Desafios para a Saúde Global no Contexto de Ampliação das Desigualdades e dos Riscos Ambientais e Tecnológicos:

Reflexões sobre a (Pesquisa na) FIOCRUZ do Futuro

Mauricio L. Barreto

Rio de Janeiro – 6 de Setembro de 2017

"O mundo é um lugar perigoso e sempre será. ...devemos aprender a viver com isso. "

Agnes Heller, 2017

Algumas reflexões iniciais

- As condições Saúde como expressão dos processos históricos e dos contextos Políticos, Econômicos, Culturais, Sociais e Ambientais
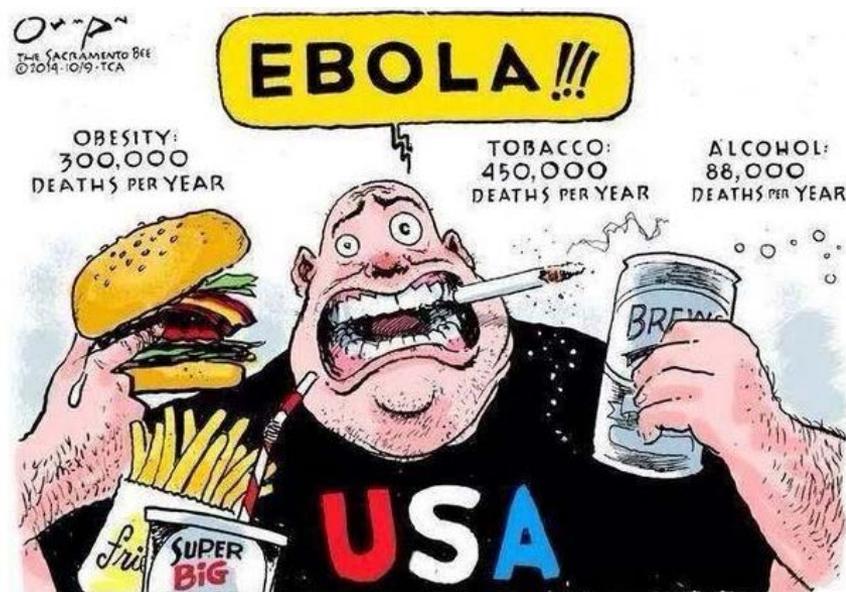
Algumas reflexões iniciais

Nosso entendimento dos problemas de saúde
mistura Conhecimentos Sólidos
com Incertezas, Ambiguidades e,
não infrequentemente, Ignorância

Figure 2. Formal definitions for risk, uncertainty, ambiguity and ignorance
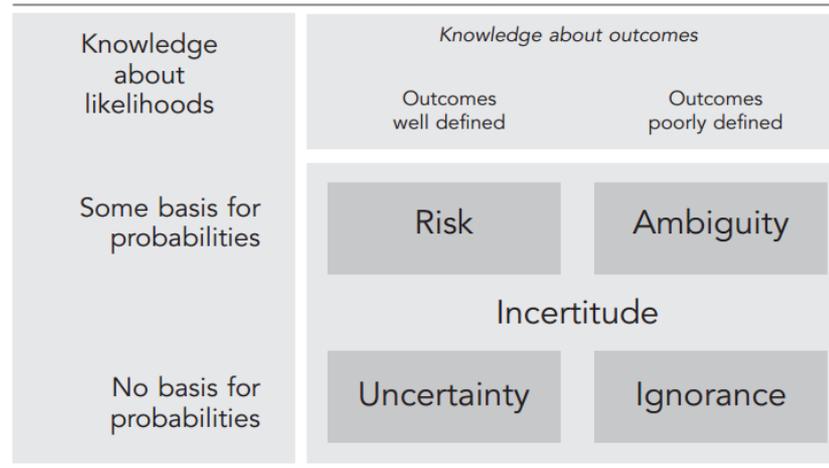
Algumas reflexões iniciais

- A forma de perceber e interpretar os problemas de saúde é socialmente construido, portanto variável. Alem disto, devido as incertezas e ambiguidades, pode estar sujeito a manipulações diversas.
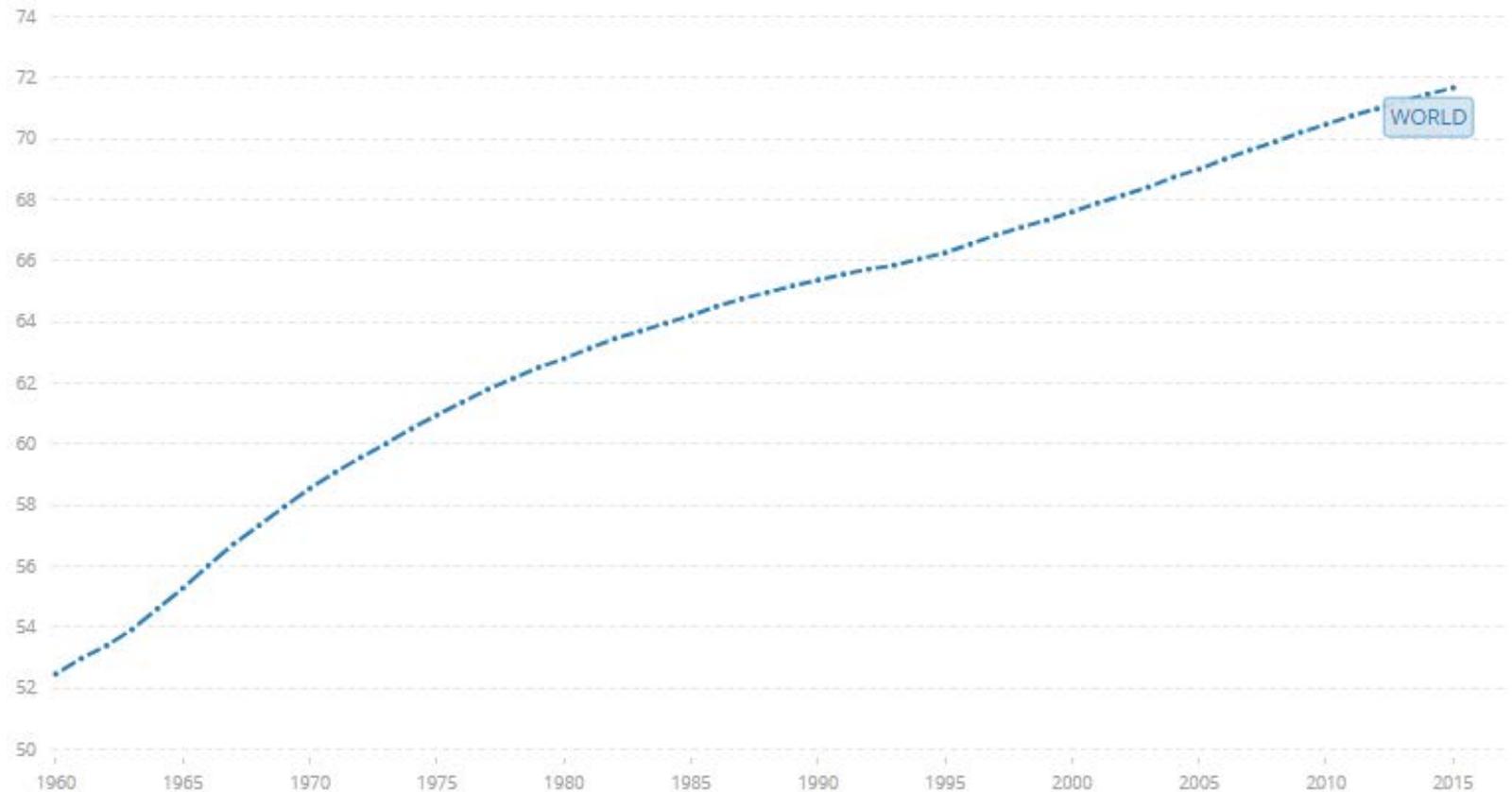
Algumas reflexões iniciais

