

Vietnam National Congress of Cardiology
Halong Bay, 2012

Cardiology in the New Era *Where East meets West*

*Epidemiological Transition of CVD
and risk factors from West to East*

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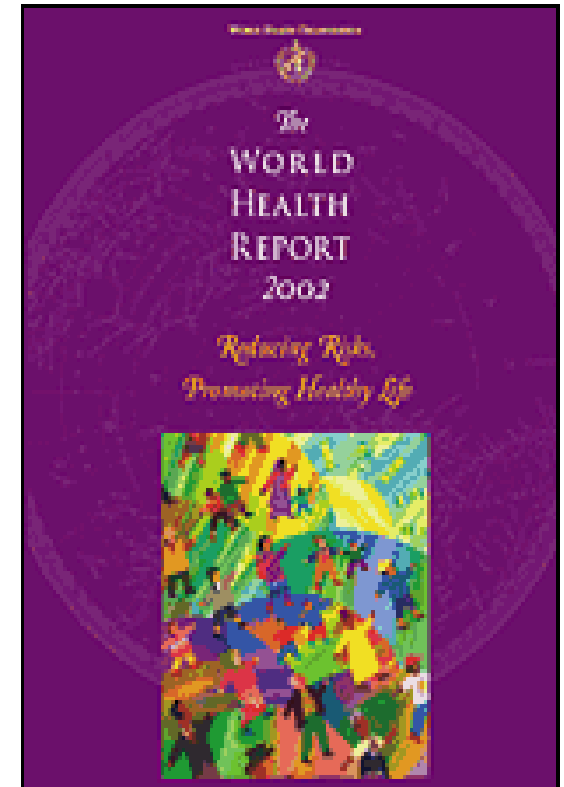
Cardiology in the New Era Where East meets West

Global Burden of Disease

Epidemiological Transition

Focus on Risk Factors
Hypertension

Prospects for Prevention



**2002 World Health Report
“Reducing risks,
promoting healthy life”**

Health in Developed and Developing Countries: Two Different Worlds?

Developed Countries

- Seen as having problems associated with wealth
 - Available money to pay for poor health habits

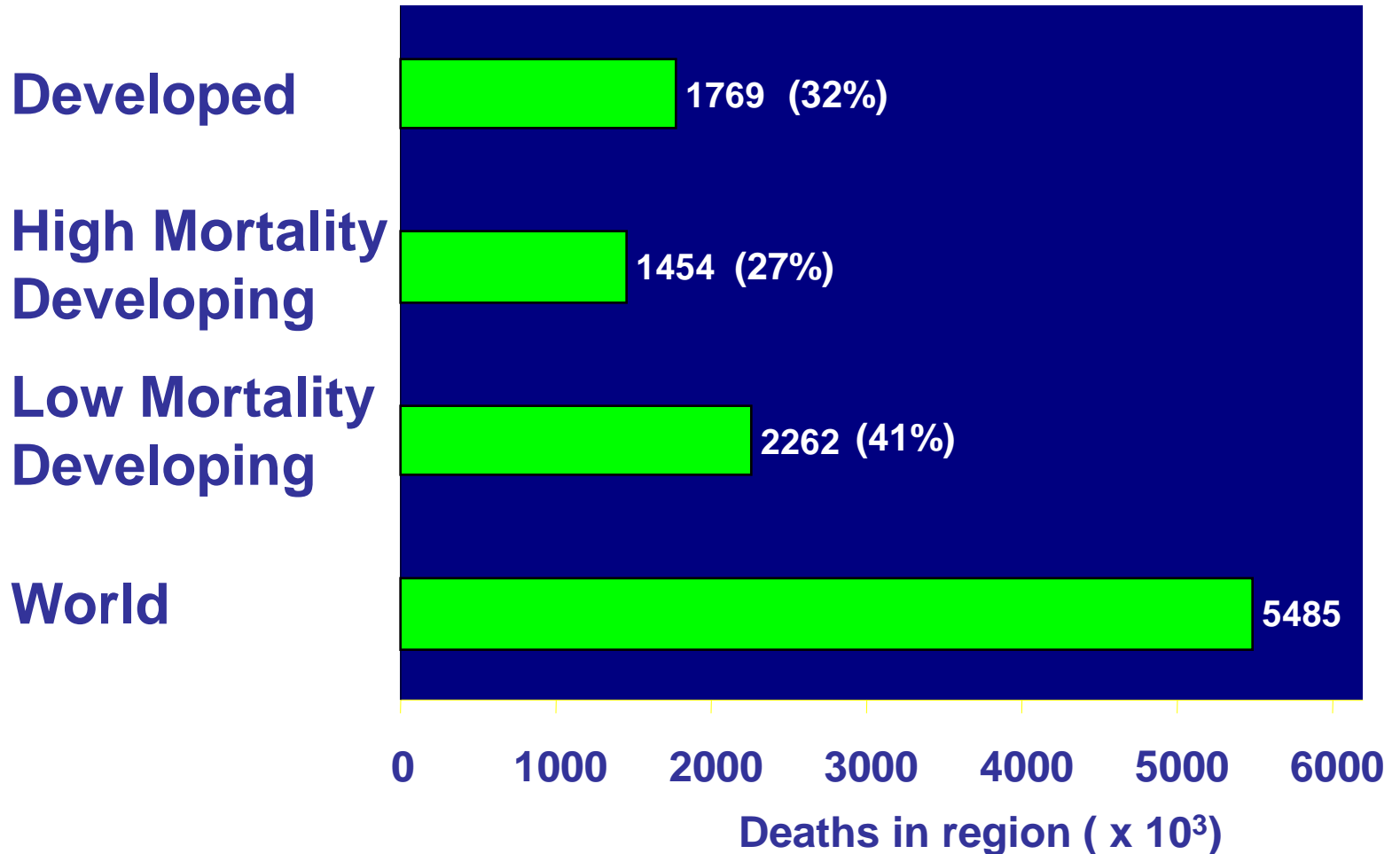
Developing Countries

- Seen as having problems associated with poverty
 - Poor infrastructure and limited access to care, which leads to famine, infections, and limited life span

The numbers reflect a different reality.



Cerebrovascular Disease Deaths WHO Regions



The Numbers: Developing Countries

Deaths from Cardiovascular Disease (1990-2020)

