NCD Prevention: The historical perspective and vision for the future

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THE PROBLEM

• Heavy burden of NCD’s
• Inequalities (geographic, population groups)
Figure 1.1a Deaths by cause, men, latest available year, Europe

- Respiratory disease: 7%
- Injuries and poisoning: 12%
- Other cancer: 11%
- Lung cancer: 6%
- Colo-rectal cancer: 2%
- Stomach cancer: 2%
- Other CVD: 11%
- Coronary heart disease: 21%
- Stroke: 11%
- All other causes: 17%
Fig. 23. Premature mortality from ischaemic heart disease in the European Region, last reported data, 2006–2010

Source: European Health for All database (6).
Myths about chronic noncommunicable diseases and their prevention

• Diseases of mainly old people
• Diseases of men
• Causes are genetic
• Difficult of prevent
• Expensive to prevent
• Prevention may help the next generation
• ”Diseases of affluence”
• Individual’s responsibility
Figure 1.1b  Deaths by cause, women, latest available year, Europe

- Coronary heart disease: 22%
- Stroke: 17%
- Other CVD: 15%
- Other cancer: 9%
- Lung cancer: 2%
- Colo-rectal cancer: 2%
- Breast cancer: 3%
- Other causes: 18%
- Injuries and poisoning: 5%
- Respiratory disease: 6%
NONCOMMUNICABLE DISEASES HAVE MOVED TO POORER AND POORER COUNTRIES AND WITHIN COUNTRIES NCD’S AND THEIR RISK FACTORS HAVE MOVED TO LOWER SOCIO-ECONOMIC SEGMENTS OF THE POPULATION
NCD prevention effective

• Most NCD’s are from medical point of view to great extent and to late in life preventable diseases

• Treatment of NCD’s is possible, but the big potential from public health point of view is in population based prevention!

• Population based prevention through influencing NCD related lifestyles (through health promotion and policies) is the most cost-effective and sustainable way to improve public health!
The effects of prevention (risk factor reduction) are (particularly for cardiovascular diseases and diabetes)

• surprisingly rapid and

• concern also relatively old ages
Rapid impact of risk factor changes on CHD and diabetes rates

• Stopping smoking and AMI risk
• Introduction of smokefree restaurants
• Cholesterol lowering in lipid trials
• Lowering of T2 diabetes rates in diet/PA interventions
• Changes on population level (Finland/North Karelia, Poland etc.)
Introduction of smokefree restaurants: Impact on AMI (Acute Myocardial Infarction) rates

<table>
<thead>
<tr>
<th>Reviews</th>
<th>Amirate reduction</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meyers et al. (2009):</td>
<td>-17 %</td>
<td>(11 studies)</td>
</tr>
<tr>
<td>Mackey et al. (2010):</td>
<td>-10 %</td>
<td>(17 studies)</td>
</tr>
<tr>
<td>Lin et al. (2013):</td>
<td>-13 %</td>
<td>(18 studies)</td>
</tr>
</tbody>
</table>
DIABETES PREVENTION STUDY, FINLAND

Cumulative incidence of T2D, %

Follow-up time, years

Control

Intervention

Intervention ceased

Lindström et al, Lancet 2006;368;1673-79

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Change in age-adjusted mortality rates
Finland, males aged 35–64 (per 100 000 population)

Gain of some 10 healthy years in Finnish population

<table>
<thead>
<tr>
<th>Rate per 100 000</th>
<th>1969-1971</th>
<th>2006</th>
<th>Change from 1969-1971 to 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes</td>
<td>1328</td>
<td>583</td>
<td>-56%</td>
</tr>
<tr>
<td>All cardiovascular</td>
<td>680</td>
<td>172</td>
<td>-75%</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>489</td>
<td>103</td>
<td>-79%</td>
</tr>
<tr>
<td>All cancers</td>
<td>262</td>
<td>124</td>
<td>-53%</td>
</tr>
</tbody>
</table>

Gain of some 10 healthy years in Finnish population
The "natural experiment" in Poland (also in Czech, Slovakia, Hungary and Slovenia) in the 1990’s (Zatriski, Campos & Willet 2008)

