

Chronic diseases: structural prevention and health promotion

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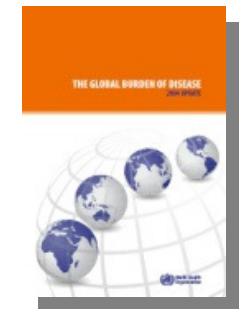
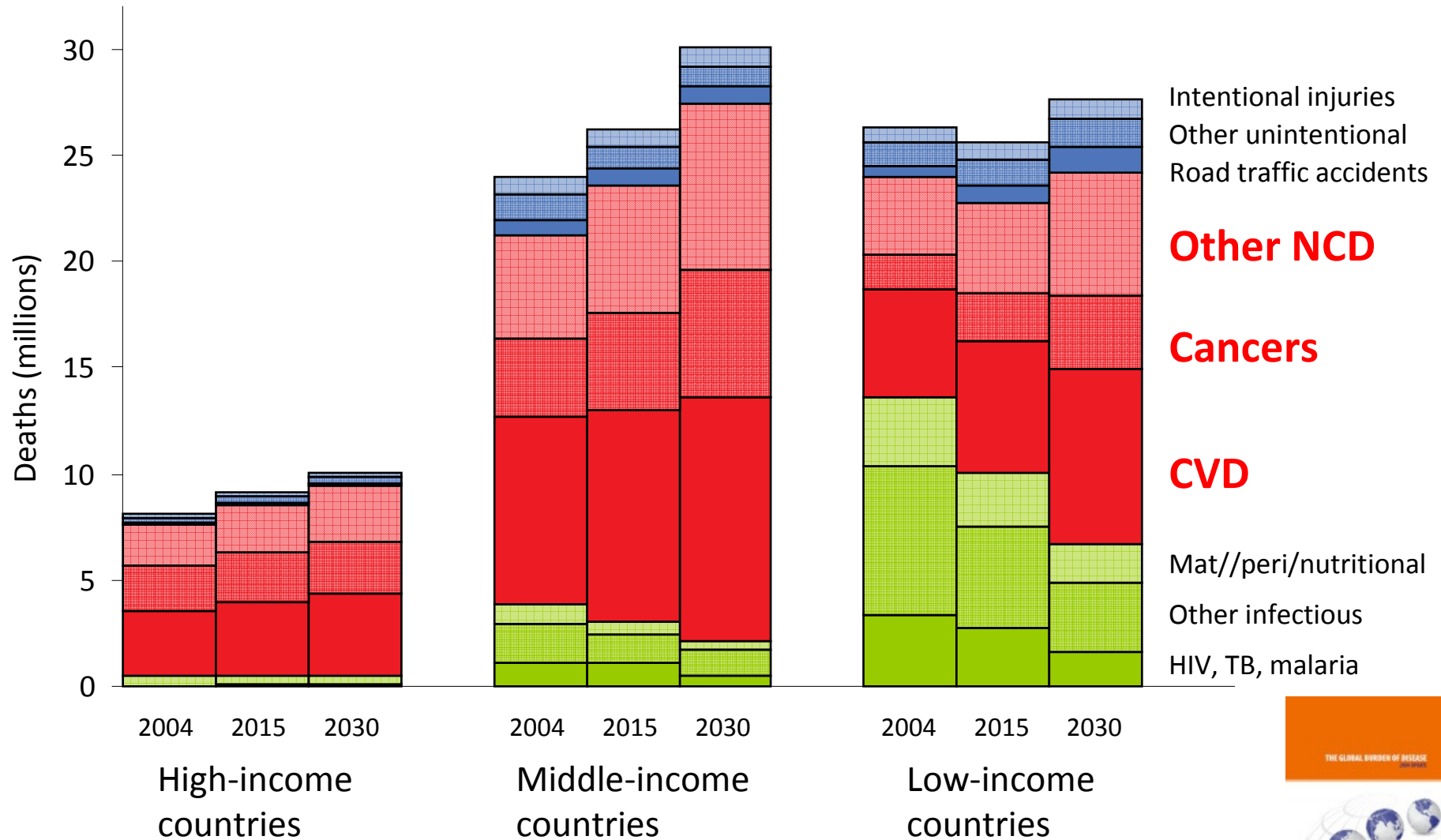
Institute of Social and Preventive Medicine