- As desigualdades na saúde geram diferentes níveis de exposição aos fatores que determinam as chances de adoecimento e morte.

- Podem gerar ainda desiguais possibilidades de usufruir dos avanços científicos e tecnológicos e, muitas vezes, dos benefícios de politicas econômicas, sociais e ambientais que têm efeitos sobre a saúde.

Algumas reflexões iniciais

- Somente entendemos as condições de saúde e as desigualdades através de comparações, sincrôncas e diacrônicas entre sociedades diversas e de suas trajetórias no tempo.
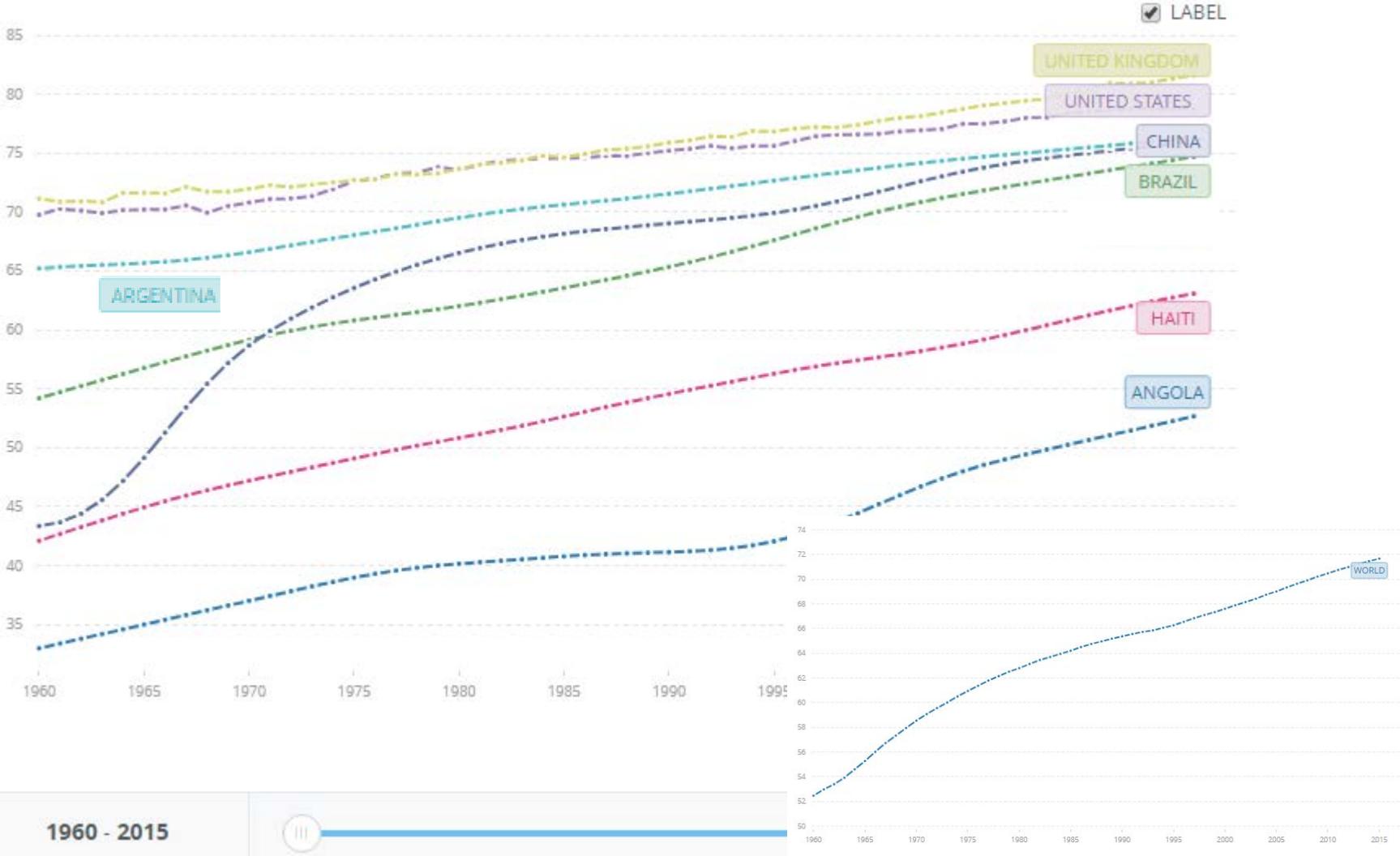
-

