **Prevention focus**
- **Social prescribing**
- **Motivational interviewing**
- **Behaviour change**
- **Community Champions**

- **Use of technology**
- **Taking education to the patient**
- **Supportive self management**
- **Mental health support**
- **Maxmising the potential of workplaces**
- **NDPP**
- **New Programmes – Walk away from diabetes**

- **Regulating the food industry - advertising, labelling, fat and sugar content of food, food tax, portion size**
- **Social policies to promote physical health**
- **Parliamentary diabetes support advocate**
- **Expanding the public health table**
- **Urban planning**
- **Transport policies**
- **Food in Schools**

- **Train health care professionals to think and work outside of their traditional roles**
- **Inter-sectoral co-operation**
- **Co-ordinate prevention efforts**
- **Don't fixate on who's job it is**

And what happened to that 2 million pound investment....

- Prevented 9700 cases of T2DM per year through finding pre-diabetes and developing multi-collaborative interventions.
- Gross saving of 40 million after 4 years.

**Let's transform the NHS into a
health service rather than
continue it as a
sickness service**