Projected to increase by 120% in women and 137% in men

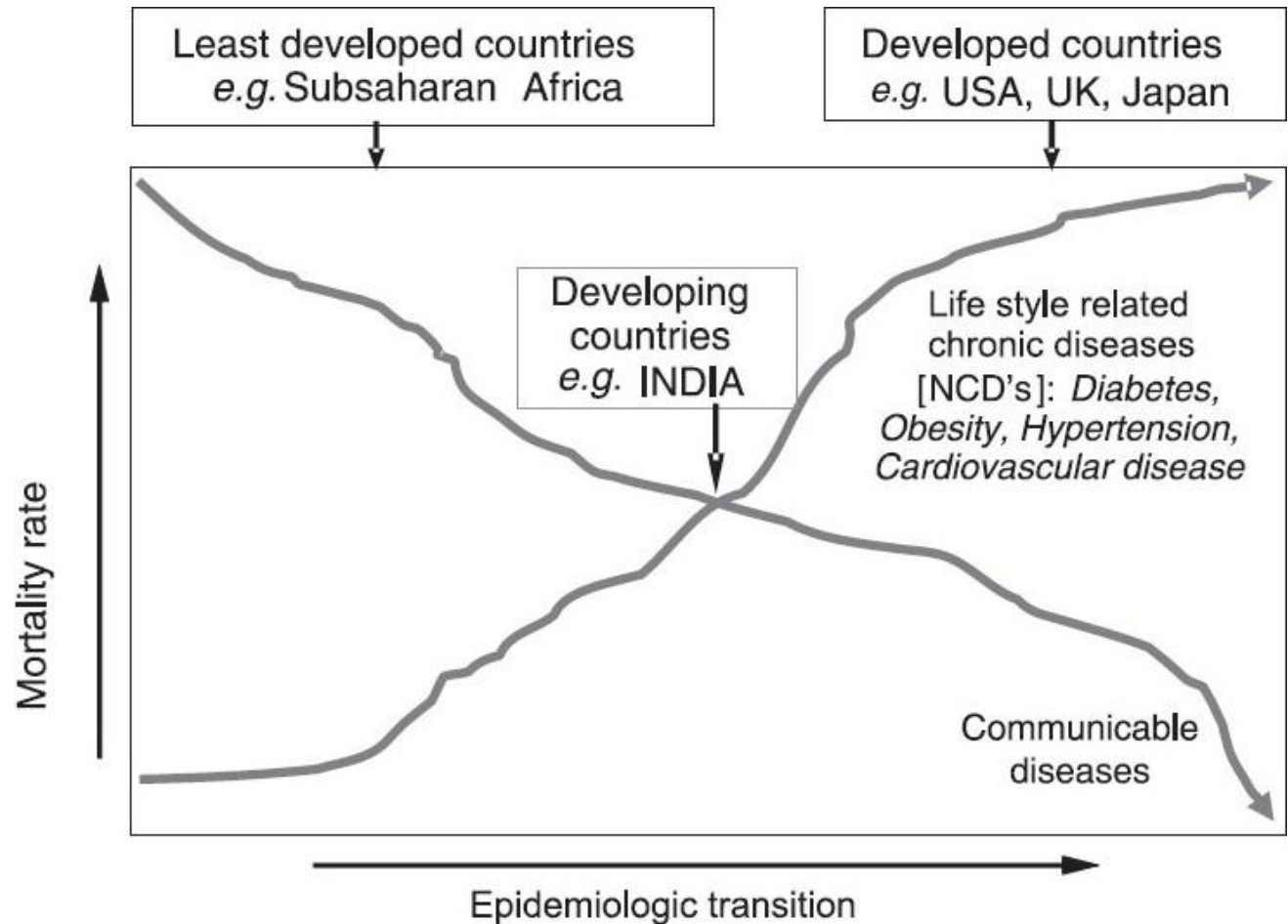
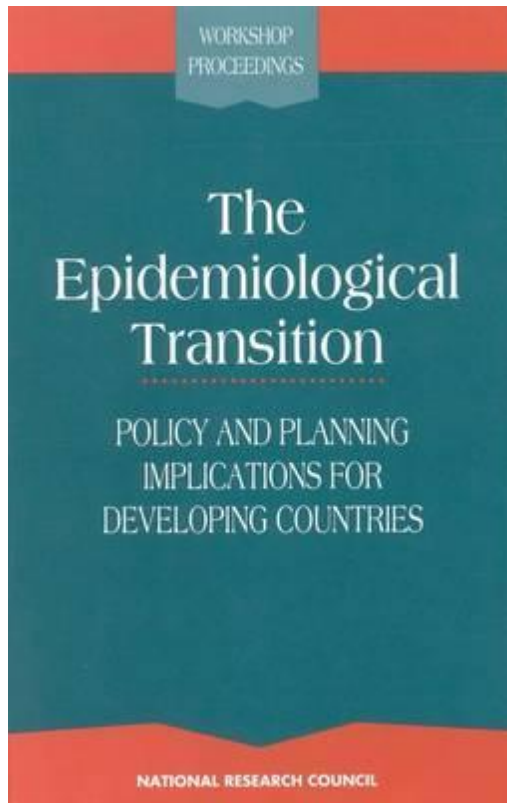
Cancer Rates (1990-2000)

Increased 19%

Diabetes (2000-2030)

Projected to affect 6.5% of the population

Epidemiological Transition



Why Do Acute and Chronic Diseases Coexist in Developing Nations?

Epidemiological transition

interaction between pattern of health and disease and “their demographic, economic & social determinants and consequences”

Pestilence &

Receding

Degenerative &

Famine

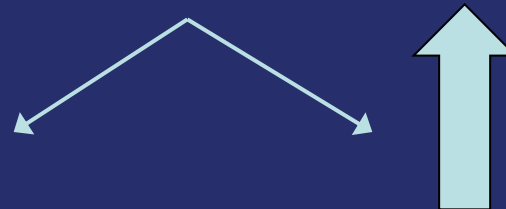
Pandemics

Man-made

Economic Growth

↓ Infectious diseases

↑ Chronic diseases



Double Burden of Acute and Chronic Diseases in Developing Countries

Competition for
resources



Polarizing effect on
public-health
community

Deaths in Developing Countries

1. Cardiovascular disease
2. Cancer
3. Injuries
4. Respiratory diseases
5. **HIV/AIDS**
6. **Perinatal conditions**
7. **Diarrheal disease**
8. **Tuberculosis**
9. **Digestive disease**
10. **Malaria**

What's driving the rapid change? GLOBALISATION



187 MILLION SMOKERS IN 2002



532 MILLION SMOKERS IN 2025

ATTRACTING FEMALE SMOKERS

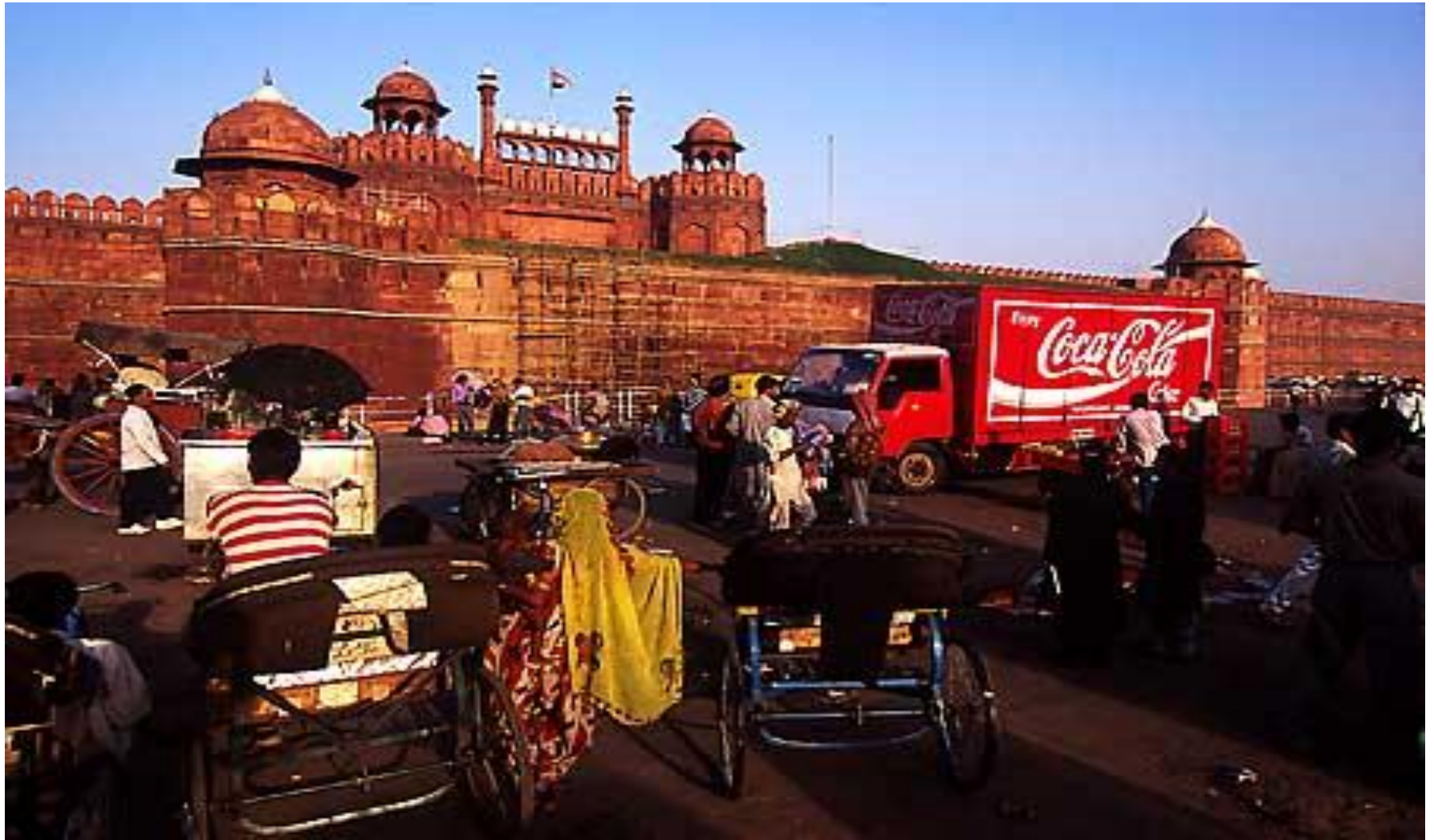
What's driving the rapid change?