Expectativa de vida ao nascer (anos)
Global 1960-2015

Expectativa de vida ao nascer (anos)
1960-2015

Life Expectancy at Birth

Years

Color	Years
	+80
	+77,5
	+75
	+72,5
	+70
	+67,5
	+65
	+60
	+55
	+50
	+45
	+40
	- 40
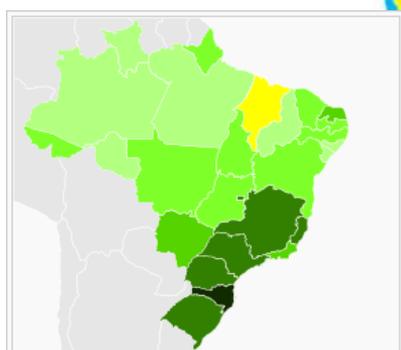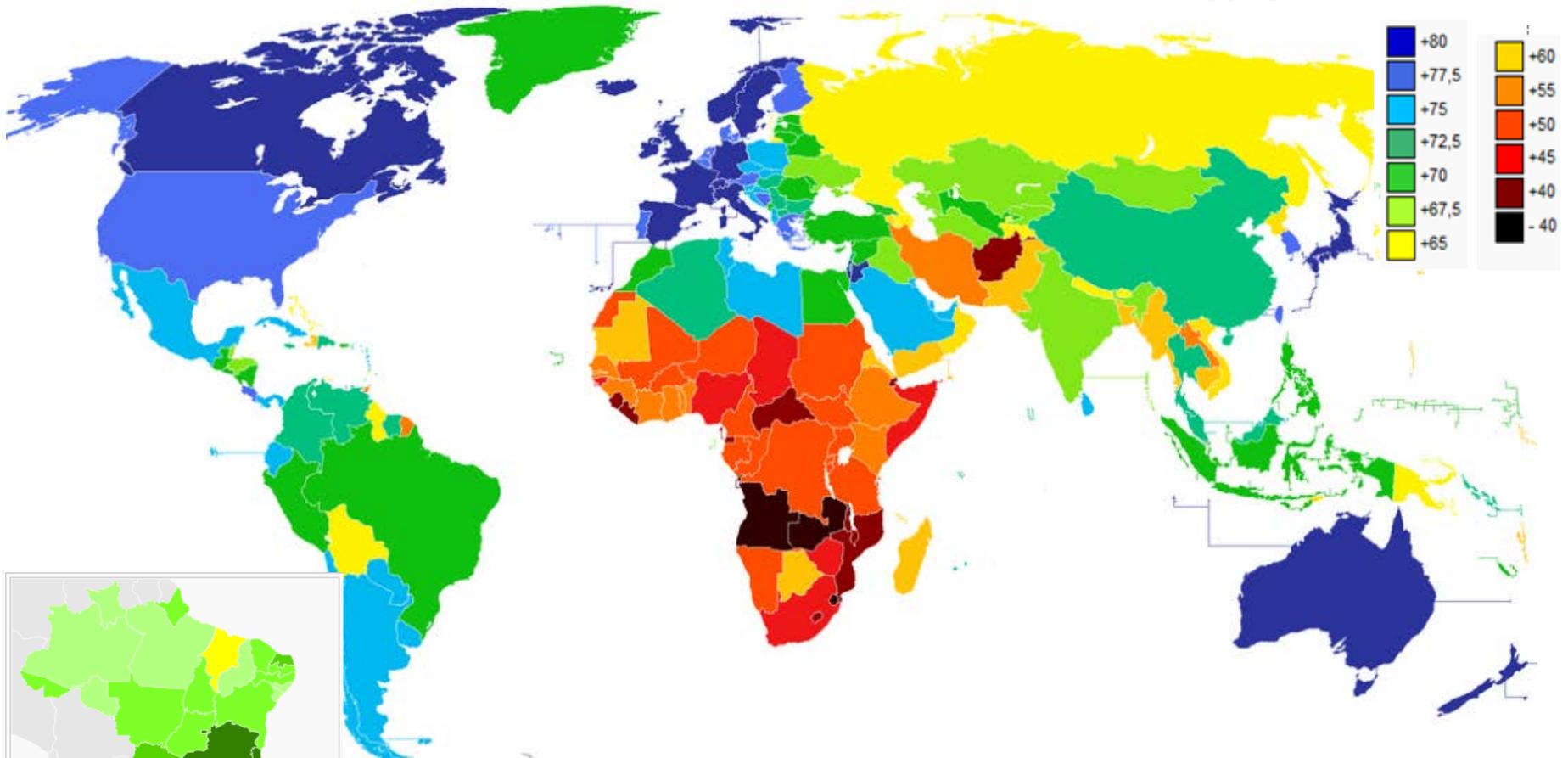
Mapa brasileiro da longevidade (2013).

Color	Years	Color	Years
	+78		+72
	+76		+70
	+74		+68

Algumas reflexões iniciais

- O que é responsável pelas mudanças das condições de saúde ao longo do tempo, as Tecnologias Médicas ou as Políticas Econômicas, Sociais e Ambientais?

Infant Mortality per Thousand Births

The data is interpolated from 1900 to 1924: it was collected every ten years in 1900, 1910 and 1920.
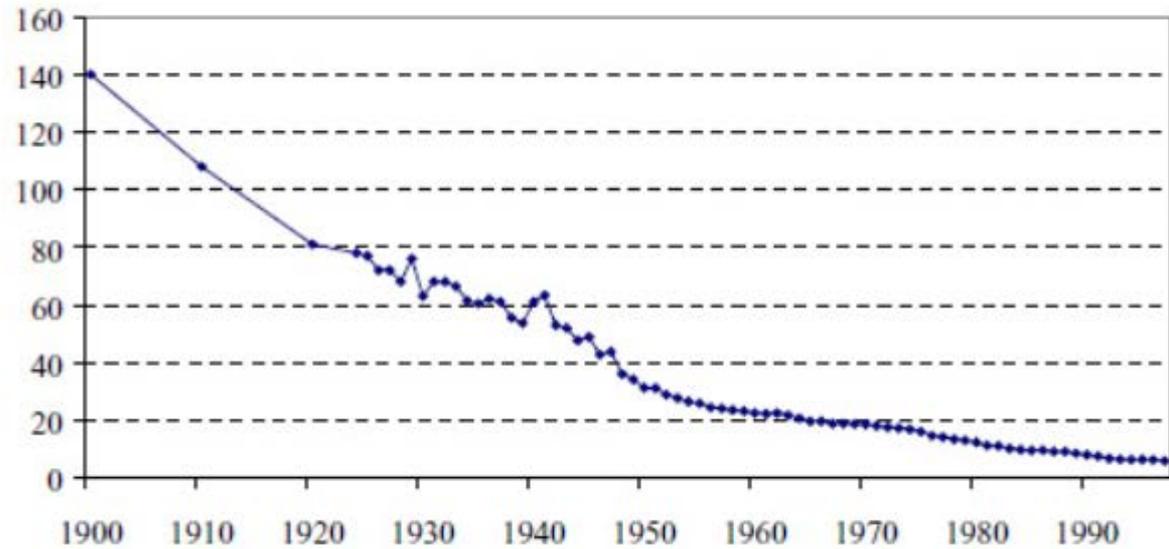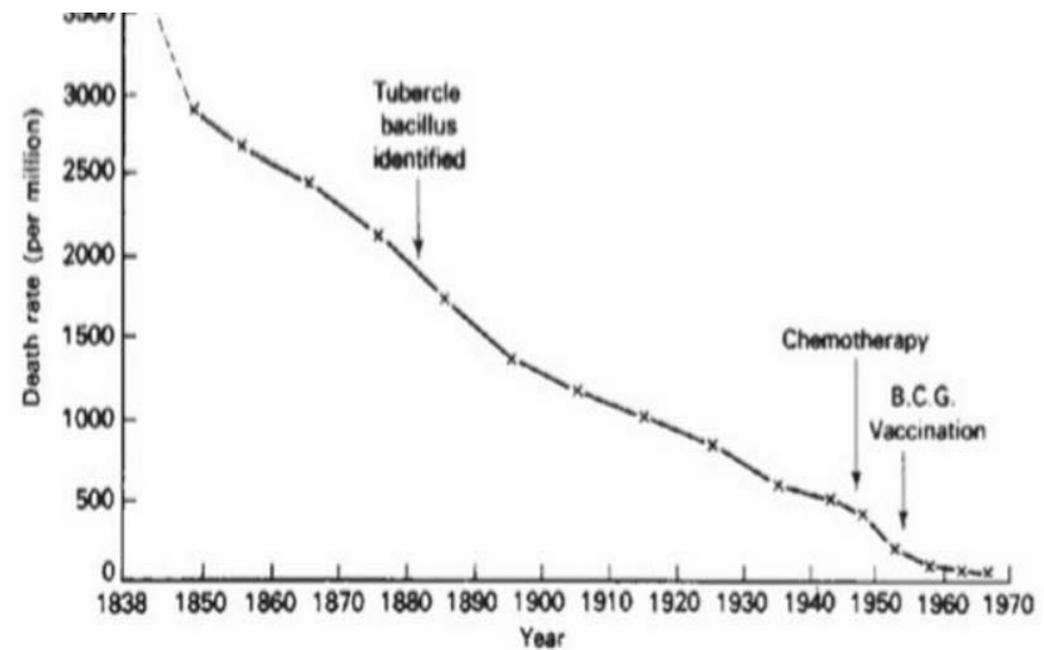From 1924 an annual record was taken.