University of Lausanne & University Hospital Center, Lausanne

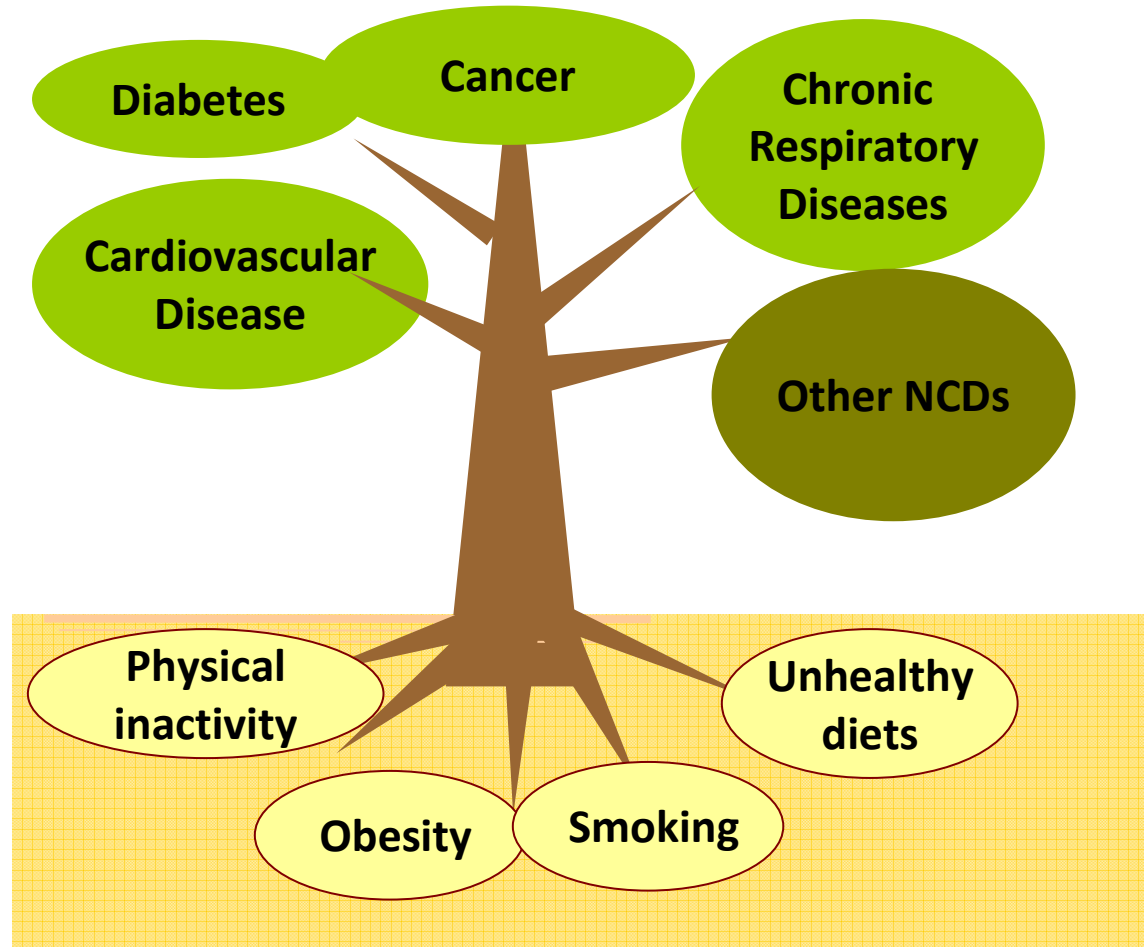
Swiss Public Health Conference

Basel, 25-26 August 2011

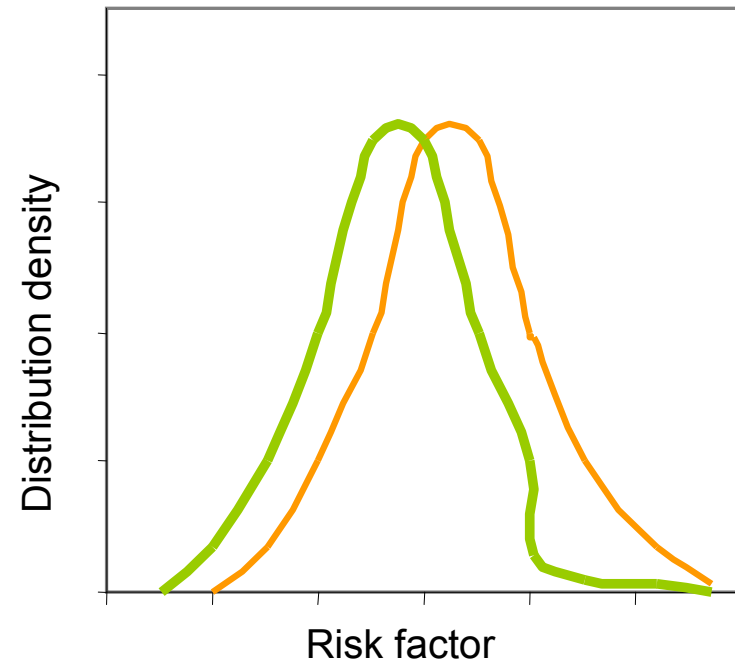
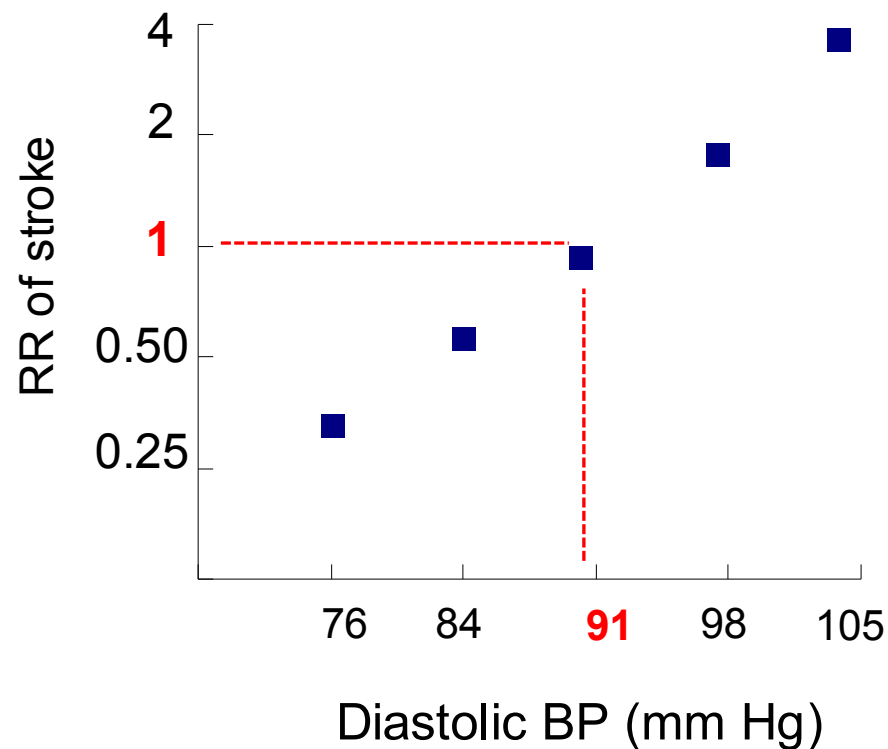
Mortality: global projections, 2004-2030



A few main NCDs share a few common risk factors



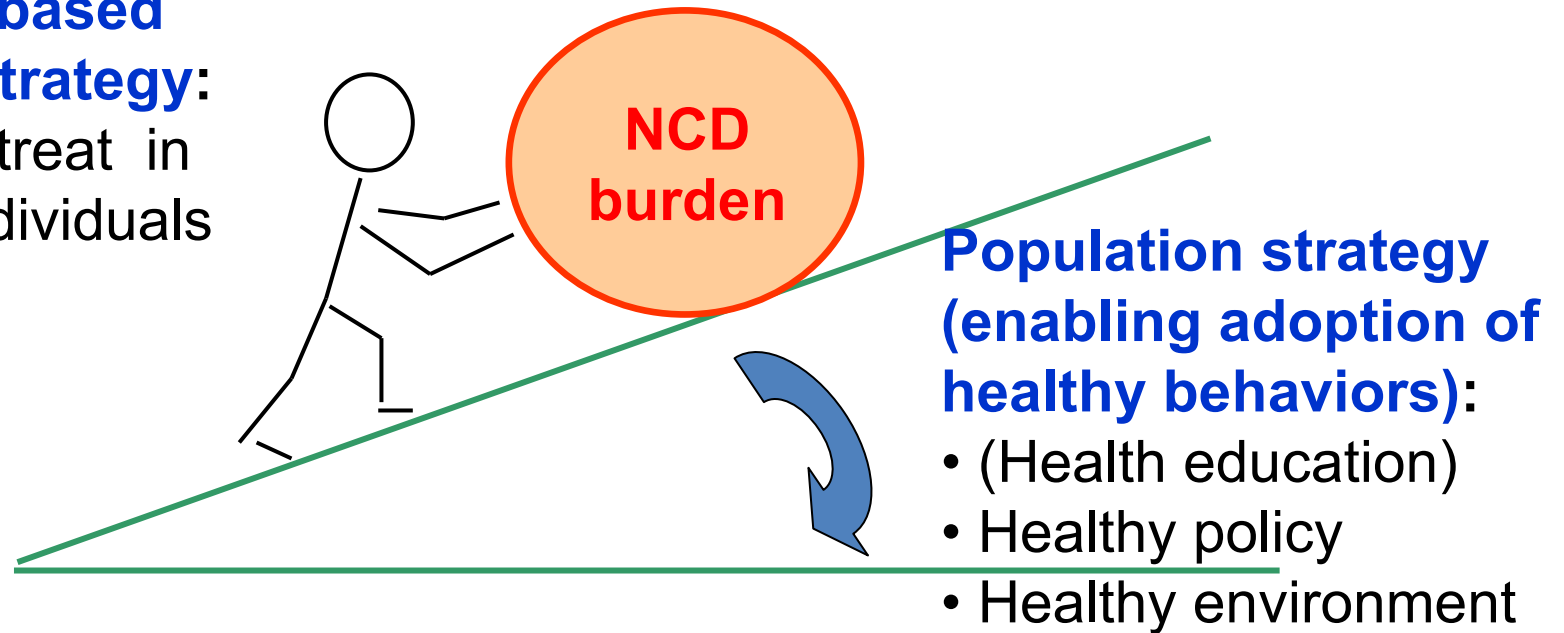
Linear relation between RF and NCDs implies that benefits of population strategies can extend to entire population (“good for all” vs “good for some”)



Relation between population strategies and high-risk strategies for NCD/CVD prevention and control

Individual-based high-risk strategy:

