

Macroeconomic Impact of Non-Communicable Chronic Diseases in the Americas: A Literature Review

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Non-communicable chronic diseases (NCD)

- Duration at least 3–6 months, can only be controlled, not cured
- Largest global cause of mortality in people of working age
- 35 million deaths in 2005, 80% in low and middle income countries (84% of world population)
 - cardiovascular disease (30% of total global mortality), cancers (13%), chronic respiratory disease (7%) , diabetes (2%)

NCD death rates higher in LAMICs

- 56% higher in men and 86% higher in women
- Disease develops at an earlier age
- Affects poor and disadvantaged populations
- Premature death and poor quality of life
- Accelerated change of pattern of disease

Causes of NCD well known

- Population aging
- Social, economic and cultural change; globalization, urbanization and policy environment (WHO, 2002)
- Global trade and marketing increase entrenchment
- Nutrition transition
 - replaces rich fruit and vegetables diet with diet of animal fat calories, lower in carbohydrates
- + low level of physical activity, tobacco and alcohol
⇒ population-wide global NCD (WHO, 2005).

NCDs are largely preventable

- Modifiable and preventable risk factors related to lifestyles:
 - tobacco use,
 - unhealthy diet,
 - physical inactivity
 - harmful use of alcohol

Macro and long-term economic impacts of health

- Nobel Prize winning historical studies by Fogel and Wimmer (1992) and Fogel (1994)
- 1/3 or 1/2 of English economic growth in 19th & 20th Centuries due to rises in nutrition and health
- Technophysio evolution (Fogel, 2002)
 - synergism between technological and physiological improvements has produced rapid, culturally transmitted biological but not genetic human evolution
- Shift from infectious to non-communicable chronic diseases is part of this evolution

Main channels of impact of health on economic growth

- Cognitive development
 - nutrition in utero and infancy
- Children's education
 - Worker productivity
- Savings and investment
- Demographic structure
 - itself has impacts on productivity and investment

Most long-term health improvement based on low cost health inputs resulting from innovations and their adoption (consensus?)

- More and cheaper nutrition
 - Sanitation
 - Vaccinations
- There are “neglected” diseases with low mortality burdens but substantial effects on productivity

Health policy for growth?

- Health progress in past two centuries mainly due technological impacts from outside the health sector
 - increased food quantity
 - knowledge of disease transmission
 - specific, effective public health
 - controlling malaria, yellow fever, and hookworm
 - investments in very young children
- Public medical care investment depends heavily on
 - health institution quality – tends to be low
 - institutions in general

Economic consequences of NCD and related risk factors

- Solow model calibration. Chronic disease income loss projected to rise as % of GDP

	Brazil	Canada	China	India	Nigeria
2005	0.92%	0.38%	1.08%	1.27%	1.11%
2015	3.21%	0.64%	3.94%	5.04%	3.07%

	Pakistan	Russia	UK	Tanzania
2005	0.84%	2.73%	1.11%	1.57%
2015	3.08%	12.35%	5.18%	4.19%

(Abegunde and Stanciole, 2006)

Are cardiovascular diseases bad for economic growth?

- Panel economic growth regression
- CVDs are bad for growth once countries have reached a fairly high level of per capita income
Suhrcke and Urban (2006)

Oxford Health Alliance Report on NCD

(Suhrcke et al., 2006)

- NCD not anymore ‘diseases of affluence’, nor problems of the elderly
- NCD has important economic consequences for individuals, households and for the economy
- There are severe research gaps, especially for developing countries
- Intervention justified from efficiency perspective
 - people act non-rationally, against own desires for future selves, imperfectly informed, affect others
- Not yet feasible to identify optimal interventions

Oxford Health Alliance Report on NCD

(Suhrcke et al., 2006)

- **Analyses**
 - Costs of NCD
 - Costly subsistence decisions
 - Effects on labor supply and labor productivity
 - Effect on education and human-capital accumulation
 - Macroeconomic consequences of chronic disease
 - Public capacity to deal with NCD

Globalization, diets and NCD (WHO, 2002)

- Sales and advertizing of tobacco, alcohol and food cause deficient “nutrition transition” and NCD
- Top ten food TNCs by sales in 1998 (US\$ billion)

	Sales	Profits	Chief Products	Employees
Philip Morris	56.11	6.31	Tobacco, cereals, beverages	152,000
Cargill	51.00	4.68	Cereals, seeds, oils, beverages	80, 600
Unilever	50.06	7.94	Oils, dairy, beverages, meals	287,000
Nestlé	49.96	4.11	Beverages, cereals, infant food	225,808
Pepsico	20.92	1.49	Beverages, snacks	142,000
Sara Lee	20.01	-0.53	Meat and bakery	139,000
Coca-Cola	18.87	4.13	Beverages, foods	29,500
McDonalds	11.41	1.64	Restaurants	267,000

Source: Chopra (2002).