Impact of the Family Health Program on Infant Mortality in Brazilian Municipalities

Rosana Aquino. MD. PhD. Nelson F. de Oliveira. PhD. and Mauricio L. Barreto. MD. PhD

Fixed-Effects Models for the Bivariate Association Between Infant Mortality Rate and Family Health Program Coverage: Brazil, 1996–2004

Variables	Infant Mortality Rate		Neonatal Mortality Rate, RR (95% CI)	Postneonatal Mortality Rate, RR (95% CI)
	Crude RR (95% CI)	Adjusted RR (95% CI)		
FHP coverage				
No FHP[a] (Ref)	1.00	1.00	1.00	1.00
Incipient FHP[b]	0.84 (0.82, 0.85)	0.87 (0.86, 0.89)	0.90 (0.89, 0.92)	0.82 (0.80, 0.84)
Intermediate FHP[c]	0.77 (0.75, 0.79)	0.84 (0.82, 0.86)	0.86 (0.84, 0.89)	0.78 (0.75, 0.81)
Consolidate FHP[d]	0.68 (0.64, 0.73)	0.78 (0.73, 0.83)	0.81 (0.76, 0.88)	0.69 (0.62, 0.76)
Total fertility rate ≤2.4 children per childbearing-age woman		0.90 (0.87, 0.93)	0.92 (0.88, 0.95)	0.88 (0.84, 0.92)
Per capita income ≥ BR $258.00		0.92 (0.89, 0.94)	0.93 (0.89, 0.96)	0.89 (0.85, 0.93)
Functional illiterates rate ≤26.0% of individuals aged ≥15 y		0.87 (0.84, 0.89)	0.89 (0.86, 0.92)	0.83 (0.79, 0.87)
Percentage of persons living in households with running water ≥96.0%		0.91 (0.89, 0.93)	0.93 (0.90, 0.95)	0.88 (0.85, 0.91)
Gini index[e] ≤0.55		1.18 (1.14, 1.22)	1.21 (1.16, 1.26)	1.10 (1.05, 1.16)
Local hospitalization		0.88 (0.82, 0.96)	0.88 (0.80, 0.96)	0.94 (0.84, 1.06)

RESEARCH ARTICLE

Association between expansion of primary healthcare and racial inequalities in mortality amenable to primary care in Brazil: A national longitudinal analysis

Thomas Hone[1]*, Davide Rasella[2,3], Mauricio L. Barreto[2,3], Azeem Majeed[1], Christopher Millett[1,4,5]

What did the researchers do and find?

- We examined trends in mortality from ambulatory-care-sensitive conditions for black/*pardo* (mixed race) and white Brazilians from 2000 to 2013, and evaluated whether there were changes in mortality associated with expansion of PHC in municipalities.

- PHC expansion was associated with reductions in mortality for both racial groups, but black/*pardo* Brazilians experienced a 2-fold greater reduction in mortality than white Brazilians.

- The targeted rollout of PHC in Brazil to poorer and smaller municipalities and the greater unmet needs of black/*pardo* Brazilians at the start of the rollout are likely to explain these findings.

Algumas reflexões iniciais

- A questão saúde no mundo contemporâneo está no epicentro dos debates políticos, e reflete lógicas políticas em confronto.

As condições de saúde - situação atual e tendências

- A Fome e a desnutrição
- As doenças infecciosas e suas epidemias
- A doenças crônicas e a "epidemia" de obesidade
- As diversas formas de violência
- As doenças mentais e as demências

A dinâmica demográfica e os efeitos na saúde

- Crescimento populacional – Malthusianismo desacreditado?

- Envelhecimento- Até quando podemos viver? E viver saudável?

- **Migrações – o capital e as mercadorias migram porque não os seres humanos?**

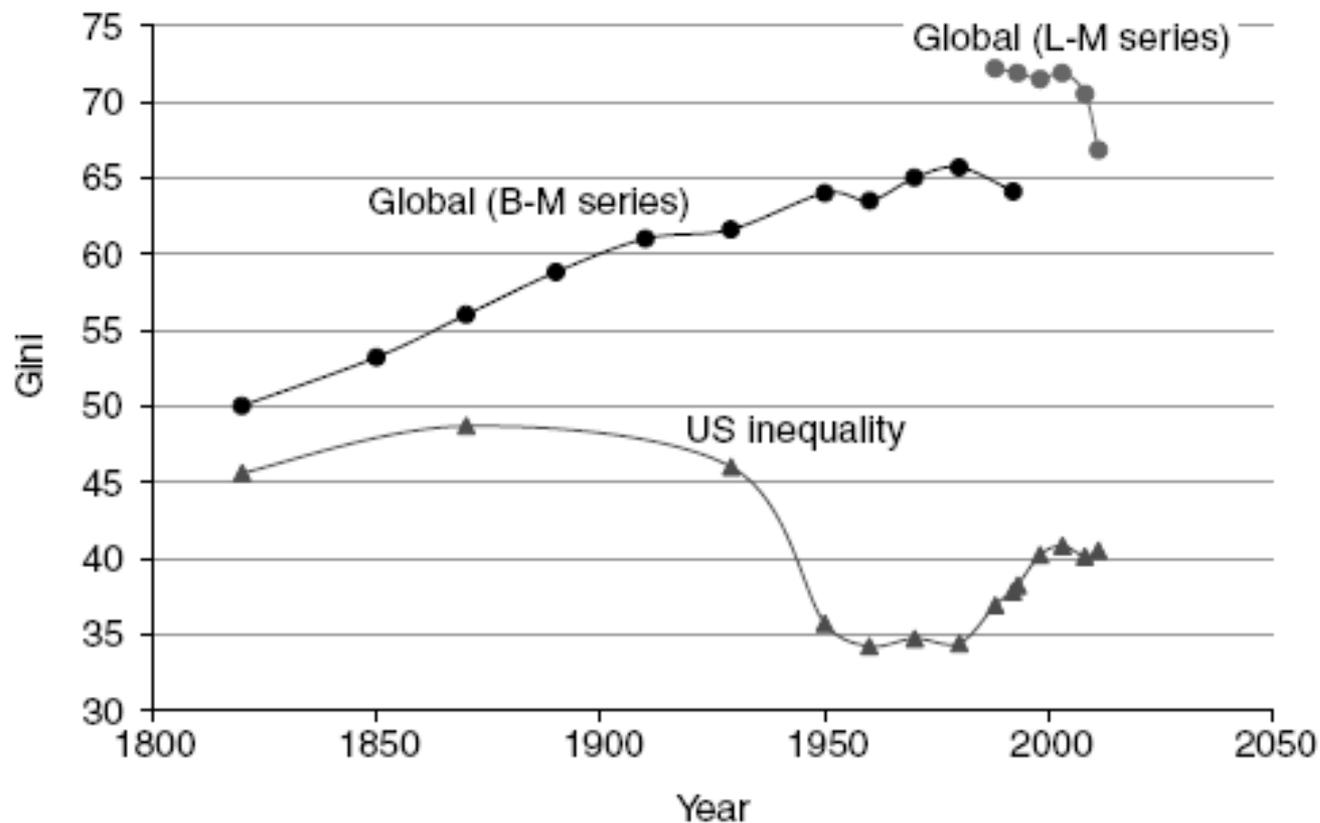- Urbanização – as cidades e a complexidade dos sistemas sociais