- fast food industry spends US\$4b/yr
- McDonalds spends more on advertising than any other brand
- most widely recognised brand in the world
- 25 000 restaurants in 100 countries
- average five new restaurants opened per day
- 85% of new restaurants outside of the US



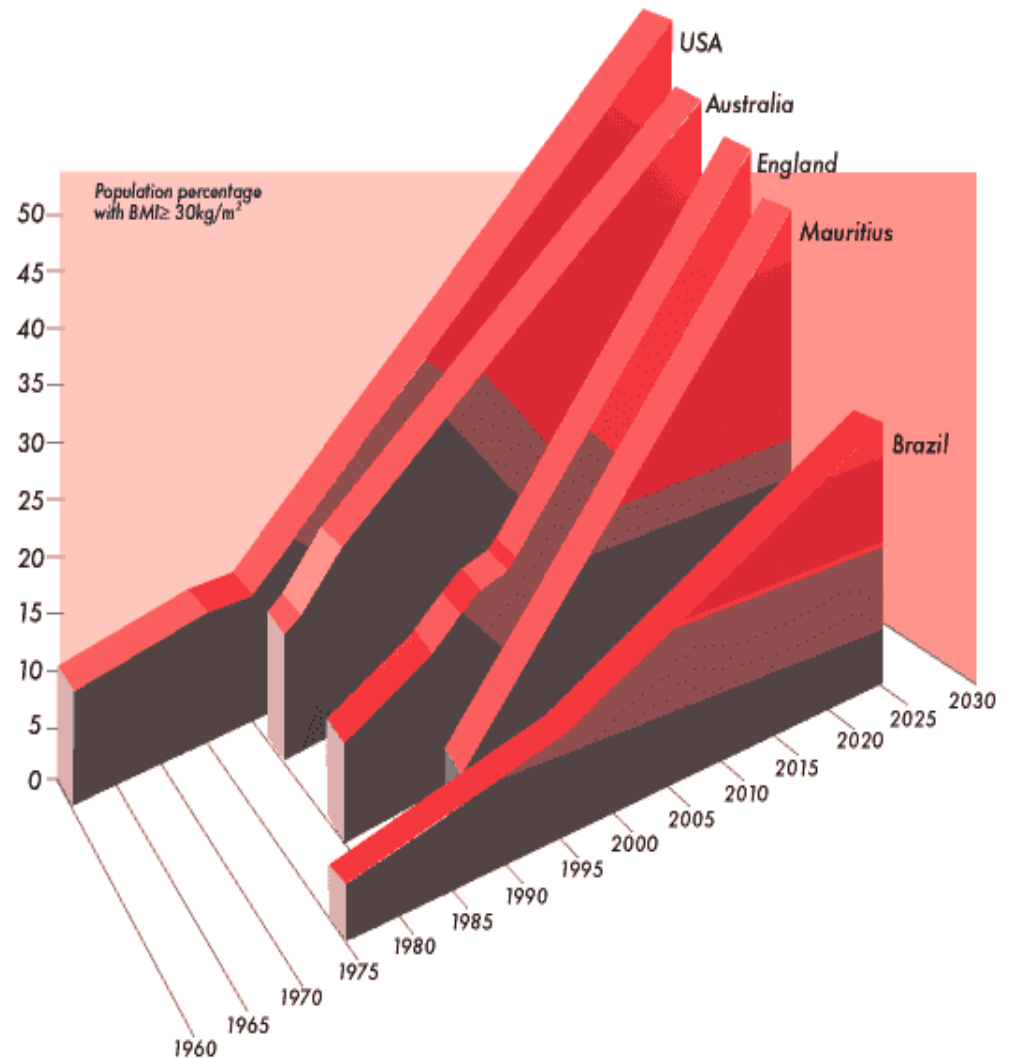
McGLOBALISATION

What's driving the rapid change?