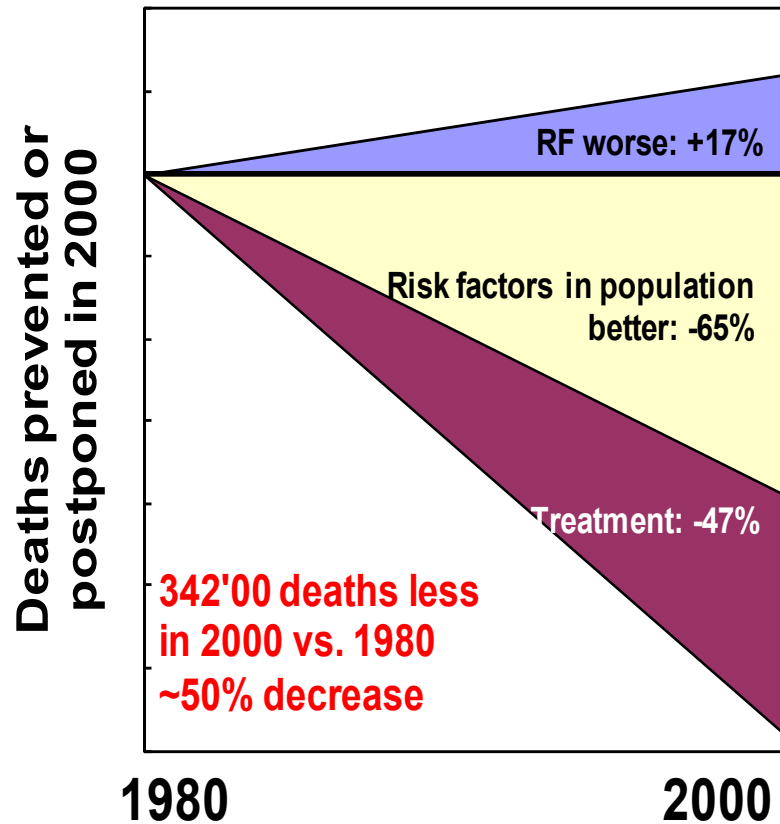
- Screen & treat in high-risk individuals



Population strategy (enabling adoption of healthy behaviors):

- (Health education)
- Healthy policy
- Healthy environment

>50% decline in CVD in Western countries (1980-2000) was due more to public health interventions than to treatment



Risk factors worse +17%

- Obesity (increase) +7%
- Diabetes (increase) +10%

Risk factors better -65%

- Population BP fall -20%
- Smoking -12%
- Cholesterol (diet) -24%
- Physical activity -5%

Treatment -47%

- AMI treatments -10%
- Secondary prevention -11%
- Heart failure -9%
- Angina: CABG & PTCA -5%
- HBP therapies -7%
- Statins (prim prev) -5%

Unexplained -9%

Ford et al. NEJM 2007; 356: 2388.

Capewell S, O'Flaherty M. What explains declining coronary mortality? Lessons and warnings. Heart 2008;94 1105-8.

Changing lifestyles: public health interventions vs. individual approaches

Individual-based approaches

- Self managed behavior change (empowerment) and “screen and counseling” **require individual cooperation**
- **Generally low cost effectiveness** (efficacy ≠ effectiveness)
- Large resources

Structural population-based approaches

- Facilitate healthy “natural choices”
- Set social norms
- **May not require individuals’ cooperation**
- **Extend benefits to majority** at intermediate/low risk (do not feel concerned)
- **Benefits extend to areas other than health:** social, climate, economy

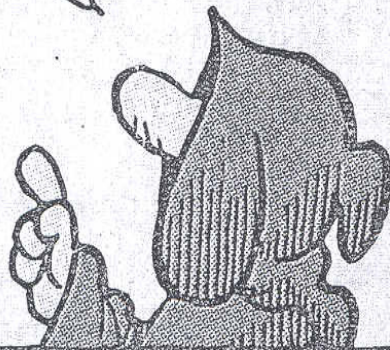
HAGAR D'UNOR LE VIKING

QUE PUIS-JE FAIRE POUR ME SENTIR MEUX, DR. ZOUIC ?

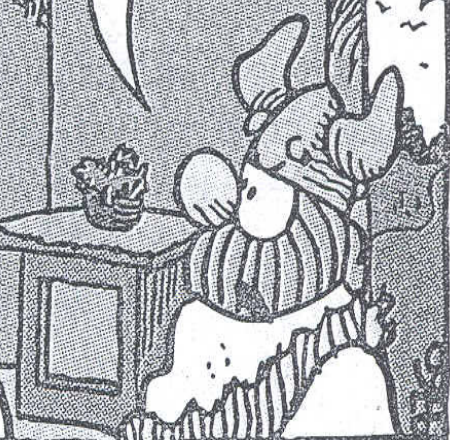
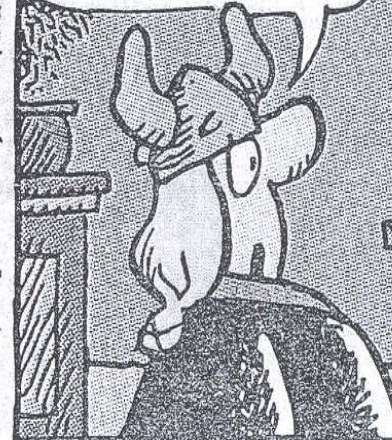
TU DOIS ARRÊTER DE BOIRE, DE TROP MANGER, DE SORTIR TARD LE SOIR ET TU DOIS FAIRE DU SPORT RÉGULIÈREMENT!

QU'AS-TU APPRIS CHEZ LE MÉDECIN ?

QU'IL ÉTAIT PEUT-ÊTRE TEMPS D'ALLER EN VOIR UN AUTRE !!



CHRIS BROWN 12-2



Doc, what should i do to feel better ?

You should eat less, drink less, and exercise more

What did you learn from your doctor ?

That it was time to see an other doctor

Population-based interventions targeting the population

1) (Educational interventions)

- Media, school, workplace

2) Transportation policies

- Limit role of automobile (and increase use of buses): promote walking/cycling, pedestrian zones, safe well lit green areas, sidewalks
- Health promoting cities and environments (built environment)

3) Improve availability of healthy foods

- Reformulation of manufactured foods (salt, sugar, trans fat, sat fats, etc)
- Tax, subsidies on healthy/unhealthy foods
- Promoting healthy food choices and limiting marketing to children