FIGURE 3.2. Global and US inequality, 1820–2011
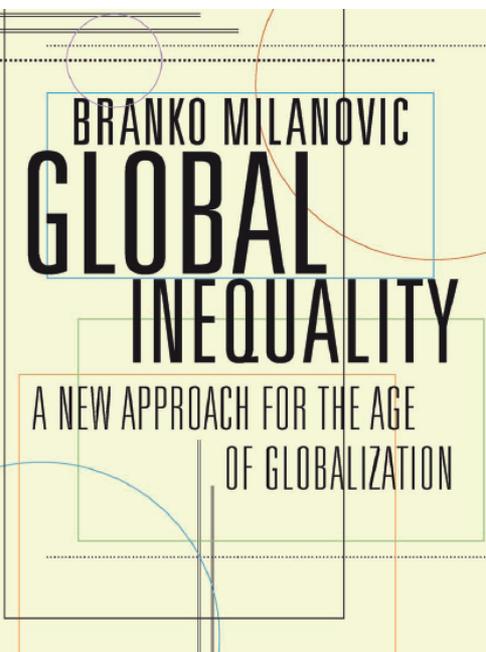
This graph shows global and US income inequalities (calculated across world and US citizens, respectively). We see that in the recent period, global inequality is decreasing while US inequality is going up. US inequality is, however, much lower than global inequality. Data sources: For US data, see sources listed for Figure 2.10; for global data, see sources listed for Figure 3.1.

FIGURE 3.5. Walls, fences, and minefields between countries

This map shows the places in the world where borders between one or several neighboring states are closely controlled or made difficult to cross by the erection of barriers (walls, minefields, or fences). These obstacles exist at the places where there are very large differences in mean incomes between neighboring states. See text for discussion of locations.
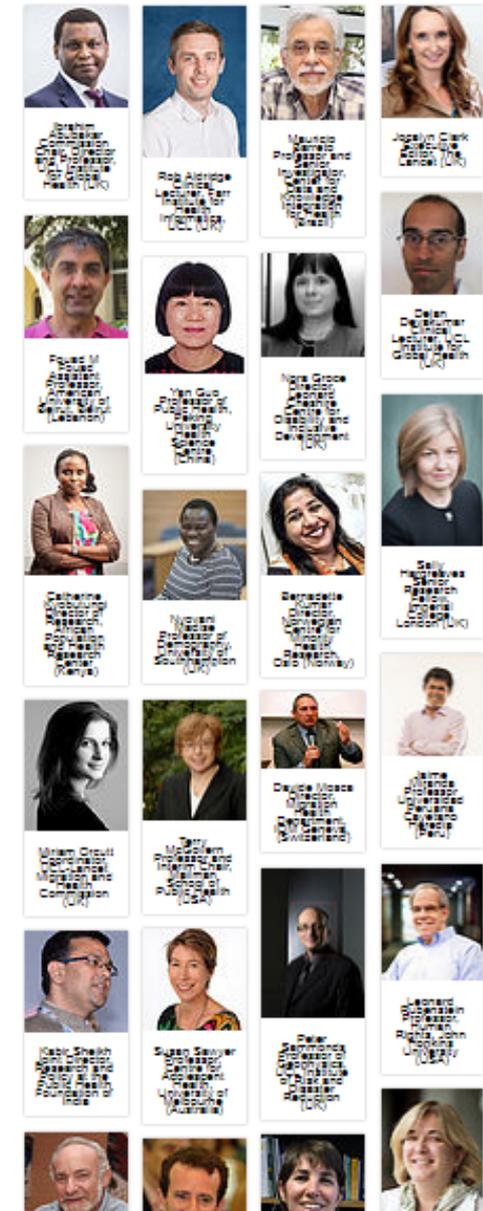
A dinâmica demográfica e os efeitos na saúde

- Crescimento populacional – Malthusianismo desacreditado?

- Envelhecimento- Até quando podemos viver? E viver saudável?

- Migrações – crescem em função dos aumentos das desigualdades entre os países

- **Urbanização – as cidades como sistemas complexos e rreflexo das desigualdades sociais e em saúde**

Urbanização

Urban population (as % of total population)

100%
65%
35%
10%
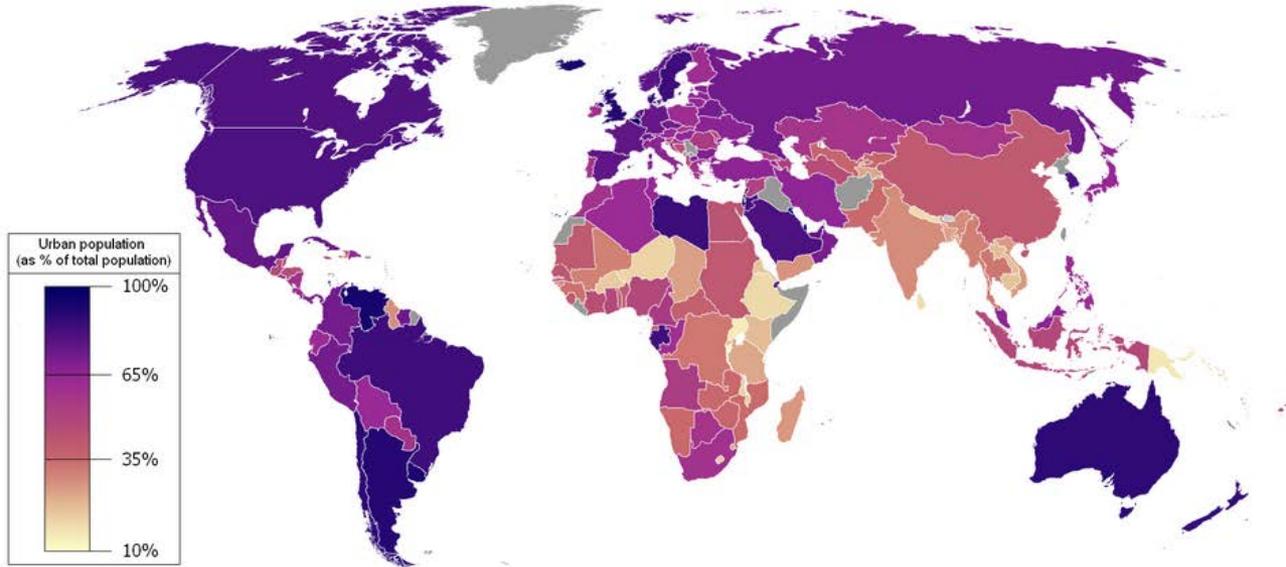
Source: UN Human Development Report 2007/2008

SALURBAL

FIGURE 2. Urban and rural population trends and projections in Latin America and the Caribbean, 1950–2030.

