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A Stitch in Time.....

Cardiovascular Diseases

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# Global Atlas on cardiovascular disease prevention and control



Published by the World Health Organization  
in collaboration with the World Heart Federation  
and the World Stroke Organization.



- ▶ An estimated 17.3 million people died from CVDs in 2008
- ▶ Over 80% of CVD deaths take place in low- and middle-income countries
- ▶ By 2030, almost 23.6 million people will die from CVDs

- ▶ CVDs are the **leading causes of death** and disability in the world.
- ▶ Although a large proportion of CVDs is **preventable**, they continue to rise mainly because preventive measures are inadequate.

WHO 2011





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# SA's Burden

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<b>Causes</b>	<b>Deaths (000)</b>	<b>Years of Life Lost (%)</b>	<b>Years of Life Lost (%)</b>
HIV/AIDS	355	52	63
Cerebrovascular disease	30	5	2
Ischaemic heart disease	27	4	2
Lower respiratory infections	23	4	3
Violence	19	3	3
Tuberculosis	14	2	2
Diarrhoeal diseases	13	2	3
Road traffic accidents	13	2	2
Diabetes mellitus	12	2	1
COPD	9	1	1





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# SA's Burden of Risk Factors

Risk factor	Estimated number affected
Smoking tobacco	7.7 million
High BMI	9.1 million
Hypertension	6.3 million
Diabetes II	0.9 million
High blood cholesterol	7.9 million
Low fruit and veg	13.4 million
Physical inactivity	13.6 million

Source: South African Comparative Risk Assessment  
Norman et al, 2007

Thanks to Debbie Bradshaw, MRC



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# WHO and World Bank data

(Walter et al. 2006)

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Predict that over the next 30 years not only will there be an almost doubling of deaths due to CVD in South Africa but that an increasing proportion of these will be amongst the working age group (ages 35-64) compared to other age groups

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# CVD: Key Points

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- ▶ **80% of premature CVDs are preventable.....lifestyle changes**
- ▶ The major modifiable risk factors for CVD are known
  - Tobacco use
  - Sedentary lifestyle
  - Unhealthy diet
  - Harmful use of alcohol
- ▶ **Yet.....unhealthy behaviours continue to be adopted by both individuals and communities**
- ▶ Modification of risk factors reduces mortality and morbidity in people with diagnosed or undiagnosed CVD
- ▶ Directly controlling **blood pressure, total cholesterol, and smoking** leads to rapid and substantial reductions in CVD rates → Therefore focusing on controlling these three risk factors will rapidly and to a large extent reduce CVD globally within a few years (Lancet 2011)





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# DALYs gained over time, per intervention