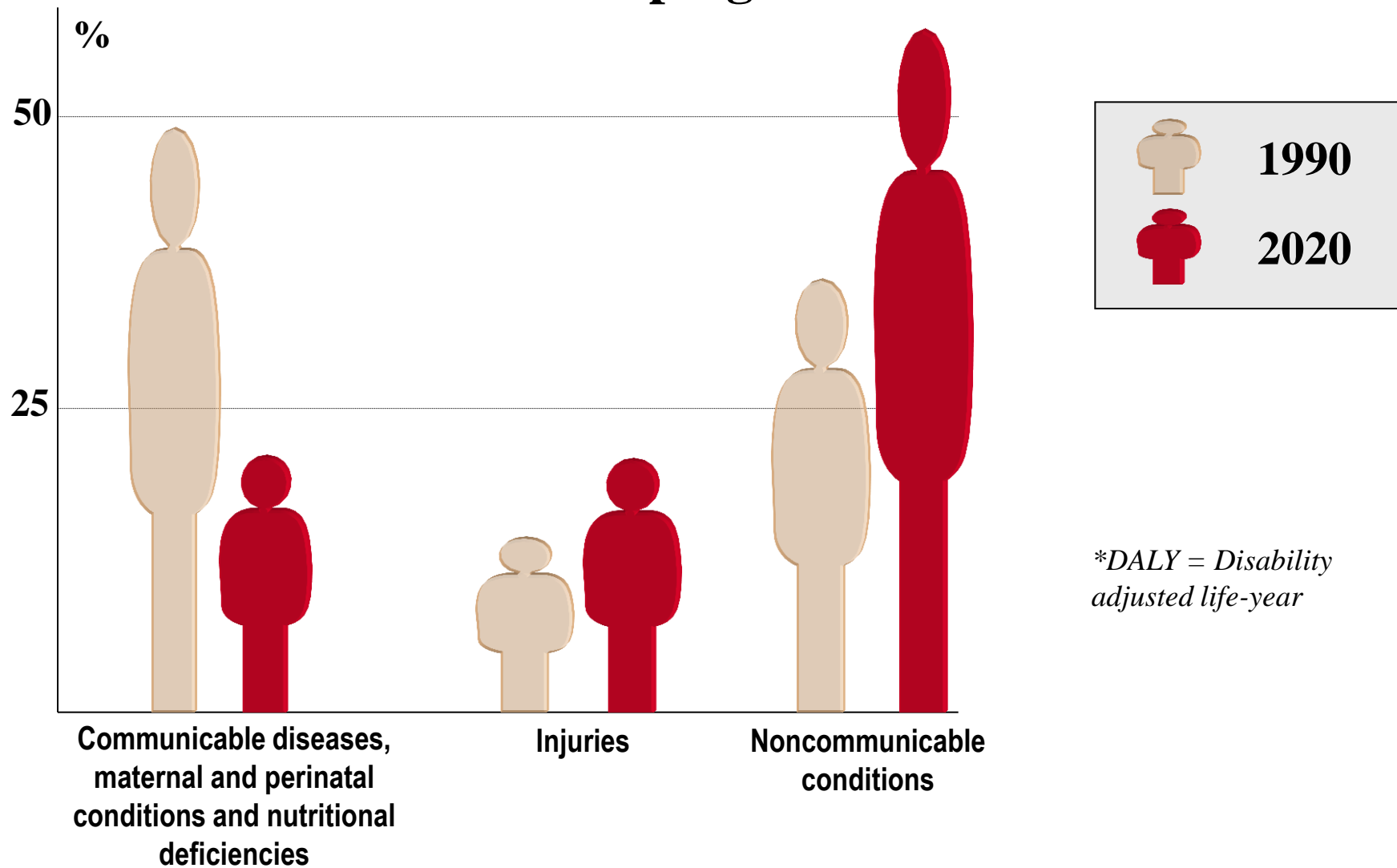


GLOBAL TRENDS IN OBESITY

- 1 billion overweight adults in world, 300 m clinically obese
- 2/3 US adults overweight or obese (increasing 74% since 1991)
- 50% of European adults overweight
- 6-fold ↑ overweight and obese women in Philippines
- 30-40% of adults in large urban areas in India are overweight/obese
- 20% obesity rate in some urban areas in China (200m Chinese are now overweight)