Urban — Rural

City with atleast 1,000,000 inhabitants in 2006
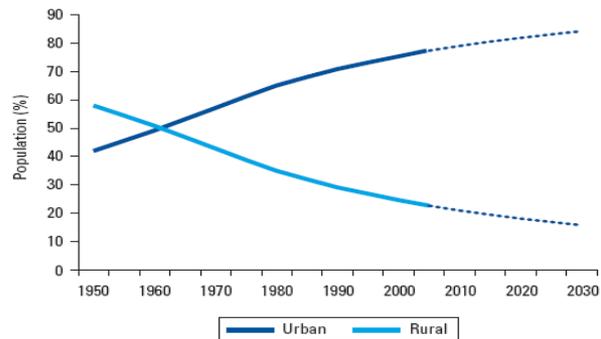
Source: United Nations Population Division. World Population Prospects: The 2006 Revision. New York. 2007.
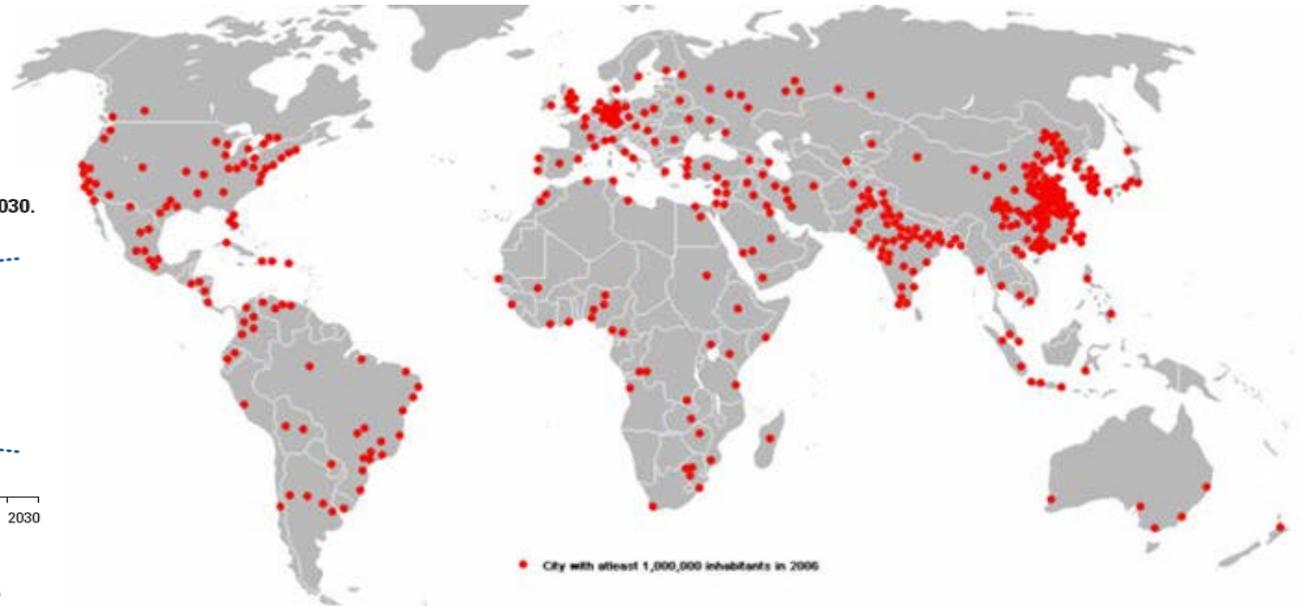
Os determinantes sociais da saúde

- O acesso as necessidades básicas (alimentação, saneamento, habitação, educação etc)

- As desigualdades sociais (do local ao global)

- As Políticas de Proteção Social e suas perspectivas no contexto do Neoliberalismo

Poverty

Share of population living on less than 2011 PPP $1.90 a day, 2013 (%)

- Less than 2.0
- 2.0–9.9
- 10.0–24.9
- 25.0–49.9
- 50.0 or higher
- No data

Caribbean Inset

Europe Inset

Mapa da Desigualdade
Coeficiente de GINI

Legenda (GINI Coefficient):

Cor	Valor
Verde escuro	<.25
Verde	.25-.29
Verde claro	.30-.34
Azul claro	.35-39
Azul	.40-.44
Roxo	.45-.49
Rosa	.50-.54
Laranja	.55-.59
Vermelho	>.60
Cinza	No Data