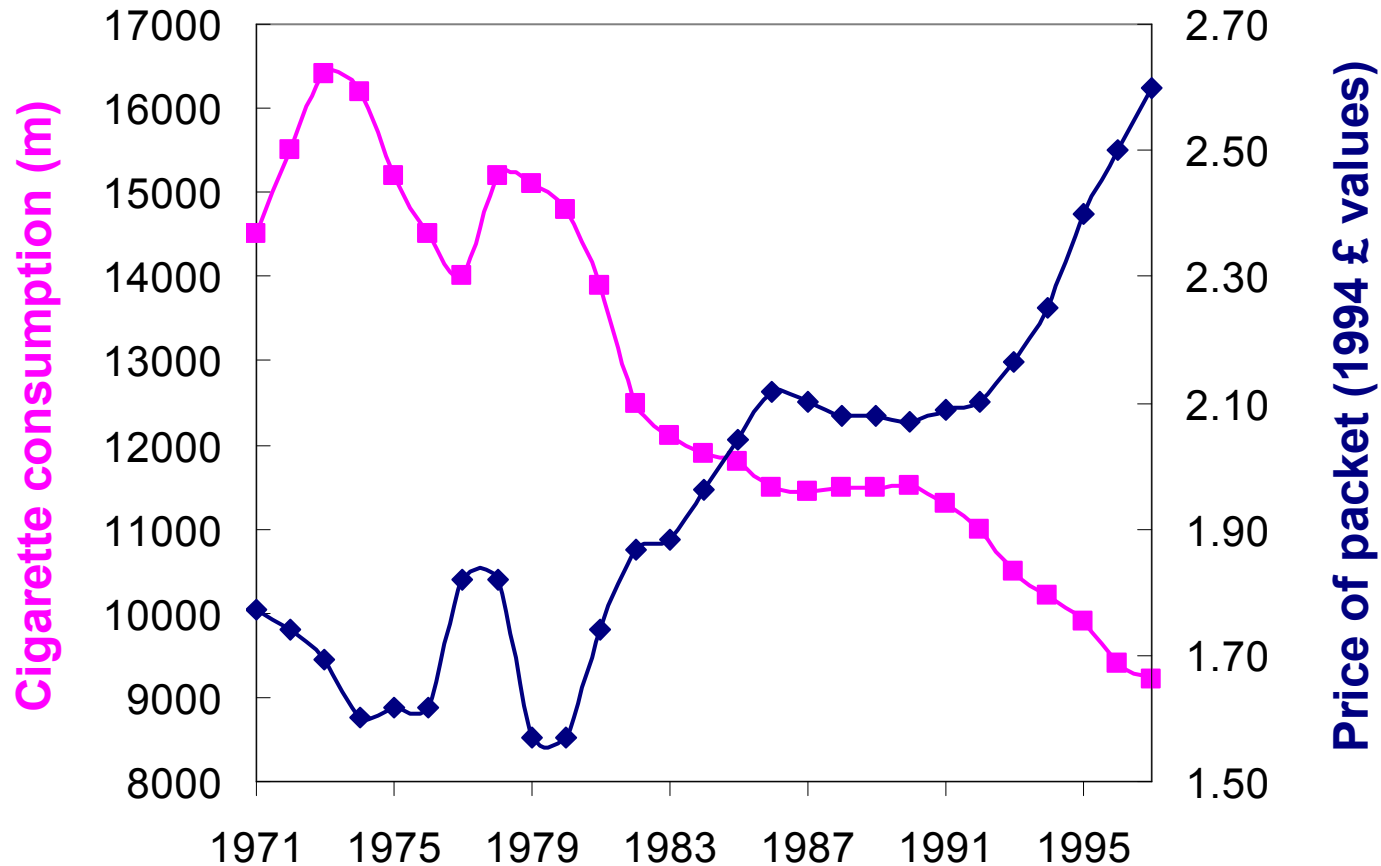
4) Economic policies: incentives and disincentives

- Tax on tobacco, alcohol, sugar, salt, fats
- Differential trade taxes for energy dense foods vs. fruits-vegetables

5) Initiatives at the community level

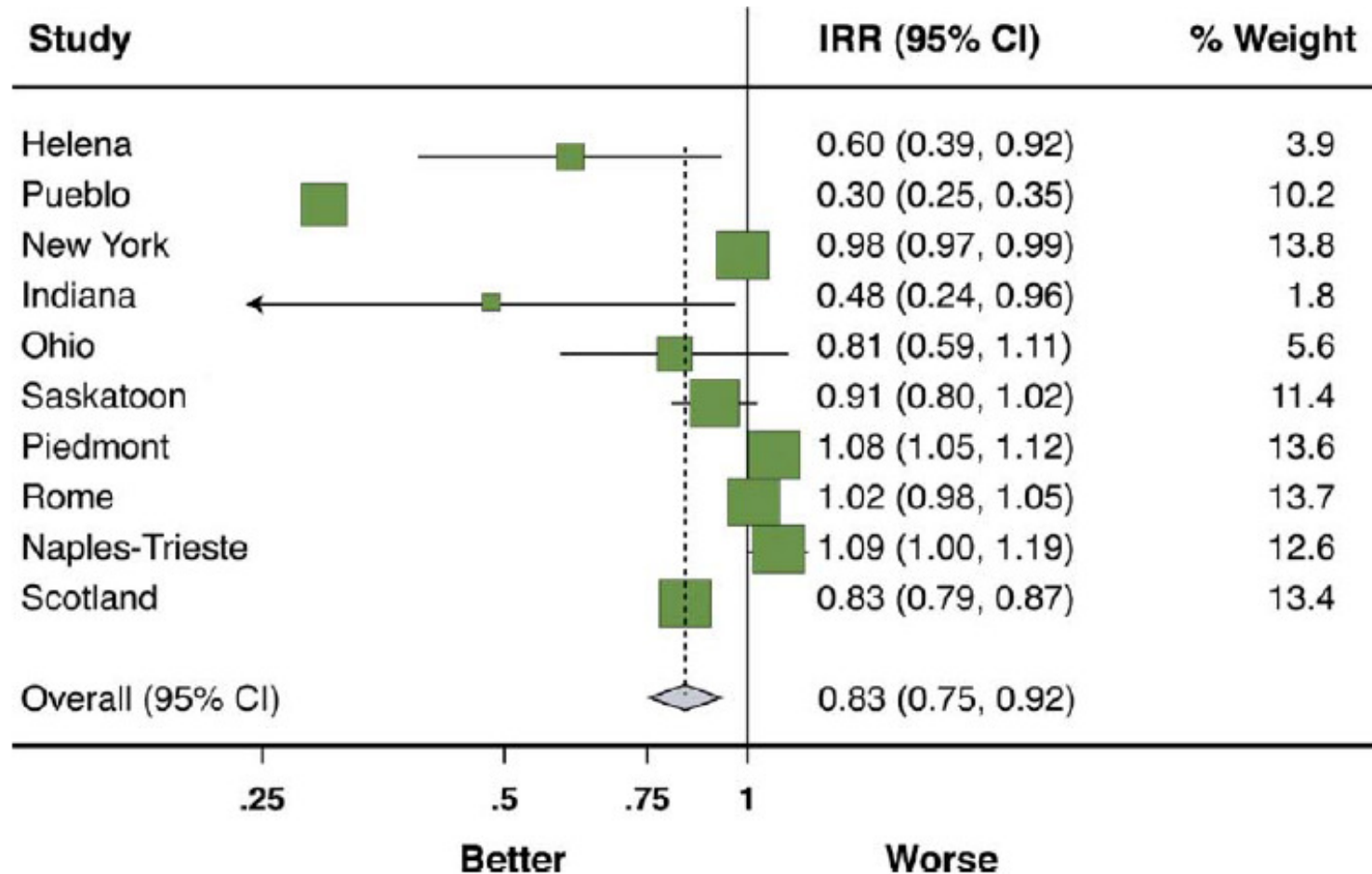
- Most effective when multifaceted, involving community
- Sufficient dose and duration of intervention

Higher price of cigarettes (i.e. tax) is a powerful measure to curb tobacco use, UK, 1971-96