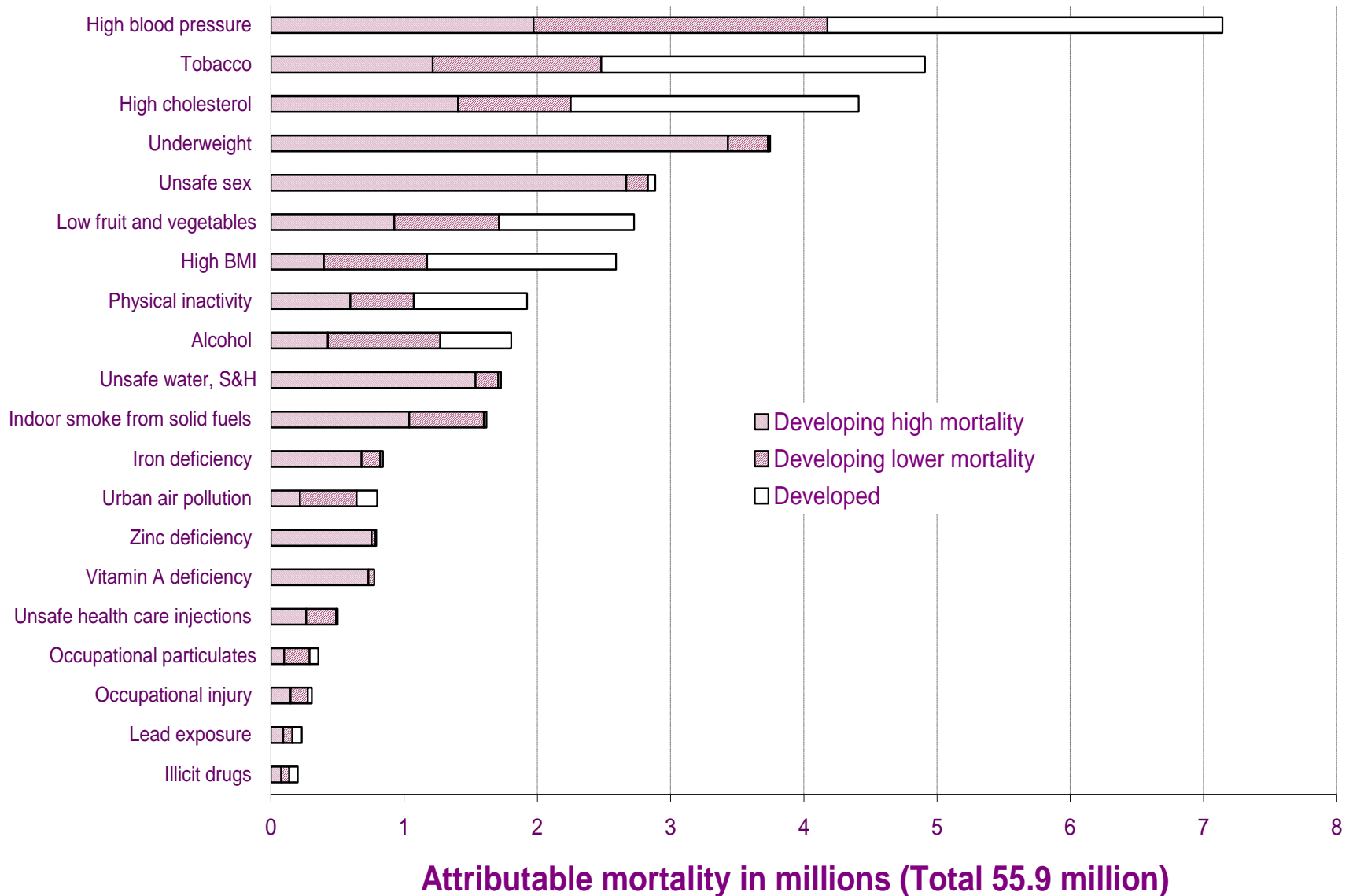


Burden of disease by broad cause group 1990 - 2020 in Developing Countries*



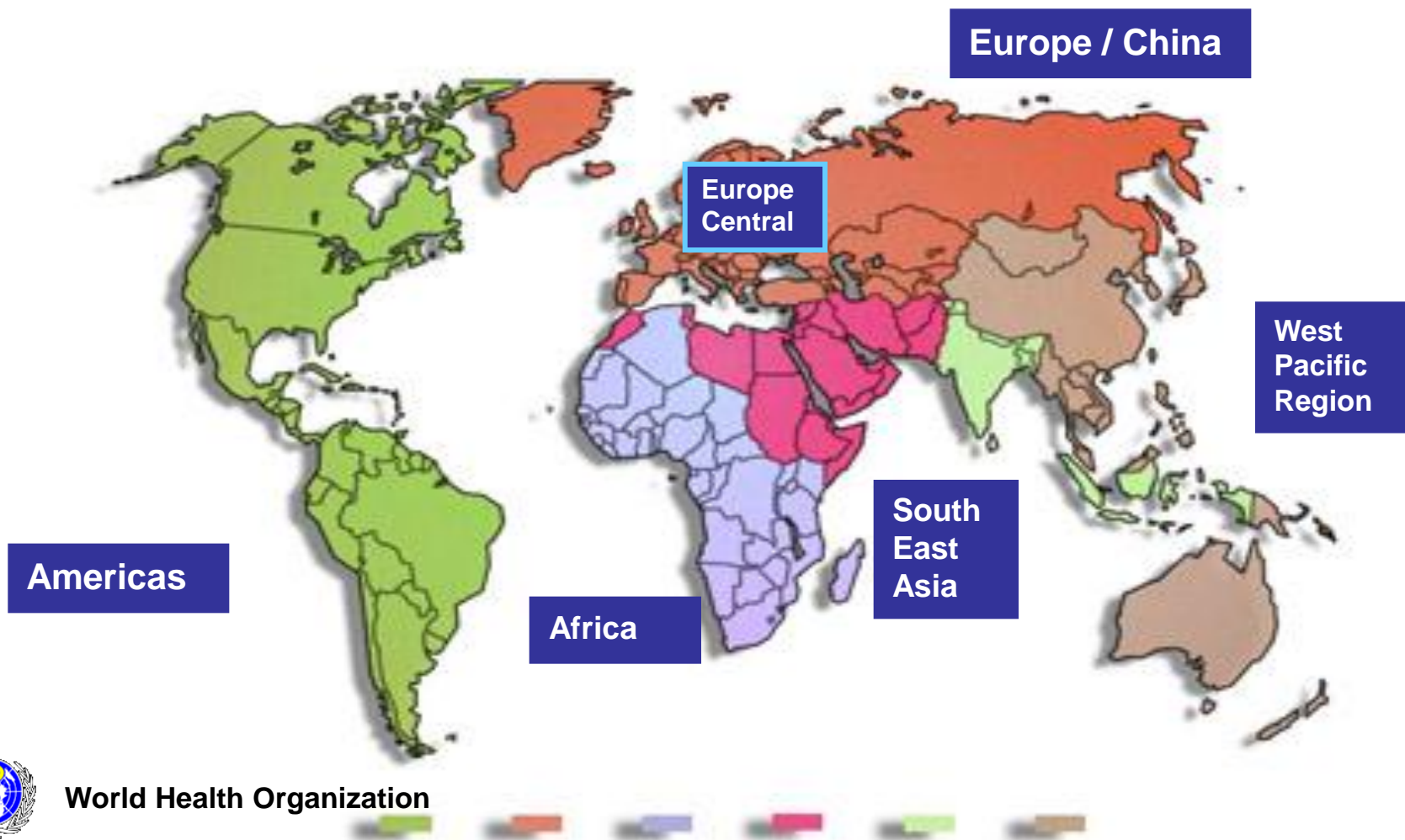
*DALY = Disability adjusted life-year

Hypertension – a potent risk factor





A Global Approach *Hypertension Awareness, Prevention and Control*



Chronic-Disease Prevention: Underfunded and Underrepresented

WHO Study of Chronic-Disease Prevention

Out of 185 countries, 39% had budget lines for chronic-disease prevention (mostly developed countries)

WHO Spending

Communicable diseases:	\$7.50 per person/death
Chronic diseases:	\$0.50 per person/death

**International health course work does not reflect
current global burden of chronic disease.**

STRATEGIES TO REDUCE RISK: World Health Report messages

- Sustained policy action – eg. tobacco tax
- Education of public health professionals
- Surveillance activities to monitor changing population distributions of risk factors (like blood pressure, blood cholesterol) through general lifestyle changes
- CVD: Population wide strategies to lower cholesterol (Quality of Fat) and blood pressure (Salt Reduction)
- Mix of population wide, high risk and secondary prevention measures, in a cost effective balance



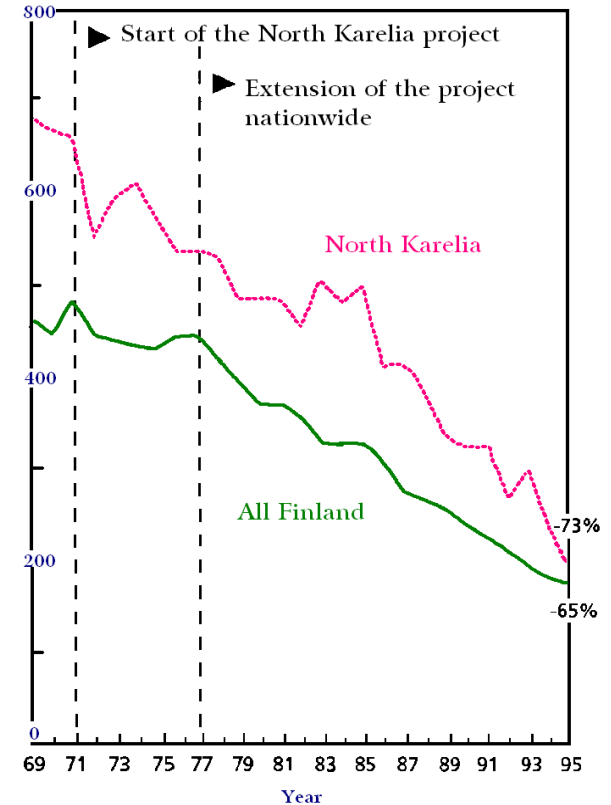
Cardiology in the New Era Where East meets West

Major issue for International community

Reversal has been seen at a population level

Education, research and training are core components

Novel strategies to enhance the uptake of evidence based management



Cardiovascular Disease Prevention Therapeutic Initiatives - Novel Strategies Poly-pill

Poly-pill for CVD Prevention

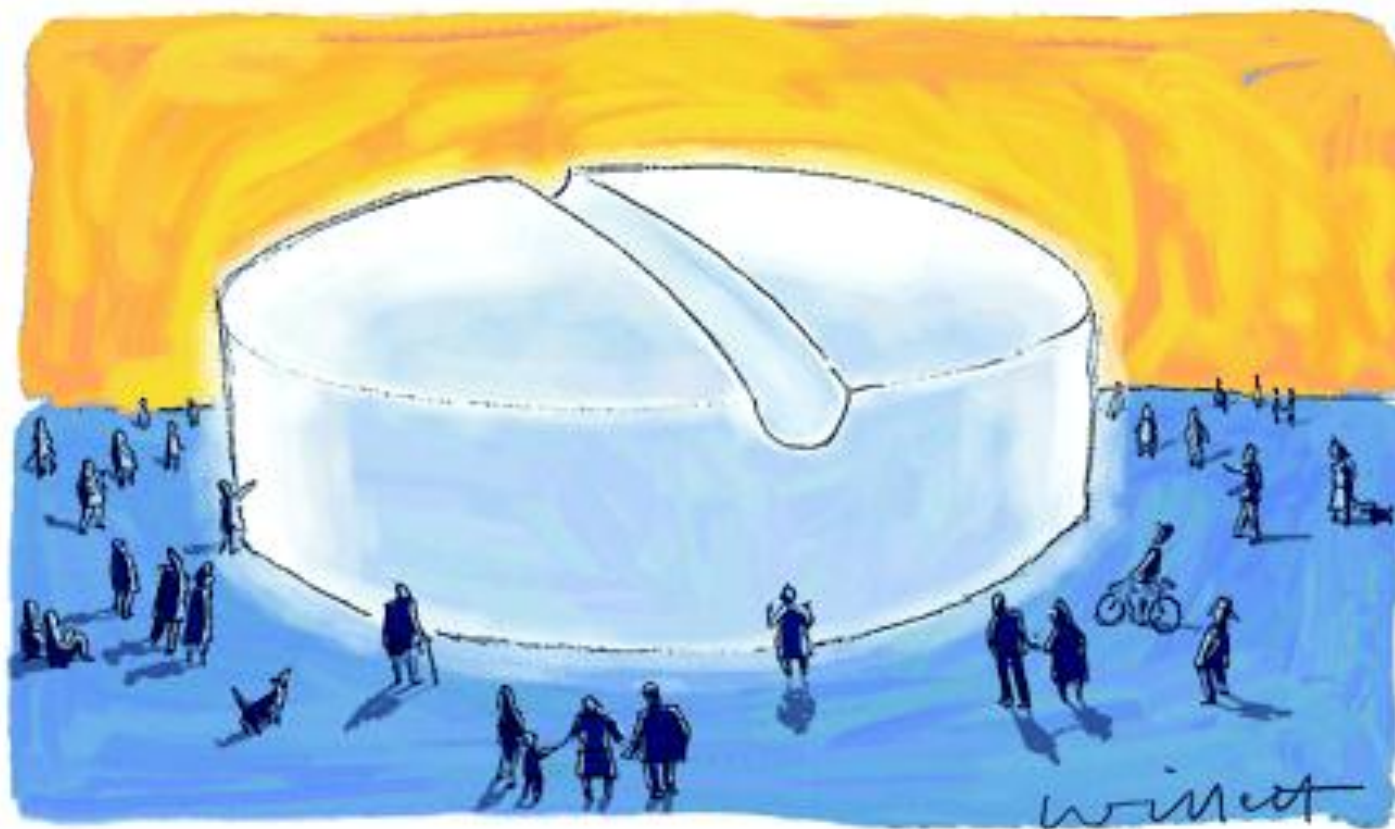
- combination off-patent drugs
- aspirin, ACE Inhibitor, diuretic, statin
- Level 1 evidence for benefit

