

NCD 'best buys' – Risk factors

Risk factor (DALYs, in millions; % global burden) ^a	Interventions / actions (* core set of best buys)	Avoidable burden ^b (DALYs averted, millions)	Cost-effectiveness ^b (US\$ per DALY prevented) [Very = < GDP per person; Quite = < 3* GDP per person Less = >3* GDP per person]	Implementation cost (US\$ per capita) [Very low = < US\$ 0.50 Quite low = < US\$ 1 Higher = > US\$ 1]	Feasibility (health system constraints)
Tobacco use (> 50m DALYs; 3.7% global burden)	Protect people from tobacco smoke * Warn about the dangers of tobacco * Enforce bans on tobacco advertising * Raise taxes on tobacco *	Combined effect: 25-30 m DALYs averted (> 50% tobacco burden)	Very cost-effective	Very low cost	Highly feasible; strong framework (FCTC)
	Offer counselling to smokers		Quite cost-effective	Quite low cost	Feasible (primary care)
Harmful use of alcohol (> 50m DALYs; 4.5% global burden)	Restrict access to retailed alcohol * Enforce bans on alcohol advertising * Raise taxes on alcohol *	Combined effect: 5-10 m DALYs averted (10-20% alcohol burden)	Very cost-effective	Very low cost	Highly feasible
	Enforce drink driving laws (breath-testing) Offer brief advice for hazardous drinking		Quite cost-effective	Quite low cost	Intersectoral action Feasible (primary care)
Unhealthy diet (15-30m DALYs; 1-2% global burden) ^c	Reduce salt intake * Replace trans fat with polyunsaturated fat * Promote public awareness about diet * Restrict marketing of food and beverages to children Replace saturated fat with unsaturated fat Manage food taxes and subsidies Offer counselling in primary care Provide health education in worksites Promote healthy eating in schools	Effect of salt reduction: 5 m DALYs averted Other interventions: Not yet assessed globally	Very cost-effective	Very low cost	Highly feasible
			Very cost-effective? (more studies needed)	Very low cost	Highly feasible
			Quite cost-effective	Higher cost	Feasible (primary care)
			Less cost-effective		Highly feasible
Physical inactivity (> 30m DALYs; 2.1% global burden)	Promote physical activity (mass media) * Promote physical activity (communities) Support active transport strategies Offer counselling in primary care Promote physical activity in worksites Promote physical activity in schools	Not yet assessed globally	Very cost-effective	Very low cost	Highly feasible
			Not assessed globally	Not assessed globally	Intersectoral action
			Quite cost-effective	Higher cost	Feasible (primary care)
Infection	Prevent liver cancer via hepatitis B vaccination *	Not yet assessed	Less cost-effective		Highly feasible
			Very cost-effective	Very low cost	Feasible (primary care)

NCD 'best buys' - Diseases

Disease (% global burden; DALYs ^a)	Interventions / actions (* core set of best buys)	Avoidable burden ^b (DALYs averted, millions)	Cost-effectiveness ^b (US\$ per DALY prevented) [Very = < GDP per person; Quite = < 3* GDP per person Less = >3* GDP per person]	Implementation cost (US\$ per capita) [Very low = < US\$0.50 Quite low = < US\$ 1 Higher = > US\$ 1]	Feasibility (health system constraints)
Cardiovascular disease (CVD) and diabetes (170m DALYs; 11.3% global burden)	Counselling and multi-drug therapy (including glycemic control for diabetes mellitus) for people (≥30 years), with 10-year risk of fatal or nonfatal cardiovascular events ≥ 30%^c *	60 m DALYs averted (35% CVD burden)	Very cost-effective	Quite low cost	Feasible (primary care)
	Aspirin therapy for acute myocardial infarction*	4 m DALYs averted (2% CVD burden)	Very cost-effective	Quite low cost	
	Counselling and multi-drug therapy (including glycemic control for diabetes mellitus) for people (≥ 30 years), with a 10-year risk of fatal and nonfatal cardiovascular events ≥ 20%	70 m DALYs averted (40% CVD burden)	Quite cost-effective	Higher cost	
Cancer (78m DALYs; 5.1% global burden)	Cervical cancer – screening (visual inspection with acetic acid), and treatment of pre- cancerous lesions to prevent cervical cancer*	5 m DALYs averted (6% cancer burden)	Very cost- effective	Very low cost	Feasible (primary care)
	Breast cancer - treatment of stage I	3 m DALYs averted (4% cancer burden)	Quite cost-effective	Higher cost	Not feasible in primary care (diagnosis and treatment requires secondary or tertiary care)
	Breast cancer - early case finding through mammographic screening (50 - 70 years) and treatment of all stages	15m DALYs averted (19% cancer burden)	Quite cost -effective	Higher cost	
	Colorectal cancer - screening at age 50 and treatment	7 m DALYs averted (9% cancer burden)	Quite cost-effective	Quite low cost	
	Oral cancer - early detection and treatment	Not assessed globally	Not assessed globally	Not assessed	
Respiratory disease (60m DALYs; 3.9% global burden)	Treatment of persistent asthma with inhaled corticosteroids and beta-2 agonists	Not assessed globally (expected to be small)	Quite cost-effective	Very low cost	Feasible (primary care)