GINI Coefficient

Source: CIA – The World Factbook 2009

Foto: Teca Viera/Folha Imagem
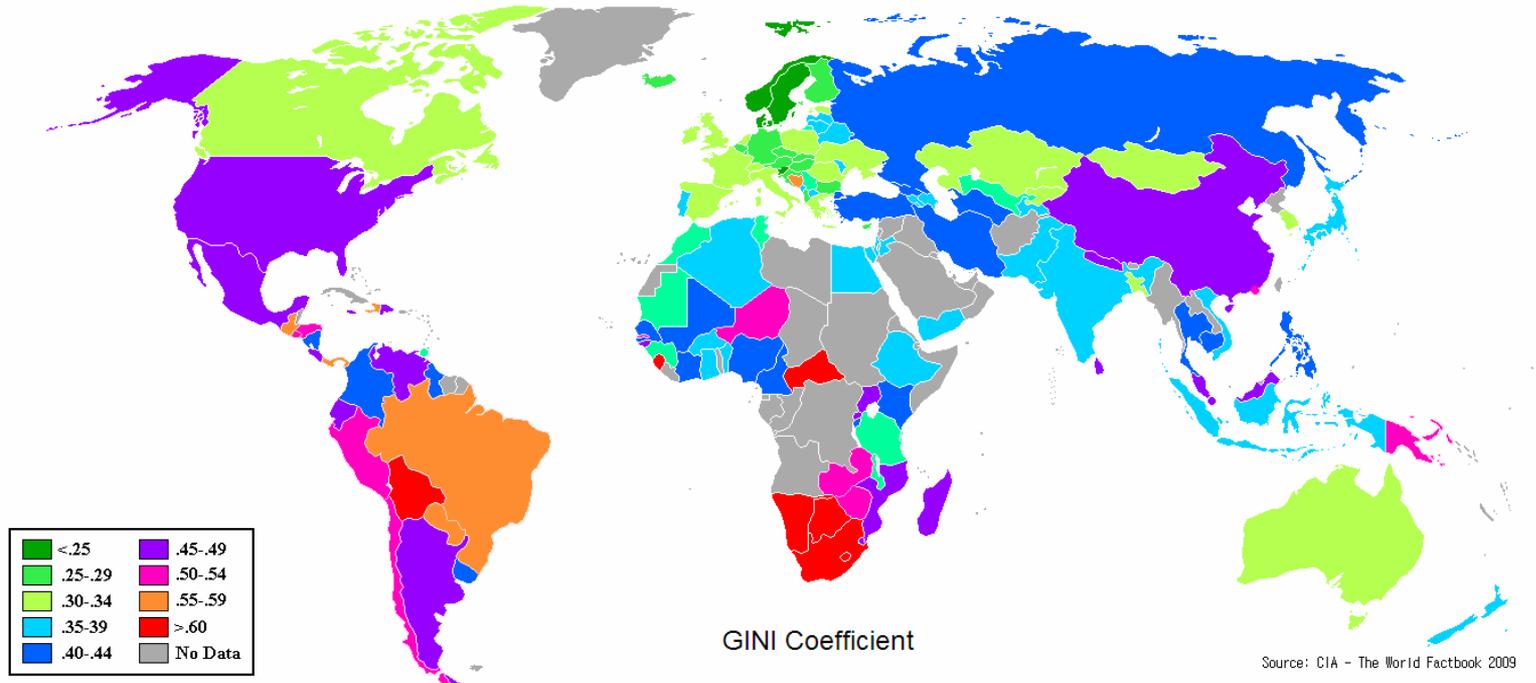
The Gini index is a measure of statistical dispersion and is used as a measure of inequality of wealth (eg. income) distribution. It varies from 0 to 1, where a value of 0 corresponds to perfect equality and a value of 1 corresponds to perfect inequality
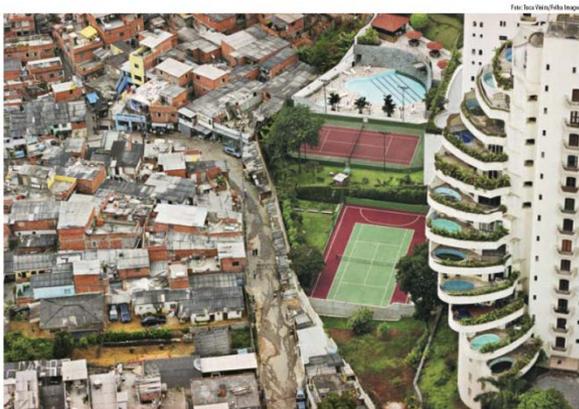
Closing the gap in a generation

Health equity through action on the social determinants of health

This Report is a new international mandate to reinforce research and actions on social determinants of health by public health researchers and professionals

World Conference on Social Determinants of Health

Landmark conference ends with adoption of Rio Political Declaration

WHO convened a global conference on 19-21 October 2011 in Rio de Janeiro, Brazil, to build support for the implementation of action on social determinants of health. The conference brought together over 1000 participants representing 125 Member States and a diverse group of stakeholders. The event was attended among others by Michel Temer, Vice President of Brazil and Dr Margaret Chan, WHO Director-General. On 21 October, 2011 participating Member States adopted the Rio Political Declaration on Social Determinants of Health.

The Rio Political Declaration on Social Determinants of Health

As Politicas de Proteção Sociais e a Saúde

Programas de transferência condicional de renda

➡ PTCR fornecem uma renda para famílias pobres com a condição que cumpram algumas condicionalidades, geralmente relacionadas com a saúde e a educação dos filhos.

Implantação dos PTCR no mundo

1997
2008
2012

14

Effect of a conditional cash transfer programme on childhood mortality: a nationwide analysis of Brazilian municipalities

Davide Rasella, Rosana Aquino, Carlos A T Santos, Rômulo Paes-Sousa, Maurício L Barreto

Summary

Background In the past 15 years, Brazil has undergone notable social and public health changes, including a large reduction in child mortality. The *Bolsa Família* Programme (BFP) is a widespread conditional cash transfer programme, launched in 2003, which transfers cash to poor households (maximum income US$70 per person a month) when they comply with conditions related to health and education. Transfers range from $18 to $175 per month, depending on the income and composition of the family. We aimed to assess the effect of the BFP on deaths of children younger than 5 years (under-5), overall and resulting from specific causes associated with poverty: malnutrition, diarrhoea, and lower respiratory infections.

Methods The study had a mixed ecological design. It covered the period from 2004–09 and included 2853 (of 5565) municipalities with death and livebirth statistics of adequate quality. We used government sources to calculate all-cause under-5 mortality rates and under-5 mortality rates for selected causes. BFP coverage was classified as low (0·0–17·1%), intermediate (17·2–32·0%), high (>32·0%), or consolidated (>32·0% and target population coverage ≥100% for at least 4 years). We did multivariable regression analyses of panel data with fixed-effects negative binomial models, adjusted for relevant social and economic covariates, and for the effect of the largest primary health-care scheme in the country (Family Health Programme).

Findings Under-5 mortality rate, overall and resulting from poverty-related causes, decreased as BFP coverage increased. The rate ratios (RR) for the effect of the BFP on overall under-5 mortality rate were 0·94 (95% CI 0·92–0·96) for intermediate coverage, 0·88 (0·85–0·91) for high coverage, and 0·83 (0·79–0·88) for consolidated coverage. The effect of consolidated BFP coverage was highest on under-5 mortality resulting from malnutrition (RR 0·35; 95% CI 0·24–0·50) and diarrhoea (0·47; 0·37–0·61).

Interpretation A conditional cash transfer programme can greatly contribute to a decrease in childhood mortality overall, and in particular for deaths attributable to poverty-related causes such as malnutrition and diarrhoea, in a large middle-income country such as Brazil.

Funding National Institutes of Science and Technology Programme, Ministry of Science and Technology, and Council for Scientific and Technological Development Programme (CNPq), Brazil.

Social protection and tuberculosis control in 21 European countries, 1995–2012: a cross-national statistical modelling analysis

Aaron Reeves, Sanjay Basu, Martin McKee, David Stuckler, Andreas Sandgren, Jan Semenza

Summary

Background WHO stresses the need to act on the social determinants of tuberculosis. We tested whether alternative social protection programmes have affected tuberculosis case notifications, prevalence, and mortality, and case detection and treatment success rates in 21 European countries from 1995 to 2012.

Methods We obtained tuberculosis case notification data from the European Centre for Disease Prevention and Control's 2014 European Surveillance System database. We also obtained data for case detection, treatment success, prevalence, and mortality rates from WHO's 2014 tuberculosis database. We extracted data for 21 countries between Jan 1, 1995, and Dec 31, 2012. Social protection data were from EuroStat, 2014 edition. We used multivariate cross-national statistical models to quantify the association of differing types of social protection programmes with tuberculosis outcomes. All analyses were prespecified.