Global TNC advertizing impacts NCD

- Food: \$11.0 billion US
- Restaurants: \$3.8 billion US
- Soft drinks: \$3.7 billion US
- Beer, wine and liquor: \$1.6 billion US

- Drug industry: \$9.4 billion US

- WHO's total budget: \$2.1 billion US

Perspectives in health and economic growth

- Striking: most health improvement based on cheap health inputs – innovation adoption
- Relevant to NCD because causes are known and prevention relatively inexpensive
- Why do the poor not access cheap health inputs?
- What can make health systems more responsive to needs?

Institutions

- One of the main ultimate causes of economic growth (Acemoglu, Johnson and Robinson, 2005)
- Market institutions – private goods
- What about public goods and transferes?
- Western method: democratic government levies taxes and spends them on government programs
- Property rights might defend undemocratic power of the rich in lagging countries
- Good institutions needed for *private and public* goods

Human Development Trap

- Incomplete markets for human capital investment generate stratified human development
- Trapped populations
 - fail to access inexpensive health inputs
 - have less political voice, so health systems are less responsive to them

Polarized globalization

- Innovation externalities under globalization create *disadvantage of backwardness*
 - development, semi-development, and stagnation are distinct dynamical attractors since the Great Divergence, stable under the current model of globalization
- Miracle growth
 - Denmark, Sweden, Italy, Japan, South Korea, Taiwan, Hong Kong, Singapore, Ireland, Germany (19th C), Western Germany, Cyprus, Iceland, Spain, Malta, Portugal, Israel
- ***Institutions must be strong enough to generate efficient markets, counter significant market failures and allow effective government action***

Proposal to generate global institutions: harmonize corporate taxes

- Governance is based on taxation
- Funding for education, health, infrastructure, institutions, science and innovation
- Removes subsidy for international at the expense of local production, raising efficiency of global economy
- Reduces competition for labor in advanced countries
- Transfers income from corporate profits to the poor, rewarding cheap labor with resources for development
- Groundwork in global cooperation in green energy, climate control, control of NCD risk factors, etc.

Advertizing and lobbying in the US (2007)

- Burden of NCD is 6.8% of GDP, \$939 billion
- Obtaining the favor of the industry's regulator, the US Congress, is inexpensive

Industry	Advertizing	Lobbying	Relative cost
Food	US \$10 billion (2007)	\$26 million (2009, highest ever)	0.26%
Pharmaceutical	US \$6.5 billion (2007)	\$225 million (2007)	3.5%

- US also needs global institutions

Research needed: NCD economic impact

- Databases for joint analyses of NCD risk factors, prevalence and treatment,
 - Intervention cost-effectiveness
 - Microeconomic links, longitudinal datasets
 - Macroeconomic linkages
- Assess and explain:
 - Within-country distribution of NCD by socioeconomic status
 - NCD responsibility in consumer good supply ,
 - Impact of work, transportation, pollution, stress
 - Institutional factors
 - Access to treatment
 - Impact economic growth, fiscal and policy impacts
 - Market and government failures

Action needed to combat NCD

- Chopra and Darnton-Hill (2004) compare the smoking and obesity epidemics
- Recommend legal action, health warnings, campaigns, academic vigilance, use of WTO rules that protect health
- The WHO Framework Convention on Tobacco Control (WHO FCTC)
 - first treaty negotiated under auspices of WHO, 2003
 - entered into force February 2005

Conclusions

- There will clearly be a macroeconomic and long-term impact of NCD
- Why wait for the damage? Action can be taken now
- Economic and epidemiologic research starting now
 - will be useful to evaluate and formulate policy and to establish TNC responsibility
 - should include institutional aspects
 - global institutional development is needed
 - to support local institutions
 - to control NCD risks