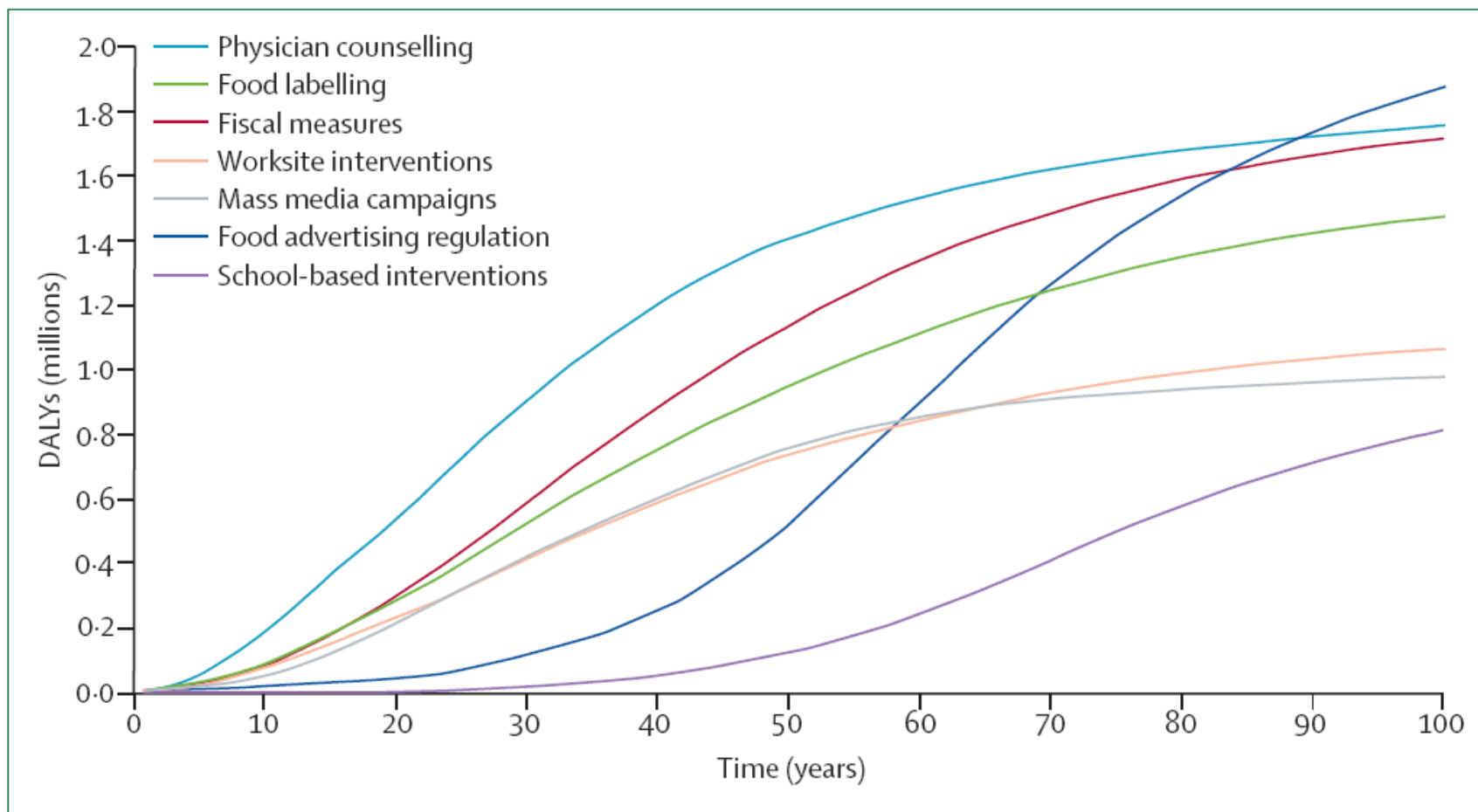


Figure 3: Cumulative disability-adjusted life-years (DALYs) gained over time



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# Multi-Layered complexity of causes