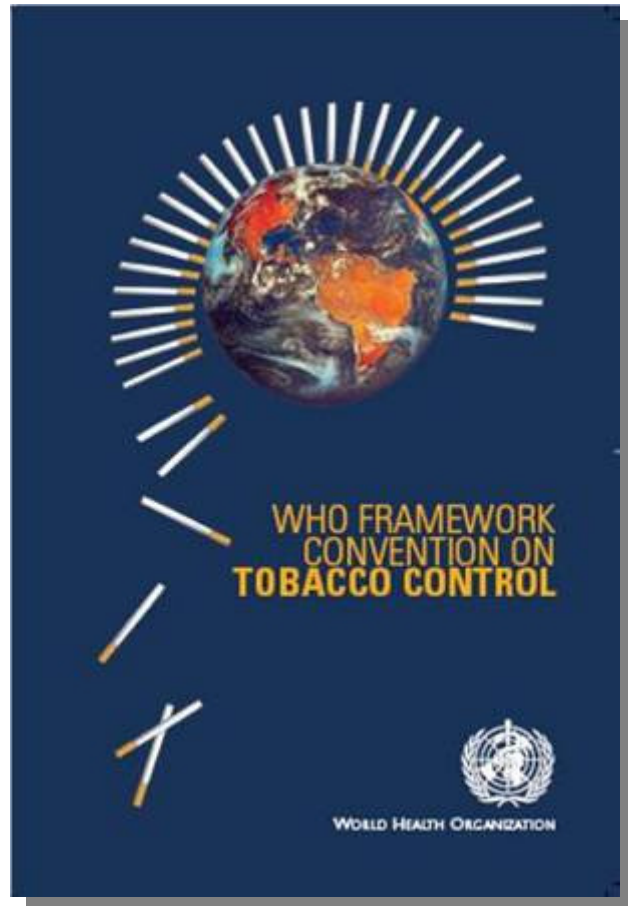


Central Statistical Office (UK), 1965-97

Effects of community smoking bans on incident AMI

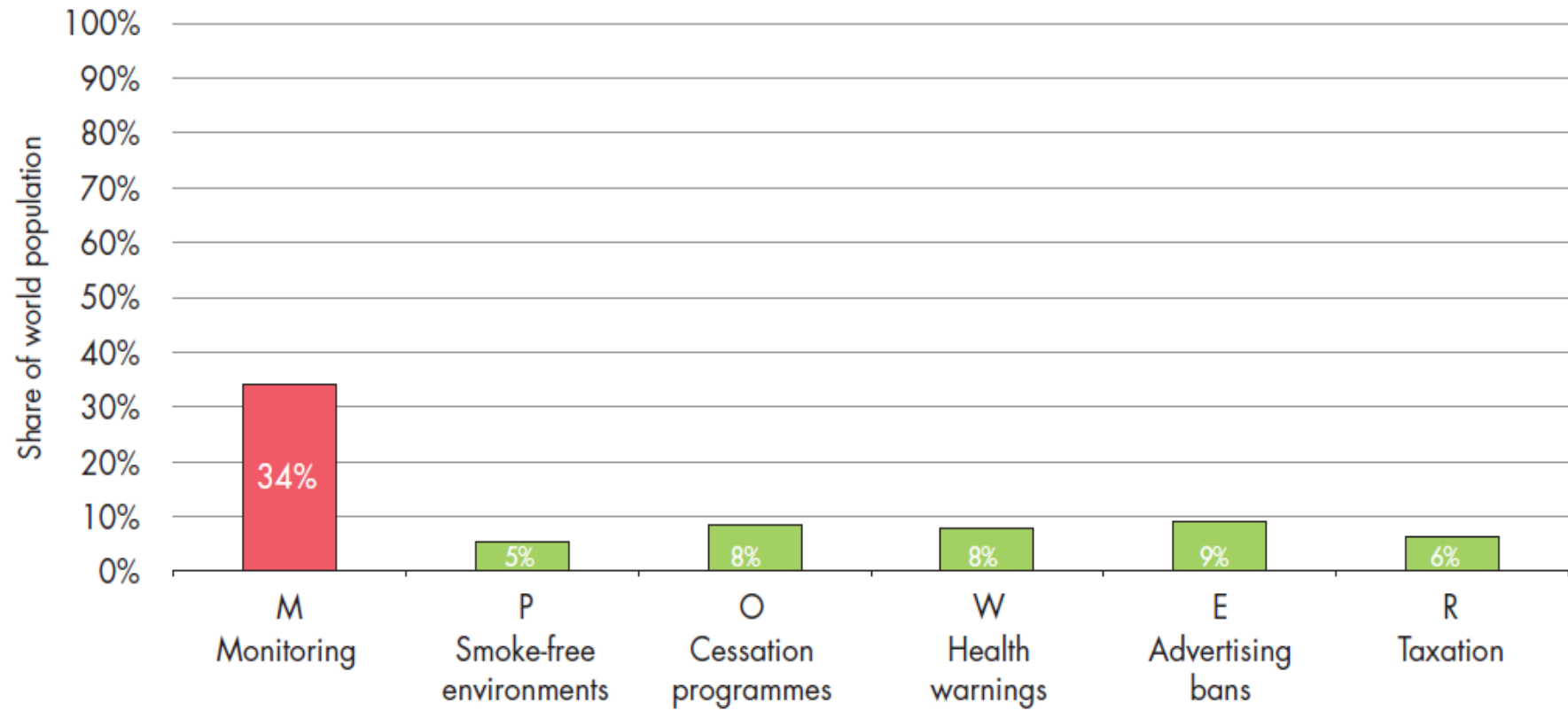


Framework Convention on Tobacco Control (FCTC): “top achievement in the 20th century to eliminate NCD mortality”

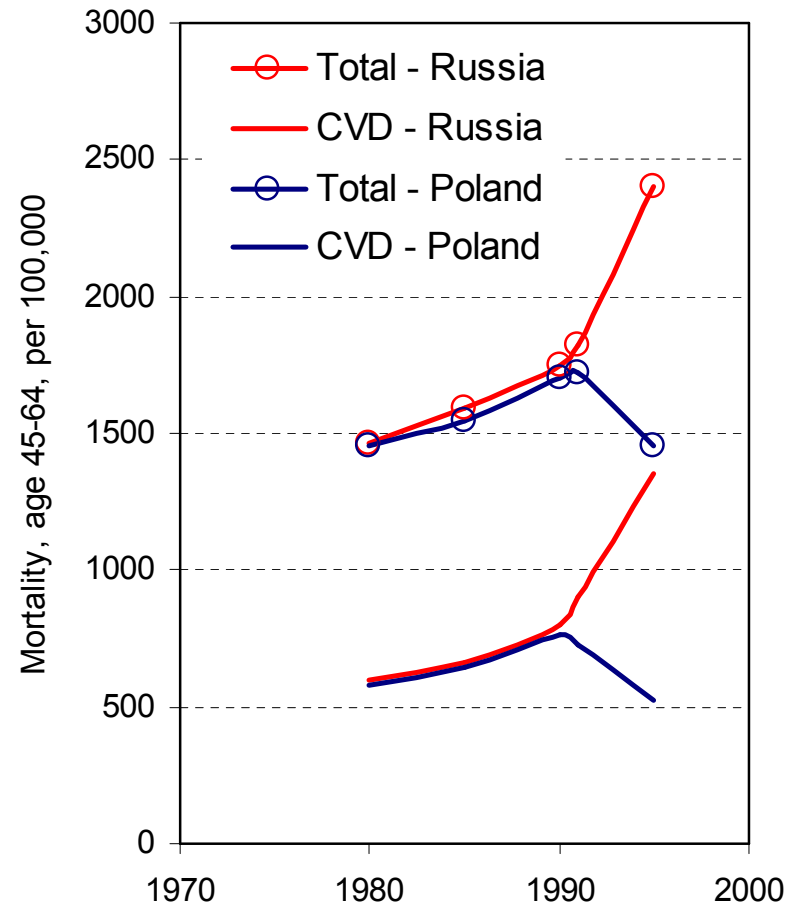
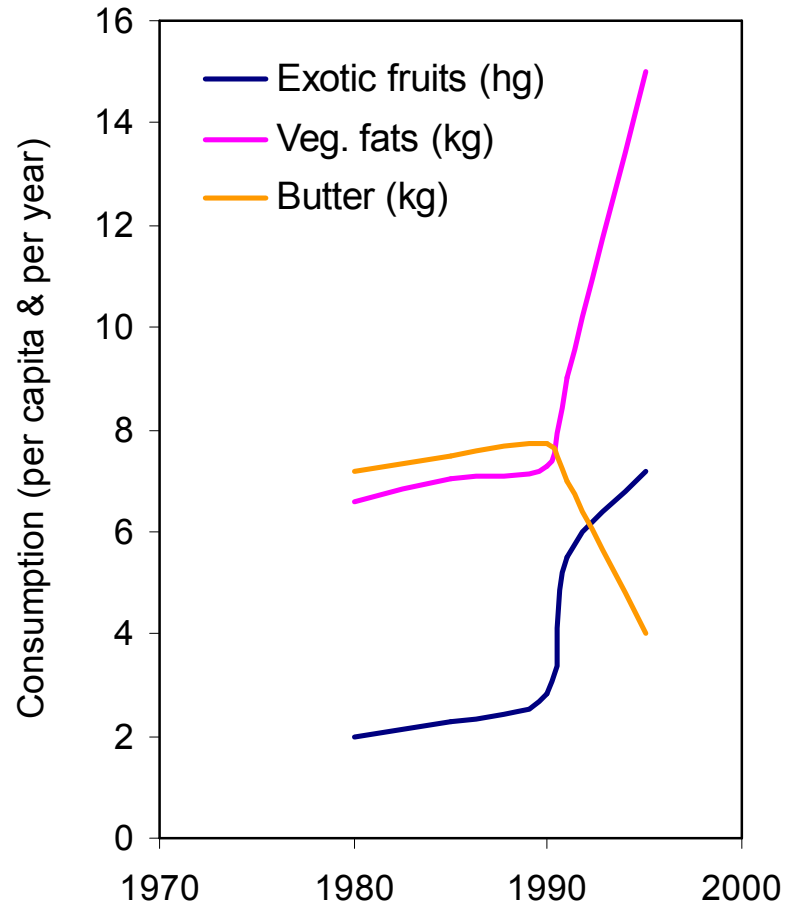