Drug formulations have been developed

- Dr Reddy's – India

Trials currently being pilot tested

- George Institute (Australia & New Zealand)

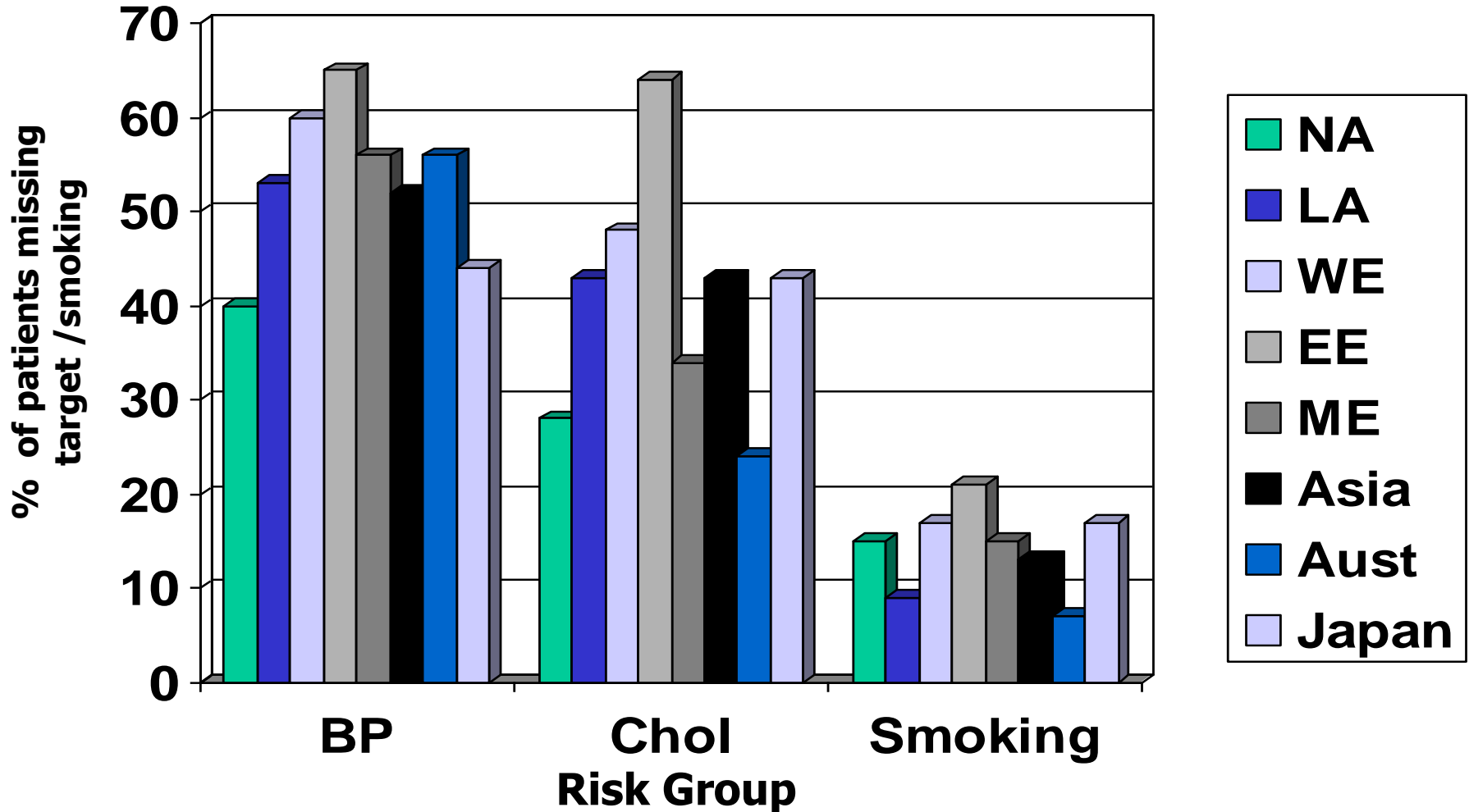


A pill to prevent 80% of CVD !

The most important *BMJ* for 50 years? Richard Smith



Lack of control of risk factors world-wide





Development of the Poly-pill

Dr Reddy's Laboratories (Hyderabad, India)

Version 1: aspirin 75mg,
simvastatin 40mg,
lisinopril 10mg,
atenolol 50mg;

Version 2: aspirin 75mg,
simvastatin 40mg,
lisinopril 10mg,
hydrochlorothiazide 12.5mg.