## UNDERLYING SOCIOECONOMIC, CULTURAL, POLITICAL AND ENVIRONMENTAL DETERMINANTS

Globalization

Urbanization

Population ageing

## COMMON MODIFIABLE RISK FACTORS

Unhealthy diet

Physical inactivity

Tobacco use

## NON-MODIFIABLE RISK FACTORS

Age

Heredity

## INTERMEDIATE RISK FACTORS

Raised blood pressure

Raised blood glucose

Abnormal blood lipids

Overweight/obesity

## MAIN CHRONIC DISEASES

Heart disease

Stroke

Cancer

Chronic respiratory diseases

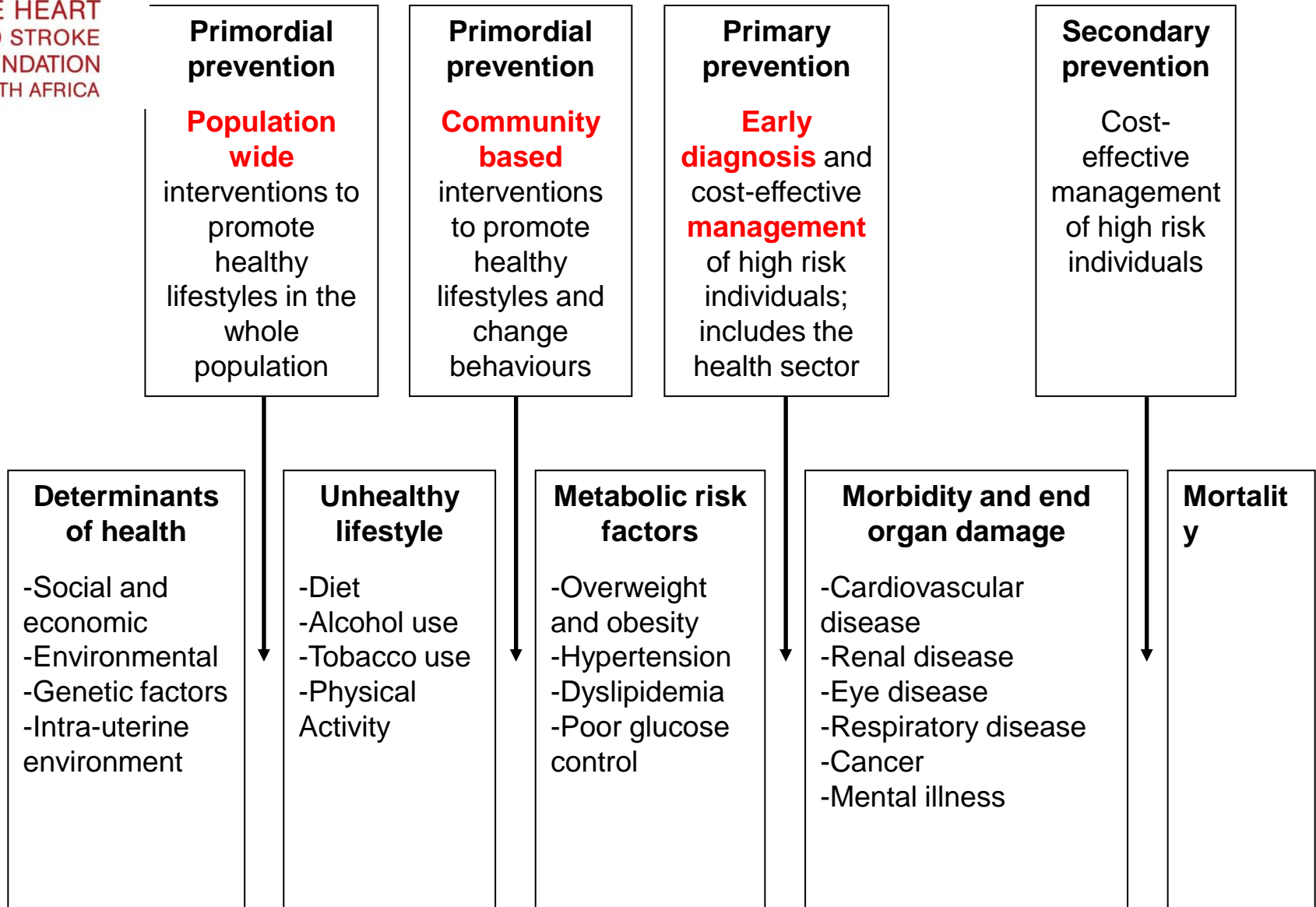
Diabetes

...from...*Preventing Chronic Diseases: a vital investment*. Geneva, World Health Organization, 2005.



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# Framework for promoting healthy lifestyles





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# Drivers of Risk Factors



Category	Items	% of pupils who purchased
"Healthy"	Fruit	11.8%
	Fruit juice	10.7%
	Nuts	6.5%
	Brown bread	4.6%
"Unhealthy"	Potato chips	46.3%
	Sweets and chocolates	46.0%
	Soft drinks	33.2%
	French fries	25.6%
	Meat pies, sausage rolls	12.2%
	Cookies	11.8%
	"Fat cakes" (fried dough)	9.5%
	Hot dogs	8.2%
White bread	5.5%	

(Temple et al., 2006)