- First global health treaty
- Entry into force in 2005, >175 parties
- Drives and influences governments to take healthy policy against tobacco
- **Creates international law to:**
 - Establish tobacco control as a priority on the public health agenda
 - Legally binding provisions for specific tobacco control measures
 - Introduces a **mechanism for firm country commitment and accountability** (e.g. “reporting instrument”)

Still large space for improved tobacco control worldwide (2008)



A natural experiment: trends in diet and CVD in Poland before/after market liberalization



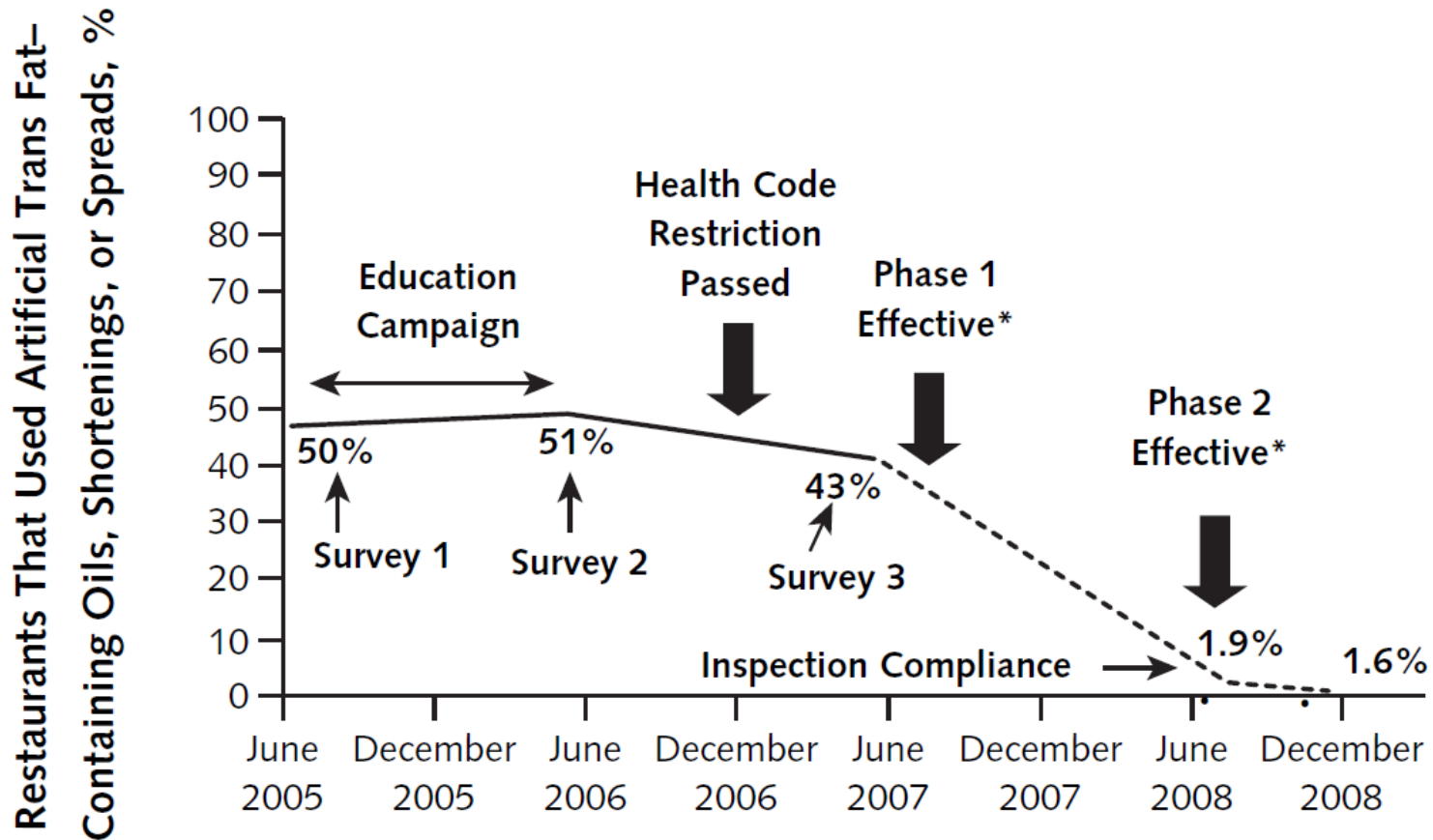
Cost-effectiveness of interventions to reduce dietary salt intake

| | Cost-effectiveness ratio (A\$/DALY) |
|-----------------------------|---|
| | Including government/food industry costs |
| <hr/> | |
| Discounted | |
| Dietary advice (>140 mm Hg) | 160 000 (99 000 to 280 000)* |
| Dietary advice (>115 mm Hg) | 260 000 (170 000 to 440 000)* |
| Tick programme | Dominant (dominant to dominant)* |
| Mandatory limits | Dominant (dominant to dominant)* |

Reducing dietary sodium intake – UK example

- **Areas of work:**
 - **Working with food industry** to reduce levels of salt in foods (retailers, manufacturers, catering sector and small businesses)
 - **Clear food labelling**
 - Consumer awareness campaigns
 - Monitoring and promoting success
- **Reductions in salt consumption in adults:**
 - **Decrease of 9%** (9.5 grams in 2000 to 8.6 grams in 2008)
- **Reductions in salt content:**
 - 16% in bread (2004 to 2008); over 33% overall (since 1980s)
 - 49% in breakfast cereals (1998 to 2008)
 - 25-55% in cakes and biscuits, crisps and snacks (2006/07)
 - Around 30% in soups and sauces, some processed cheeses spreads (2003-05)

Restriction of artificial trans fat in New York City





13 May 2008

Her Excellency
Dr. Margaret Chan
Director General
World Health Organization
20 Avenue Appia
Geneva, Switzerland

Dear Dr. Chan:

RE: A Global Commitment to Action on the Global Strategy on Diet, Physical Activity and Health

As the CEOs of major international food and non-alcoholic beverage companies, we would like to take this opportunity ahead of the World Health Assembly in May to set out our global commitment to further action in support of continuing efforts to implement the 2004 WHO Global Strategy on Diet, Physical Activity and Health.

We fully recognise that experts agree that significant increases in non-communicable diseases (such as cardiovascular disease, hypertension and diabetes) are directly linked to increasing prevalence of obesity resulting from a number of factors including poor diets, less physical activity and changes in lifestyle in both developed and developing countries around the world.

Five key global commitments to action that will guide 8 major food companies over the next five years and beyond (...).