- The market transformation in early 1990’s corresponded with a rapid and remarkable decline in CHD
- The decline occurred in both sexes and in all population groups
- "These countries had probably the most rapid decrease in CHD ever observed”
- The market transformation gave rise to fundamental changes in diet: butter and animal fats became more expensive, vegetable oil consumption doubled or tripled
- The decline was particularly associated with consumption of oils rich in alpha-linolenic acid (rapeseed and soyabean oils)
Trends in premature mortality from diseases of the circulatory system in countries and subregions in the European Region, 1980–2010

Source: European Health for All database (6).
Change in coronary heart disease mortality in North Karelia from 1969 – 71 to 2006 according to age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>Change in men</th>
<th>CHD mortality women</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 – 44</td>
<td>-96 %</td>
<td>(-44 %)*</td>
</tr>
<tr>
<td>45 – 54</td>
<td>-91 %</td>
<td>-89 %</td>
</tr>
<tr>
<td>55 – 64</td>
<td>-80%</td>
<td>-92 %</td>
</tr>
<tr>
<td>65 – 74</td>
<td>-69 %</td>
<td>-82 %</td>
</tr>
</tbody>
</table>

* Very few cases
"There is too much optimism in prevention of infectious diseases and too much pessimism about prevention of noncommunicable diseases"
NCD prevention is not expensive

• Influencing lifestyles through health promotion and policies is usually cheap
• Even best buy basic prevention services are usually inexpensive and cost effective (WHO)
• Example: Raising alcohol tax in Finland during the last 3 – 4 years increased government revenue appr. 400 million euros and reduced alcohol consumption 10 %
• Costs of clinical medicine for treatment of CVD, cancer, COPD, diabetes etc. are very high.
NCD prevention

- Science base strong
- Evidence based strategies
- Effective actions
  (WHO global NCD action plan)
WHO’s global NCD strategy, 2000

• NCD prevention and control is a global health priority

• Comprehensive action is needed, but from public health point of view population based prevention is the key (most cost-effective and sustainable)

• Integrated prevention: targeting common, lifestyle related risk factors (tobacco, diet, physical activity, alcohol)
UN high-level summit on NCDs
New York Sept 2011

- Preceded by Ministerial Conference in Moscow (April 2011).
- Political declaration
- Action on global NCD prevention and control”
- WHO’s leadership, intersectoral support
WHO global action plan 2013-20

1. International cooperation and advocacy
2. Strengthen national capacity, leadership, governance, multisectoral action and partnership
3. Reduce risk factors through health-promoting environments
4. Strengthen and reorient health systems for prevention and control of NCDs
5. Promote national capacity for research for prevention and control of NCDs
6. Monitor trends and determinants of NCD and evaluate progress
Figure A3: The 10 leading diseases and injuries and 10 leading risk factors based on percentage of deaths and DALYs in Europe and Central Asia, 2010

Note: This figure compares the percent of DALYs and deaths attributable to different diseases and injuries (shown in blue) as well as risk factors (shown in red). Certain causes, such as low-back pain, cause substantial numbers of DALYs, but cause few deaths. DALYs are an important tool for decision-makers because they capture years of healthy life lost from both fatal and non-fatal causes.
Observed and Predicted Declines in Coronary Mortality in Eastern Finland, Men

Observed
Predicted
Cholesterol
Blood pressure
Smoking

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3a Reduce risk factors: tobacco

- Increase tobacco tax
- Completely smokefree indoor places by law
- Effective health warnings and media campaigns
- Ban all tobacco advertising, promotion and sponsorship
3b Reduce risk factors: alcohol

- Increase alcohol tax
- Comprehensive restrictions and bans on advertising and promotion
- Restrictions in the availability of retailed alcohol
3c Reduce risk factors: unhealthy diet and physical inactivity

- Salt reduction through industry and media campaigns
- Reduction of saturated fat and replacement of transfats
- Public awareness campaigns on diet and physical activity
Redirection of health services

• Reorientation and strengthening of health systems
• Primary health care: ”Now more than ever” (WHR 2008)
• Special emphasis for NCDs
  • Chronic care model
  • Preventive practices
6. Monitor and evaluate

• Develop national targets and indicators (based on the global ones)
• Develop national surveillance monitoring system
  – Cause of deaths register
  – Cancer register
  – Periodic population risk factor surveys
  – Monitoring of national actions
NCD FRAMEWORK FOR ACTION/MONITORING

- **Determinants**
  - Genetics
  - Health promotion
  - Societal responses (HiAP)

- **Risk Factors**
  - Behavioral
  - Biological

- **NCD**

- **Outcome**
  - Death etc.