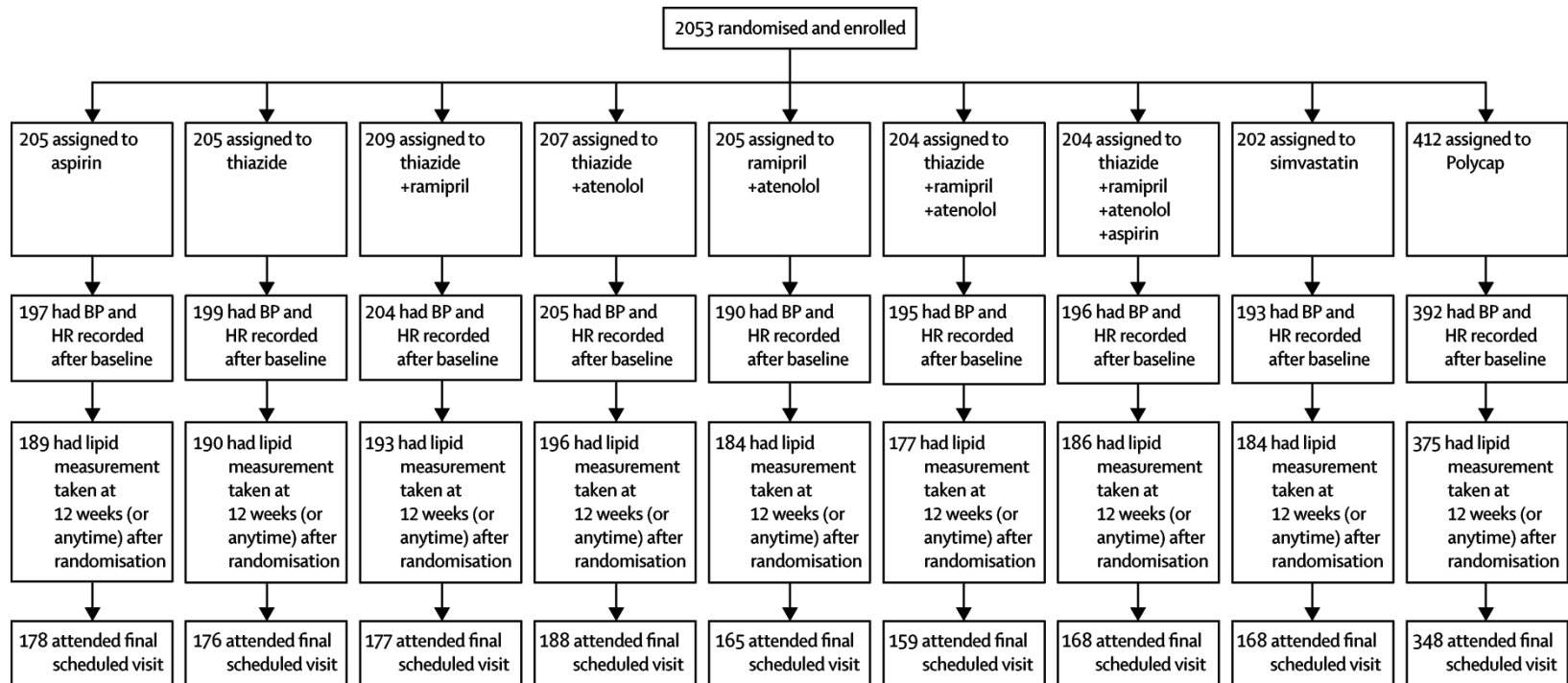




TIPS: The Indian Polycap Study

- Phase II, double blind randomised trial
- Three antihypertensive drugs, statin & aspirin
- 12.5 mg Hydrochlorothiazide; 50mg Atenolol; 5mg Ramipril; 20mg Simvastatin; 10g aspirin
- 12 weeks active treatment

Lancet, 2009





TIPS: The Indian Polycap Study

In those with **average** risk factor levels,

1. The Polycap is similar to the added effects of each of its 3 BP lowering components. There is greater BP lowering with incremental components. ASA does not interfere with the BP lowering effects.
2. The Polycap reduces LDL to a slightly lower extent compared to simvastatin alone
3. The Polycap lowers thromboxane B2 to a similar extent as aspirin alone.
4. The Polycap is well tolerated.
5. The Polycap could potentially reduce CVD risk by about **half**.



TIPS: The Indian Polycap Study

Estimated reduction in CHD/stroke of a polypill in those with average risk-factor levels

Risk factor	Treatment	Reduction in risk factor	% relative risk reduction in CHD	% relative risk reduction in stroke
LDL-C (mmol/L)	Simvastatin 20 mg)	0.80 mmol/L	27	8.1
Diastolic BP (mm Hg)	3 drugs, half dose	5.7 mm Hg	24	33
Platelet function	ASA 100 mg	Similar	32	16
Combined			62	48

Similar rates of discontinuation

Overall compliance was poor – 18% drop out

This holds tremendous promise but it's a first step, and we've got miles to go before we sleep.



Kanyini GAP Trial

Version 1 (post MI)

aspirin 75mg
simvastatin 40mg
lisinopril 10mg
atenolol 50mg

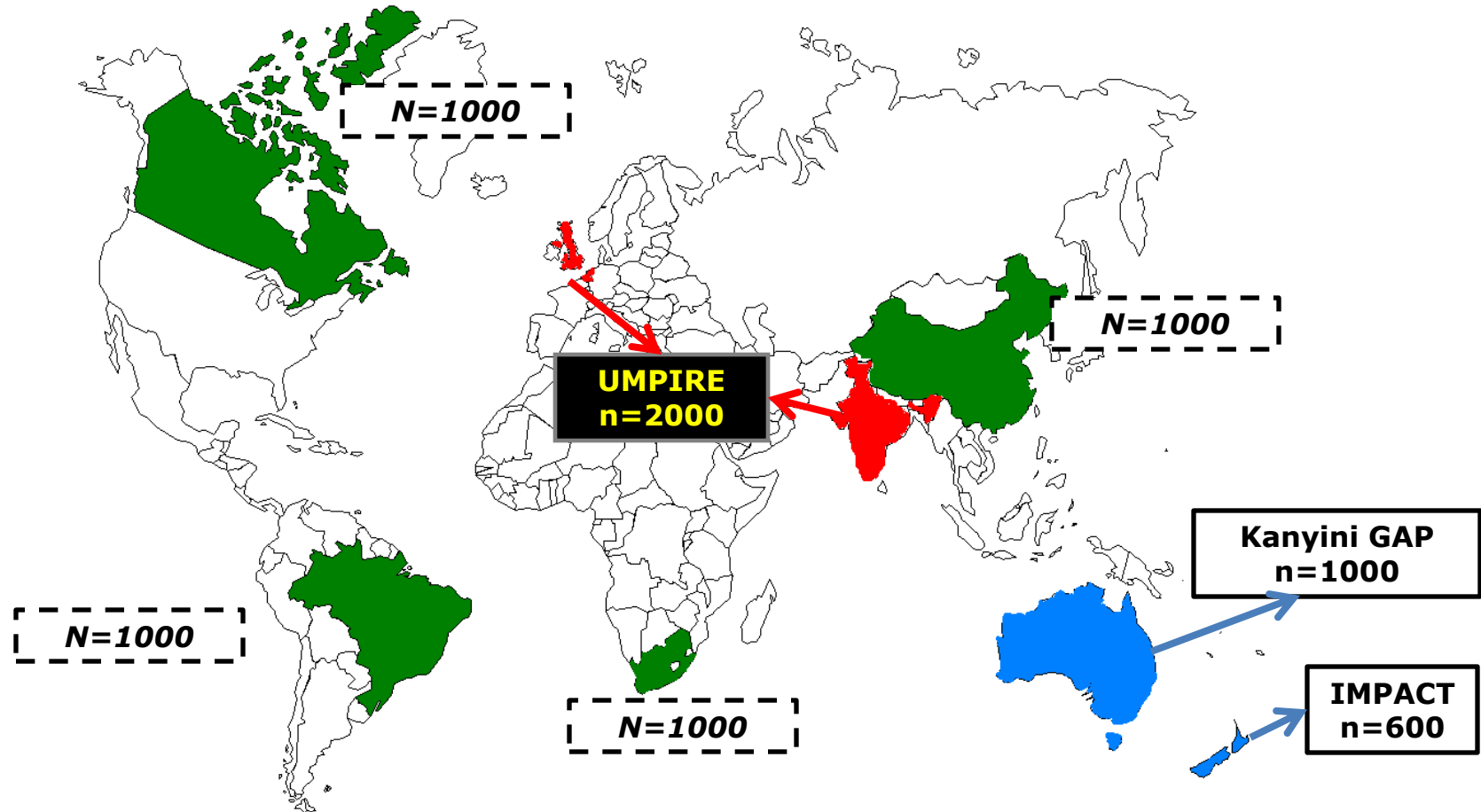
Version 2 (post stroke)