“Walking is man's best medicine” *Hippocrates (460 BC - 377 BC)*

Shaping the environment: improvement in street design



Canton of VD to spend 3-5 millions CHF/year up to 2030 for cycling lanes up to 5 km around train stations in canton of VD



Department of infrastructures

Le canton veut investir pour les deux-roues

● L'écologiste François Marthaler ose un aveu: «Lorsque j'étais conseiller communal de Prilly, j'ai voté contre une piste cyclable.» Le ministre précise que la piste projetée allait s'interrompre à la sortie de la commune. Il veut éviter ce genre de situations, qu'il juge ubuesques.

Le conseiller d'Etat a donc présenté hier sa stratégie pour assurer davantage de place à la petite reine et pour encourager l'utilisation du vélo. Aujourd'hui, Vaud est le canton où le vélo est le moins utilisé pour les trajets pendulaires: seuls 3% des Vaudois se rendent au travail en pédalant. Le conseiller d'Etat aimerait tripler cette pratique pour arriver à la moyenne suisse. Son plan vise à faciliter la vie des cyclistes en multipliant les réseaux cyclables dans les agglomérations.

Pour ce faire, le canton subventionnera les communes à hauteur de 15 à 20%, mettant sur la table 21,5 millions jusqu'en 2014. Il assurera aussi des pistes dans un rayon de 3 à 5 kilomètres autour des gares, qui devront fournir davantage de places de stationnement.

Tout cela pour pousser les pendulaires à opter pour le vélo et le train comme moyens de transport quotidiens.

Le canton entend mettre jusqu'en 2030 entre 3 et 5 millions de francs par an. Il envisage également de créer quelques autres pistes cyclables sur les routes cantonales pour compléter des parcours interrompus et donner plus de cohérence au réseau. Tant Valérie Schwaar, secrétaire de l'ATE, que Karine Crousaz, présidente de Pro Vélo, disent que ce plan «va dans la bonne direction».

J.FD

24 Heures – 16-17 oct. 2010

**AHA policy statement in Circulation of 23 Aug 11:
medical cost savings of \$3 for every 1\$ spent on bike lanes and pedestrian trails**

Keystone/Gaetan Bally

**RENTRÉE**

Par peur des accidents, certains établissements n'autorisent pas les élèves à venir à vélo.

DES ÉCOLES INTERDISSENT LE VÉLO

MOBILITÉ DOUCE Certains établissements comme le cycle d'orientation d'Avry-sur-Matran (FR) interdisent à leurs élèves de venir en classe à bicyclette. Pro Vélo s'en indigne.

À l'heure des onéreuses campagnes fédérales anti-obésité et de la mobilité douce reine, certains établissements scolaires interdisent à leurs élèves de venir en cours à bicyclette. Ce paradoxe indigné Pro Vélo Suisse et son président, le conseiller national Jean-François Stutz (PS/EP): «D-

va avec, sans parler des problèmes de surpoids touchant nos jeunes», dénonce l'élue de gauche.

On ne peut pourtant pas soupçonner le directeur de cet établissement de 600 élèves de détester le vélo. Yvan Girard

cartable de 3 ou 4 kilos sur le dos n'est idéal ni du point de vue de l'équilibre ni de celui de la santé.»

PAS ASSEZ DE PLACE DANS LA COUR

une exception par écrit. «Tout cela sonne à mes oreilles comme des excuses pour ne pas chercher de vraies solutions aux problèmes», dénonce Marianne Fässler, responsable du programme Bike2school chez Pro Vélo. A savoir d'après la lob-

**Parachutes reduce the risk of injury after gravitational challenge,
but their effectiveness has not be proved with RCTs**



EPODE: a successful community-based intervention to prevent obesity in France and Europe

- **Comprehensive community interventions** in towns in France/Europe
- **Large coalition of actors in all sectors:** mayor, shop owners, teachers, doctors, pharmacists, caterers, restaurants, sports associations, media
- **Redesign built environment:** sporting & walk facilities, playgrounds
- **Family involvement:** cooking workshops, individual counselling.

- **In 5 years (2000-2005), prevalence of overweight in children fell to 8.8%, while rose to 17.8% (in line with national trend) in comparison towns.**

Katan MB. Weight-Loss Diets for the Prevention and Treatment of Obesity. NEJM 2009;360:923-4,

Romon M et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmes. Public Health Nutr. 2008 December 23.

Westley H. Thin living. BMJ 2007;335:1236-7.

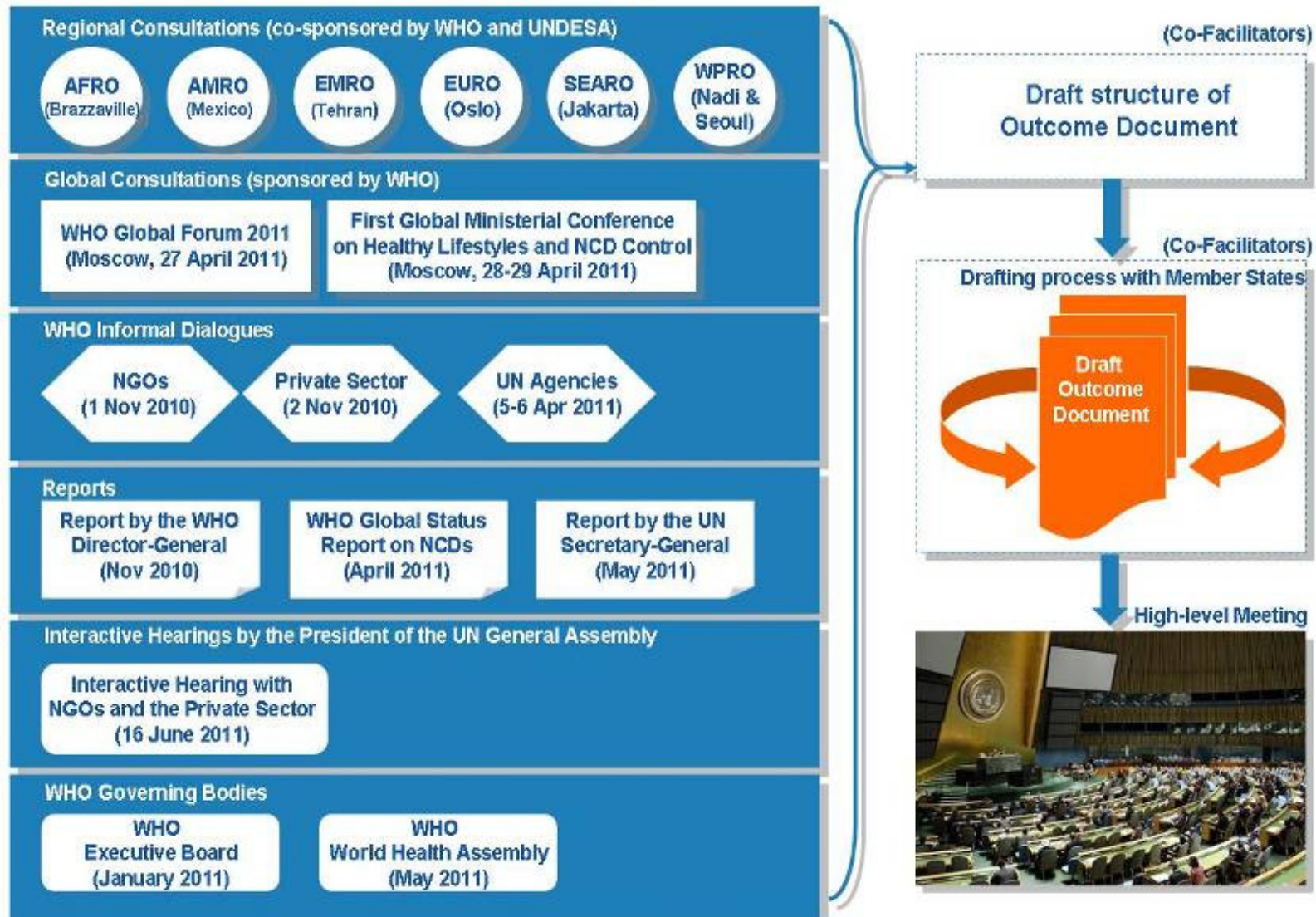
Interventions in the society vs. individual choice ?