- **Health services**
  - Prevention
  - Treatment

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COMBING PERSONAL AND PUBLIC RESPONSIBILITIES

- **Personal Responsibility**
  "Nobody can take better care of your health than yourself"

- **Public Responsibility**
  "Make the healthy choices the easy ones"

*(Ottawa charter)*

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INDIVIDUAL

HEALTH BURDEN

SOCIETY
PUBLIC RESPONSIBILITY

POLICY INTERVENTIONS
Vision for the future

• The future is in our hands: The evidence is there
• From what to how
• Political will and leadership
• From predicting the future to making the future
During the last few years a great number of strategies and plans for evidence-based, effective prevention and health promotion have been produced.

Many important priorities have been identified.
FROM PRIORITIES TO IMPLEMENTATION

IDENTIFYING PRIORITIES IMPLEMENTING THEM

Implementation gap
Intersectoral work towards prevention
- ”Health in all policies”

- People’s lifestyles are influenced by decisions in different sectors of society (much of them beyond the health sector)

- Social change process combining government policies, expert guidance, broad health promotion and mobilization of people

FINNISH EXAMPLES
Important elements of Finnish tobacco policy

- No advertizing or sales promotion (since 1978)
- Public indoor places, restaurants and work sites smokefree
- Pictorial health warnings
- Sale to minors (below 18) prohibited
- Tobacco products not at display
- Sale of smokeless tobacco prohibited
- Support to cessation and campaigns
- Taxation

PREVALENCE OF DAILY SMOKING 16 %
Examples of intersectoral work 1.

Development of Finnish Rapeseed oil

Change in fat content of Finnish cow milk

\[ \text{Fen: } y = -0.16x + 362 \]

\[ \text{Gen: } y = -0.16x + 358 \]
Examples of intersectoral work 2.

Biscuit example:
- Leading Finnish biscuit manufacturer (LU Finland Ltd) has removed some 80,000 kg of SAFA by changing the fats used
- All trans fats removed and major transfer to rapeseed oil

Meat product example:
HK (Leading Finnish meat company) since 2007 annually:
- 40,000 kg less salt
- 100,000 kg less saturated fat in their products
Examples of intersectoral work 3.

Berry project in North Karelia
- To promote berry farming, product development and consumption
- Dairy farmers could switch over to berry farming
- Financing from Ministries of Agriculture and Commerce

Finnish Heart Symbol
Serum Cholesterol in Finland, Men Aged 30–59 Years

mmol/l


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3.12.2013
Pekka Puska, Director General
8th Global WHO Conference on health promotion
- “Health in all policies”
  From Ottawa to Helsinki (June 2013)

HELSEINKI STATEMENT

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Ban Ki-Moon: 
"We should all work to meet the targets to reduce NCDs"
NCD prevention – broad impact

• NDC’s, their treatment and the related inequities in health hamper social and economic development

• NCD prevention through health promotion and policies in different sectors (”Health in all policies” does not only improve public health but contributes to sustainable social and economic development

• NCD prevention helps (in addition to public health) to
  – Control health care costs
  – Care of elderly
  – Increase labour productivity
  – Increase general wellbeing
Conclusion

• NCD prevention and control is possible and pays off
• Population based NCD prevention by appropriate policies and health promotion activities is the most effective way to improve public health
• Comprehensive action, broad collaboration with dedicated leadership and strong government policy support in different areas are needed
• Prevention through influencing NCD related lifestyles is also the way to support sustainable social and economic development
Vision

• Prevention of avoidable NCD mortality through sustainable social change process
• ”More years in life – more life in years”
• ”Health for all”
For successful prevention

- Strong leadership combined with
- Good partnership

* * *

- Do the right things
- Do enough of those
Thank you

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