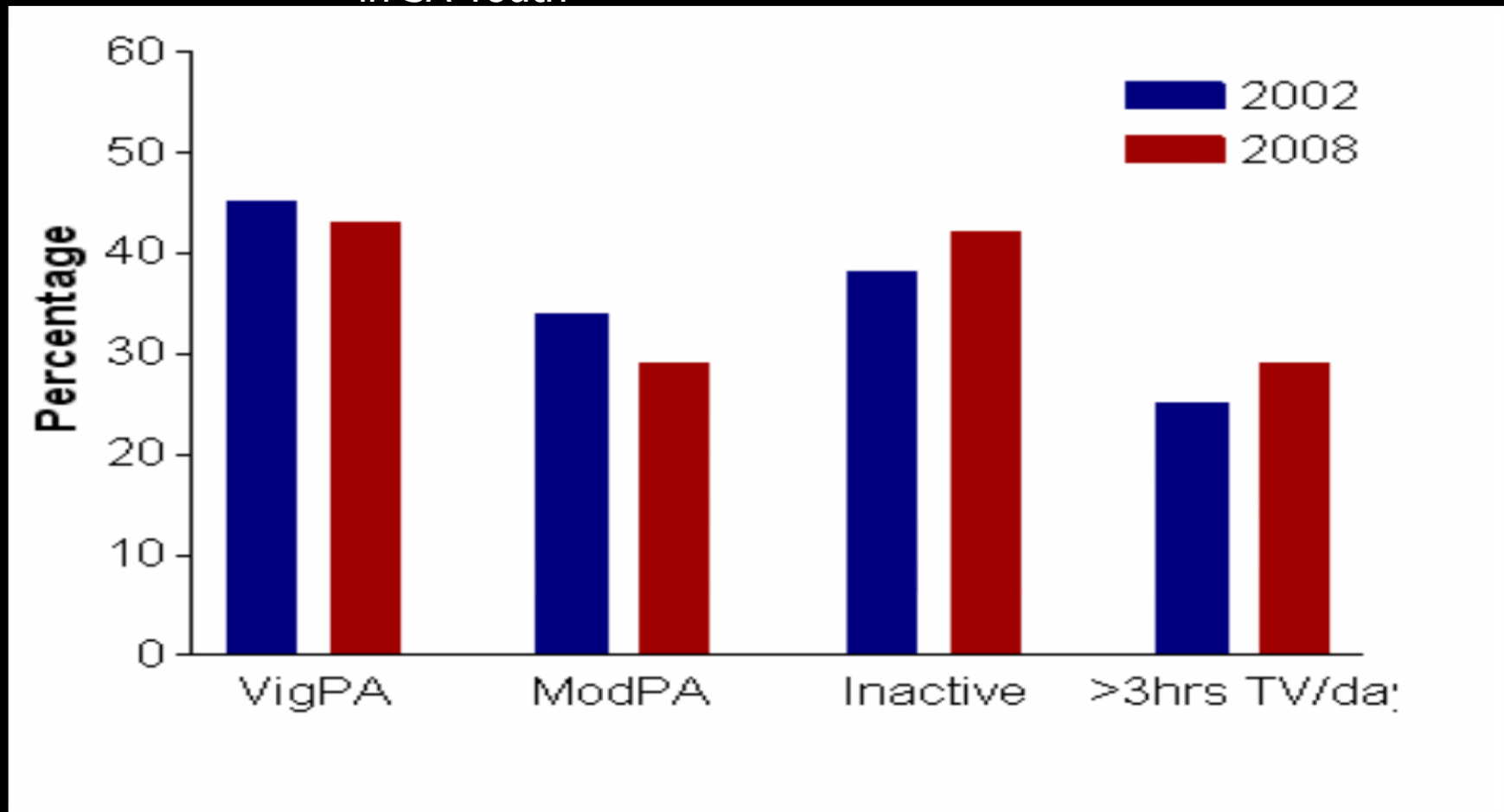




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# Drivers of Risk Factors

Physical Activity Patterns  
in SA Youth





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# Drivers of Risk Factors in Children

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## Physical Activity

- ▶ Participation in physical education and physical activity - ↓ from 2007
- ▶ < 70% of high-school learners have regularly scheduled PE

## Unhealthy diet

- ▶ >50% of learners drank sweetened cool drinks often (> 4 times/wk)
- ▶ +/- 20% of advertising time on SA television is related to food, over half of which is of poor nutritional value

## Tobacco

- ▶ While smoking prevalence rates have decreased overall since the anti-tobacco legislation, little effect is noted in youth
  - ▶ Despite the good smoking legislation and policy, very little formal tobacco prevention or cessation interventions for adolescents and children
  - ▶ Smoking is addressed in the national curriculum (life orientation), but even so is not receiving adequate attention in the school setting
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# Is the right choice the easy choice?

## Access to health foods

- ▶ Shortage of healthy low-fat food and little fresh fruit and vegetables in townships.
- ▶ Most local shops sell cheap fatty foods.
- ▶ Healthy foods prohibitively expensive, processed foods exceedingly cheap

## Advertising

- ▶ Supermarkets make healthy foods available BUT low prominence
- ▶ Supermarkets offer more shelf space to fruits and vegetables than other stores, BUT devote nearly double the shelf space to snack items vs. fruits and vegetables
- ▶ 82% of all food promotions in supermarkets were for unhealthy foods → Children are main target audience i.e. 100% of supermarket promotions in confectionery, sweet biscuits, chips/savoury snacks, dairy products, and ice cream were directed at children

## Perceptions

- ▶ “I am scared of exercising because I will lose weight and people may think that I have HIV/AIDS.”
- ▶ “People who boil food are not civilised. Fried food is attractive and tasty such as “Kentucky Fried Chicken”. If your neighbour boils food people say she is still backward because the food does not taste nor look attractive”

Chopra M, Puoane T. Diabetes Voice 2003; 48: 24–6.