- The 'nanny state' or 'health police' frames evoke an image of authoritarians - who know best - telling people how to live their lives.
- It shifts the debate away from potentially harmful industry to the rights of the ordinary Joe.
- A quick answer can be: "Given a choice between a state which protects the public, and an uncaring one, which does not regulate harmful business practices, most reasonable people would prefer a caring state."

Growing global commitments to tackle NCDs since 2000



Putting NCDs on the global agenda: UN High-Level Meeting on NCDs (New York, 19-20 Sep 2011)





CONFÉRENCE MINISTÉRIELLE DE LA RÉGION AFRICAINE DE L'OMS
SUR LES MALADIES NON TRANSMISSIBLES (MNT)
BRAZZAVILLE, CONGO, 4-6 AVRIL 2011

Tous contre les maladies non transmissibles. Agissons maintenant.

INSTITUTE OF SOCIAL
AND PREVENTIVE MEDICINE





"The summit in September in New York is our chance to broker an international commitment that puts NCDs high on the development agenda, where they belong"

Mr Ban Ki-Moon, UN Secretary-General,
World Economic Forum, 27 January 2011

Comment l'industrie édulcore la politique sanitaire de l'ONU

Santé Une enquête du « British Medical Journal » décrit le lobbying des industriels et des gouvernements des pays les plus développés pour ralentir les discussions au sein de l'ONU sur la lutte contre le cancer, le diabète ou les affections cardio-vasculaires. Cette attitude inquiète les experts qui dénoncent l'inaction des pays riches face à des enjeux majeurs de santé publique. **P. 9**

Le Monde, 24 août 2011



“Best buys” from WHO for reducing the burden of NCDs: most are “structural” public health interventions

- **Ban on smoking in public places**
- **Warning about the dangers of tobacco use**
- **Bans on tobacco advertising, promotion, and sponsorship**
- **Raising taxes on tobacco**
- **Alcohol: ban on advertising & raising taxes**
- **Reduce salt intake and salt content of food**
- **Replacing transfats in food with polyunsaturated fat**
- Promoting public awareness about diet and physical activity, including through mass media

Mutually reinforcing co-benefits of priority actions for NCD

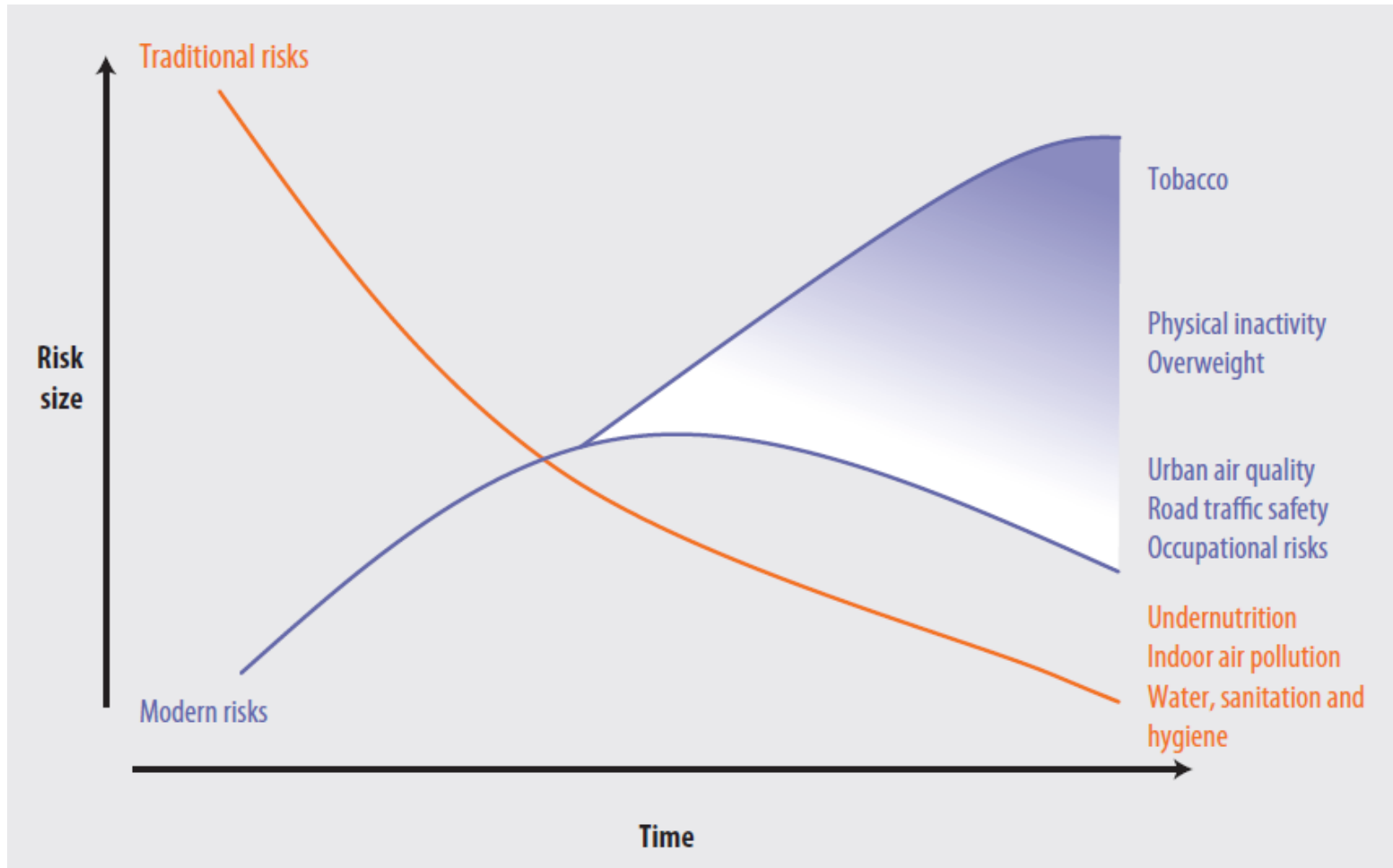
Health benefits (reductions in):

- Blindness, amputations, and other complications of diabetes
- Dental caries
- Domestic violence
- Infectious diseases—eg, tuberculosis
- Injuries, including road traffic injuries, and falls
- Maternal and infant mortality and morbidity
- Renal diseases

Other benefits

- Reduction in carbon footprint and greenhouse gases
- Reduction in environmental pollution
- Reduction in poverty
- Improvements in built environments
- Improvement in economic growth and productivity
- Improvement in local food production
- Improvement in social interaction

Reducing risk of NCDs in populations largely depends on (structural) public health policy across all sectors



Key messages : tackling NCDs

- **NCDs are a wake-up call for non-health sectors**
- **Prevention is key (particularly in LMICs)**
- **Policy lies at the root of the NCD crisis and in its solutions**
- **Successful structural interventions against NCDs exist**
- The High-Level Meeting on NCDs in Sep 2011 is a unique opportunity to raise the priority given to NCDs on the agendas of international leaders and, particularly, structural interventions that address roots of the NCD crisis
- (Health system strengthening is essential)

An aerial photograph of a city built on a steep, forested hillside overlooking a large, calm lake. The city features a mix of residential and commercial buildings, with a prominent road winding through the center. In the foreground, a marina with several boats is visible. The lake's surface is still, reflecting the sky and the surrounding landscape. In the distance, a range of mountains with snow-capped peaks stretches across the horizon under a blue sky with scattered white clouds.

Thank you,

**et à bientôt
à Lausanne !**