aspirin 75mg
simvastatin 40mg
lisinopril 10mg
hydrochlorothiazide 12.5mg





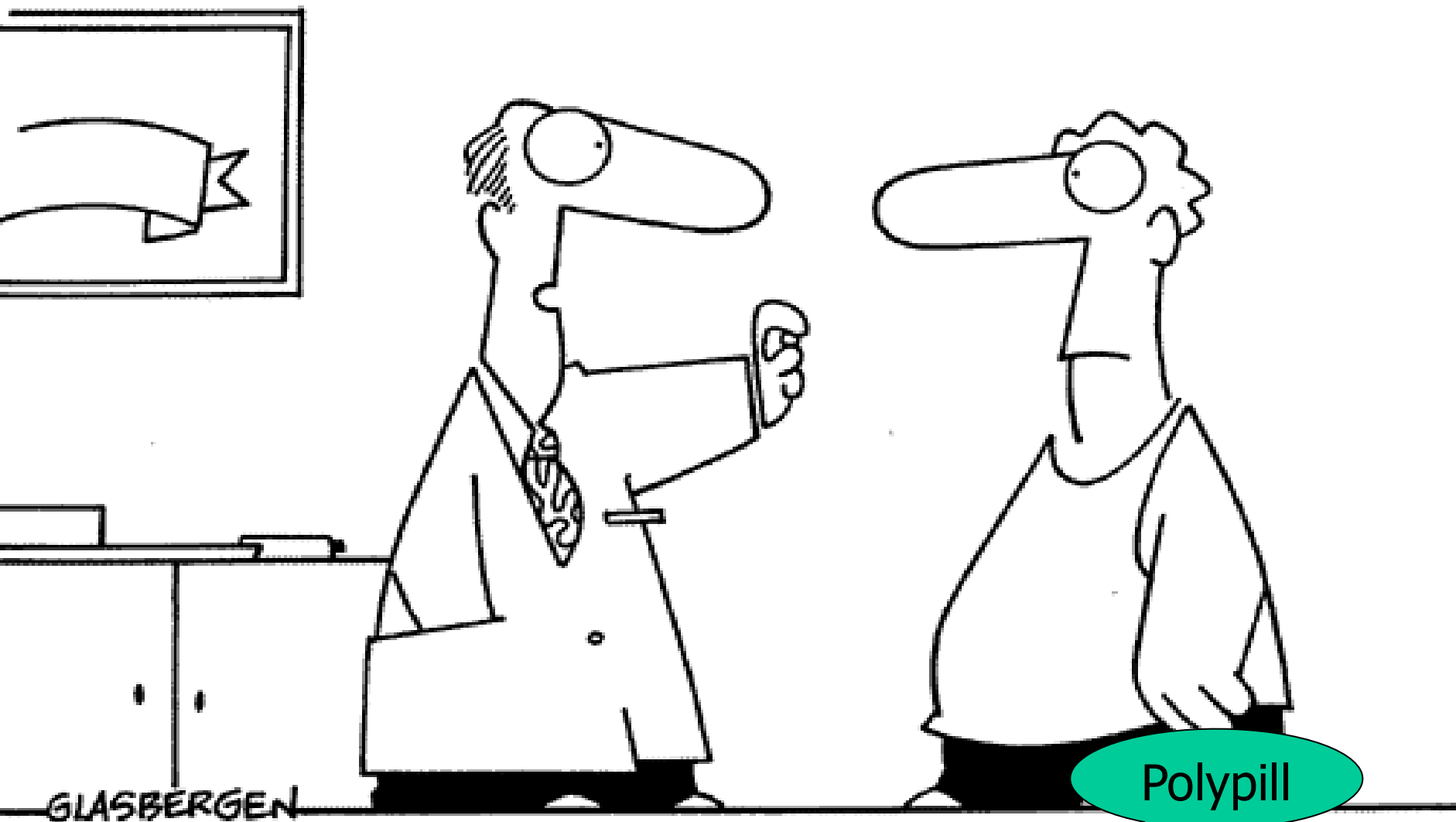
SPACE Collaboration (Single Pill to Avert Cardiovascular Events)



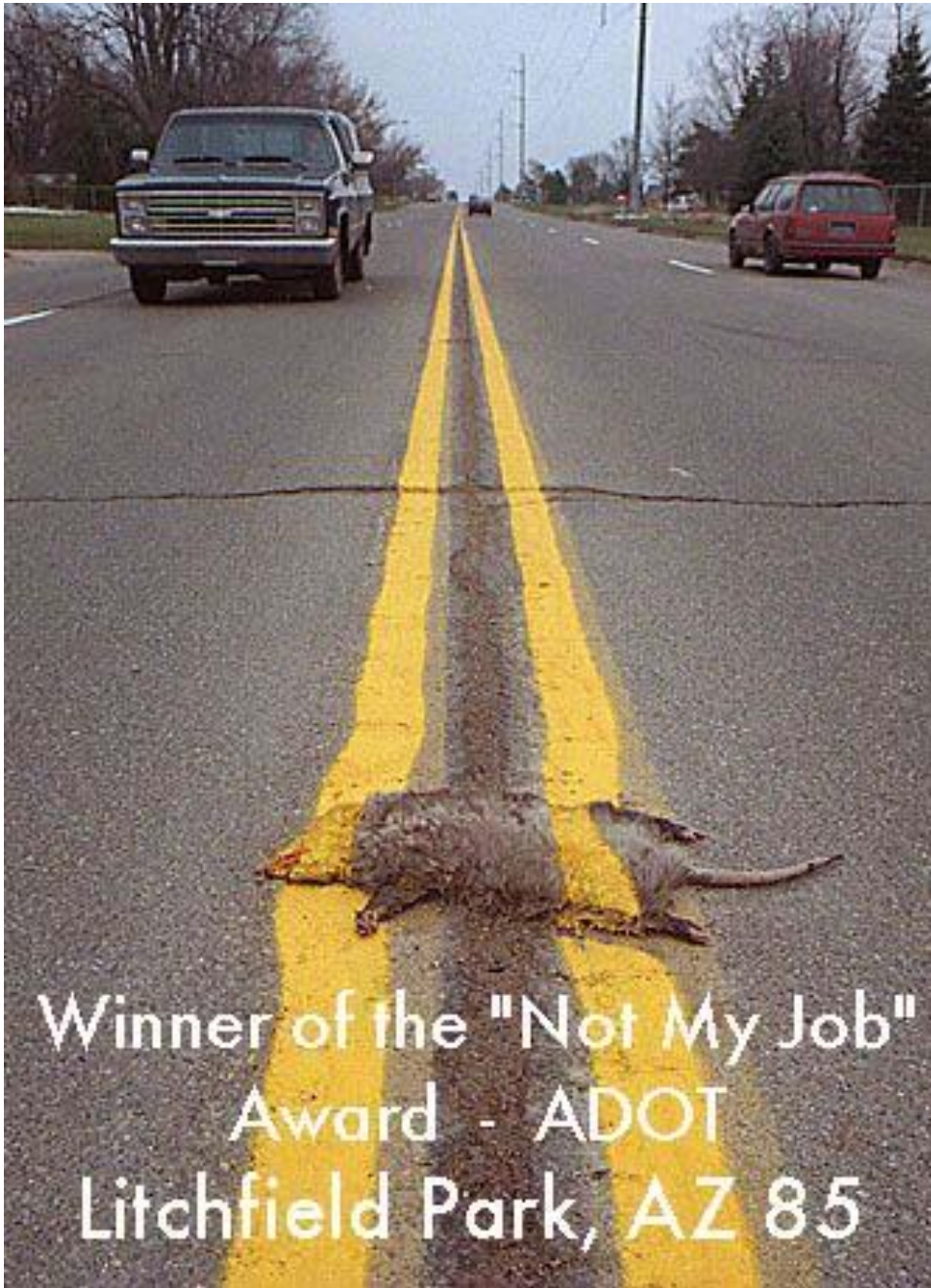


Summary

- **Now**
 - TIPS shows efficacy for BP & lipid reduction
- **In 1-2 years**
 - Effectiveness as a strategy for improving compliance and guideline adherence in primary & secondary prevention
- **In 3 – 6 years**
 - Effectiveness as a strategy for improving outcomes



**“To prevent a heart attack, take one as [redacted] every day.
Take it out for a jog, then take it to the gym,
then take it for a bike ride....”**



Prevention: Whose job?

- Health services
- Education
- Community organisations
- Local government
- Transport
- Food, tobacco, alcohol industries



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It's our Job!