Cost-effectiveness checklist

Interventions		Data source(s)	Is intervention highly cost-effective? *					
			High-income Europe (West) (EurA) <small>(e.g. Spain, Sweden)</small> [< I\$ 30 439 per healthy life year]	Middle-income Europe (East) (EurC) <small>(e.g. Ukraine, Russia)</small> [I\$ 9972 per healthy life year]	Middle-income Latin America (AmrB) <small>(e.g. Brazil, Mexico)</small> [< I\$ 9790 per healthy life year]	Middle-income Western Pacific (WprB) <small>(e.g. China, Vietnam)</small> [< I\$ 6948 per healthy life year]	Low-income South-East Asia (SearD) <small>(e.g. India, Nepal)</small> [< I\$ 1985 per healthy life year]	Low-income Africa (AfrE) <small>(e.g. Kenya, Zambia)</small> [< I\$ 2154 per healthy life year]
RISK FACTORS	Tobacco use: Excise tax increase, information and labelling, smoking restrictions and advertisement bans	<i>Shibuya et al. 2003</i> <i>Jha et al. 2006</i>	Yes	Yes	Yes	Yes	Yes	Yes
	Harmful alcohol use: Excise tax increase, ad bans, restricted access	<i>Anderson et al. 2009</i> <i>Rehm et al. 2006</i>	Yes	Yes	Yes	Yes	Yes (except tax)	Yes
	Unhealthy diet: Reduced salt and trans fat content in food (regulated food industry, mass media)	<i>Murray et al. 2003</i> <i>Willett et al. 2006</i>	Yes	Yes	Yes	Yes	Yes	Yes
	Unhealthy diet: Mass media, food taxes and subsidies, information / labelling, and marketing restrictions	<i>Cecchini et al. 2010</i>	Yes (UK)	Yes (Russia)	Yes (Brazil, Mexico)	Yes (China)	Yes (India)	Not established
DISEASES	CVD (prevention): Antihypertensive drugs (BP >160/100); poly-drug therapy (for those > 30% risk)	<i>Murray et al. 2003</i> <i>Gaziano et al. 2006</i>	Yes	Yes	Yes	Yes	Yes	Yes
	CVD (treatment): Drug therapy for IHD/stroke (aspirin, B-blocker, ACEI)	<i>Gaziano et al. 2006</i>	Yes	Yes	Yes	Yes	Yes	Yes
	Diabetes: Glycaemic control (HbA1c > 9%); blood pressure control (>165/95 mmHg); foot care; retinopathy screening and treatment	<i>Narayan et al. 2006</i>	Yes	Yes	Yes	Yes	Yes	Yes
	Cancer: Vaccination, screening and treatment of cervical cancer	<i>Ginsberg et al. 2009</i>	Yes	Yes	Yes	Yes	Yes	Yes

NCD 'best buys' and 'good buys'