Temple, et. al., "Price and availability of healthy food: A study in rural South Africa." Nutrition Journal 1 (2010): 1-4. Farley et. al.. "Measuring the Food Environment: Shelf Space of Fruits, Vegetables, and Snack Foods in Stores." Journal of Urban Health 86 5 (2009): 672-682



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# Multi-pronged, inter-sectoral, multi-generational, evidence-based, collaborative approach

Government – national, provincial, departments, clusters

Work places

Government

Community

Dietary policy and guidelines

School Nutrition Programme, Canteens, vending machines, catering for meetings and events

Other policies

Physical Activity, smoking free zones

Empowerment

Health Curriculum

Healthy Lifestyles advice, sessions, Parental involvement, committee involvement

Advocacy

Multi-media to promote healthy lifestyles

Structural

Food, subsidies/incentives for healthy foods in deprived areas, urban design that promotes physical activity, incentives for workplaces, safety and security

Private Sector – health-care

Private Sector – CSI

NGOs, NPOs, CSOs



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# What else do we know? 4 x 4

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## 4 Risk Factors

- ▶ Tobacco use
- ▶ Unhealthy diets
- ▶ Lack of physical activity
- ▶ Harmful use of alcohol

## 4 Diseases

- ▶ CVD
- ▶ Diabetes
- ▶ Cancer
- ▶ Chronic Lung diseases

*NON-COMMUNICABLE  
DISEASES (NCDs)*

*“at least 80% of heart disease, stroke, and Type 2 diabetes, and 40% of cancer could be avoided through healthy diet, regular physical activity, and avoidance of tobacco use”*

(Strong 2005)

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# Non-Communicable Diseases

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- 60% (35 million) of global deaths
- 75% of all deaths by 2030
- More than 80% of deaths in low and middle income countries (LMIC's)
- Amongst the top 10 causes of premature mortality in South Africa
- 28% of deaths in 2002





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# Barriers

- ▶ Little collaboration between various stakeholders
  - ▶ NGO's often work in isolation of district, provincial and national structures
  - ▶ Silo, non-collaborative approach
    - non-alignment of strategies
    - duplication of efforts creating message fatigue
    - inefficient use of resources (funding, people, and infrastructure)
  - ▶ Regional pockets of interventions → limited reach of the population
  - ▶ Reluctance to share information
- ▶ No clear regulatory, monitoring and reporting mechanisms
  - ▶ Accountability and transparency at the discretion of individuals or organisations
    - varying standards and interpretations
- ▶ No agreed overarching objectives
- ▶ Funding challenge → a competitive landscape and reluctance to collaborate and share information





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# Going Forward





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# Effectiveness and cost effectiveness of cardiovascular disease prevention in whole populations: modelling study

BMJ 2011;343:d4044 doi: 10.1136/bmj.d4044

## What is already known on this topic

- ▶ Population-wide prevention programmes, such as salt reduction, *trans fat eradication*, or *smoke-free legislation* seem to be very effective for preventing CVD
- ▶ Studies in the United States and Australia suggest that as well as reducing CVD events and deaths, such programmes may also be cost saving

## What this study adds

- ▶ A national programme reducing population cardiovascular risk by 1% would prevent approximately 25 000 CVD cases and generate public sector savings of about £30m a year
- ▶ Reducing mean population cholesterol or blood pressure levels by 5% (as already achieved in some other countries) would result in annual savings of approximately £80m or £100m
- ▶ Legislation or other measures to reduce dietary salt intake by 3 g/day or industrial *trans fatty acid* intake by approximately 0.7% of total energy content would save about £40m or £230m a year





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# It makes sense at all levels, even economic

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## *Effectiveness and cost effectiveness of cardiovascular disease prevention in whole populations: modelling study*

*BMJ 2011;343:d4044 doi: 10.1136/bmj.d4044*

- ▶ Generic population-wide interventions → Reducing CVD risk of the population by just 1% sustained over 10 years
    - ▶ Prevent approximately 25 000 new cases of and 3500 deaths from CVD
    - ▶ Gain around 98 000 QALYs
    - ▶ Annual savings across the 10 years of the programme of approximately £30m
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Thank You

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