<u>Level of health system</u>	Best buys	Good buys
Population-based interventions	<ul style="list-style-type: none"> <u>Unhealthy diet and physical inactivity</u>: Salt reduction via mass media campaigns and reduced salt content in processed foods; replacement of partially hydrogenated trans-fats with polyunsaturated fats; public awareness programme about diet and physical activity; <u>Harmful alcohol use</u>: Enhanced taxation of alcoholic beverages; comprehensive restrictions and bans on alcohol marketing; Restrictions on the availability of retailed alcohol; <u>Tobacco use</u>: Tax increases; Comprehensive legislation creating smoke-free indoor workplaces / public places; Health information / warnings about tobacco; Bans on advertising, promotion & sponsorship; 	<ul style="list-style-type: none"> <u>Unhealthy diet and physical inactivity</u>: Replacement of saturated fats with unsaturated fats; Restrictions on marketing of foods and beverages to children; Promotion of physical activity and a healthy diet in schools and worksites; <u>Harmful alcohol use</u>: Enforcement of drink-driving laws via roadside checkpoints;
Individual-based interventions in primary care (PEN package)	<ul style="list-style-type: none"> <u>Cancer</u>: Prevention of liver cancer via Hepatitis B immunization at birth; Prevention of cervical cancer via screening (VIA) and treatment of pre- cancerous lesions; <u>CVD and diabetes</u>: Multi-drug therapy (including glycemic control for diabetes mellitus) to individuals who have had a heart attack or stroke, and to persons with a high risk (> 30%) of experiencing a CVD event in the next 10 years; Providing aspirin to people with an acute heart attack; 	<ul style="list-style-type: none"> <u>Cancer</u>: Early detection of breast, colorectal and oral cancer <u>CVD and diabetes</u>: Multi-drug therapy (including glycemic control for diabetes mellitus) to persons with a medium risk (20-30%) of experiencing a CVD event in the next 10 years; Control of glucose levels in people with diabetes with insulin, oral glucose-lowering medication, diet and exercise; Prevention of diabetic foot complications (through examination and monitoring); Treatment of rheumatic heart disease (with benzadine penicillin); Management of congestive heart failure <u>Respiratory disease</u>: Treatment of asthma with inhaled steroids & bronchodilators; Brief counseling / intervention for smokers (including those with chronic lung disease / COPD), heavy drinkers and overweight persons

Priority Setting

- Asks: What's the **best** that can be done? (includes all different kinds of benefit).
- Is indifferent to time (e.g. past history).
- Not done at the margin (highly non-marginal: all constraints relaxed).

Priority setting and UHC

- Universal Health Coverage: Priority setting within *and* across the 3 dimensions of the UHC cube:
 1. Which population groups should be covered first.
WHO?
 2. Cover more services for the people already covered (and/or increase quality). **WHAT?**
 3. Reduce out of pocket payments further for people currently covered with a set of services.
HOW MUCH DOES IT COST?

Decision making

- Asks the question What is the 'next' thing to do? Or, What do we do now?
- Depends on what's already been done (history can be 'baked in').
- Done at the margin.

Strategic planning

- Intermediate between Priority setting and Decision-making.
- Asks, Given a set of Priorities and a set of Activities, how can we make our activities look more like our priorities?
- Cares about time in bite-size chunks (3-10 years).
- Can be thought of as decision making that takes account of priorities in forming objectives.
- Multiple constraints addressed (incl. **Affordability**).

Current menu of policy options in
Appendix 3

New policy option identified via WHO Guidelines,
WHO Essential Medicines List or expert review

Evidence of effect:

A demonstrated effect size, from at least one published study in a peer reviewed journal.
A clear link to one of the global NCD targets

Cost-effectiveness:

- Generalized cost-effectiveness will be used to estimate the cost-effectiveness ratio
- Metric: USD/DALYⁱ averted

Size of health gain:

- Expected size of health impact from the intervention (estimated as DALYs averted) in a standardized population of 10 million people using the global average prevalence for the conditions/risk factors of interest.
- Metric: DALY averted

Total cost/budget required:

- Size of budget required to implement the intervention in a standardized population of 10 million people using the global average prevalence for the conditions/risk factors of interest.
- Metric: USD millions

Implementation Considerations (qualitative description):

Health system requirements
Regulatory capacity requirements
Multisectoral action requirements

Menu of policy options for inclusion in Appendix 3