Findings After we controlled for economic output, public health spending, and country fixed effects, each US$100 increase in social protection spending was associated with a decrease per 100 000 population in the number of tuberculosis case notifications of –1·53% (95% CI –0·28 to –2·79; p=0·0191), estimated incidence rates of –1·70% (–0·30 to –3·11; p=0·0201), non-HIV-related tuberculosis mortality rate of –2·74% (–0·66 to –4·82; p=0·0125), and all-cause tuberculosis mortality rate of –3·08% (–0·73 to –5·43; p=0·0127). We noted no relation between increased social protection spending and tuberculosis prevalence (–1·50% [–3·10 to 0·10] per increase of $100; p=0·0639) or smear-positive tuberculosis case notification rates (–0·079% [–0·18 to 0·34] per increase of $100; p=0·5235) or case detection (–0·59% [–1·3 to 0·11] per increase of $100; p=0·1066). Old age pension expenditure seemed to have the strongest association with reduced tuberculosis case notification rates for those aged 65 years or older (–3·87% [–0·95 to –6·78]; p=0·0137).

Interpretation Investment in social protection programmes are likely to provide an effective component of tuberculosis prevention and treatment programmes, especially for vulnerable groups.

Welfare states and population health: The role of minimum income benefits for mortality

Kenneth Nelson [a,*], Johan Fritzell [b,c]

[a] Swedish Institute for Social Research, Stockholm University, Stockholm, Sweden
[b] Aging Research Centre, Karolinska Institutet/Stockholm University, Sweden
[c] Centre for Health Equity Studies, Stockholm University/Karolinska Institutet, Sweden

ARTICLE INFO

ABSTRACT

The causes of cross-national differences in population health are subject for intense discussion, often focusing on the role of structural economic factors. Although population health is widely believed to reflect the living conditions in society, surprisingly few comparative studies systematically assess policy impacts of anti-poverty programs. In this paper we estimate the influence of minimum income benefits on mortality using international data on benefit levels in 18 countries 1990–2009. Included are all major non-contributory benefits that low-income households may receive. Our analyses, based on fixed effects pooled time-series regression, show that minimum income benefits improve mortality, measured in terms of age-standardized death rates and life expectancy. The results on country-level links between minimum income benefits and mortality are remarkably robust in terms of measured confounding effects.

As transformações ambientais e tecnológicas e os riscos persistentes e novos sobre a saúde

- **Os riscos do Local ao Global**

- Persistem Riscos reconhecidos – o caso do fumo

- Os Riscos entram pela boca - A industrialização e os alimentos superprocessados

- A revolução tecnológica e a emergência de novos riscos
  - O que cura mata - efeitos adversos de medicamentos e tecnologias médicas
  - A intensificação da resistência antimicrobiana
  - As mudanças climáticas e as incertezas do futuro

Respostas

- Respostas locais/nacionais/Internacionais

- Respostas das agências internacionais (MDGs, SDGs, International Health Regulations-IHR, The United Nations Framework Convention on Climate Change, WHO Framework Convention on Tobacco Control, Global action plan on antimicrobial resistance, Global Plan of Action on Social Determinants of Health etc)

# The Lancet–University of Oslo Commission on Global Governance for Health

The political origins of health inequity: prospects for change

Ole Petter Ottersen, Jashodhara Dasgupta, Chantal Blouin, Paulo Buss, Virasakdi Chongsuvivatwong, Julio Frenk, Sakiko Fukuda-Parr, Bience P Gawanas, Rita Giacaman, John Gyapong, Jennifer Leaning, Michael Marmot, Desmond McNeill, Gertrude I Mongella, Nkosana Moyo, Sigrun Møgedal, Ayanda Ntsaluba, Gorik Ooms, Espen Bjertness, Ann Louise Lie, Suerie Moon, Sidsel Roalkvam, Kristin I Sandberg, Inger B Scheel

Key messages

- The unacceptable health inequities within and between countries cannot be addressed within the health sector, by technical measures, or at the national level alone, but require global political solutions
- Norms, policies, and practices that arise from transnational interaction should be understood as political determinants of health that cause and maintain health inequities
- Power asymmetry and global social norms limit the range of choice and constrain action on health inequity; these limitations are reinforced by systemic global governance dysfunctions and require vigilance across all policy arenas
- There should be independent monitoring of progress made in redressing health inequities, and in countering the global political forces that are detrimental to health
- State and non-state stakeholders across global policy arenas must be better connected for transparent policy dialogue in decision-making processes that affect health
- Global governance for health must be rooted in commitments to global solidarity and shared responsibility; sustainable and healthy development for all requires a global economic and political system that serves a global community of healthy people on a healthy planet

90-10 Gap: Only 10% of worldwide expenditure on health research and development is devoted to the problems that primarily affect the poorest 90% of the world's population (Global Forum for Health Research)
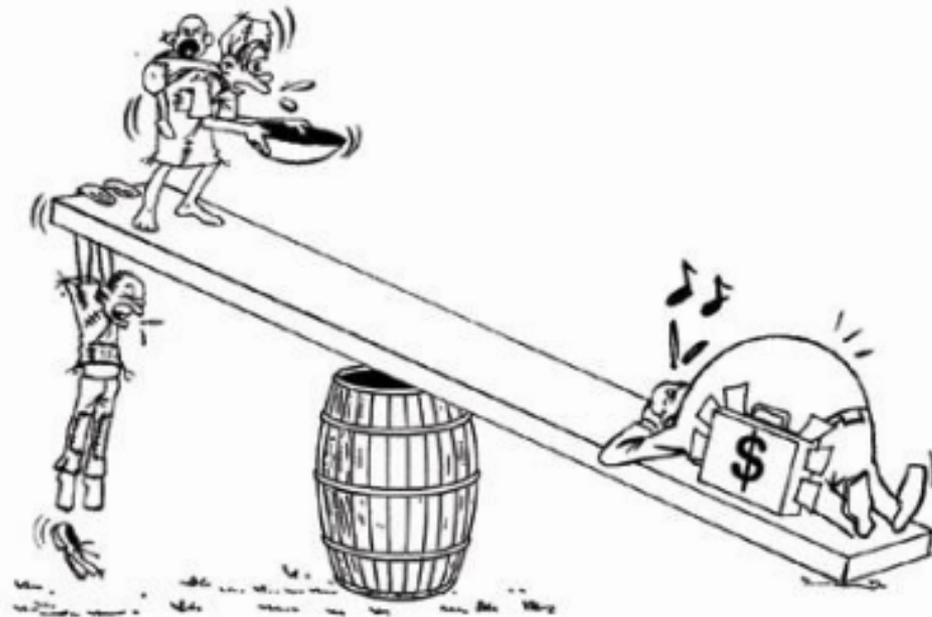
Picture From: *Changing Minds: A Guide to Facilitated Participatory Planning* by *Cole P. Dodge and Gavin Bennet*

2004 global disability-adjusted life years (DALYs) and 2005 research articles categorized by 19 broad WHO disease and disability categories.
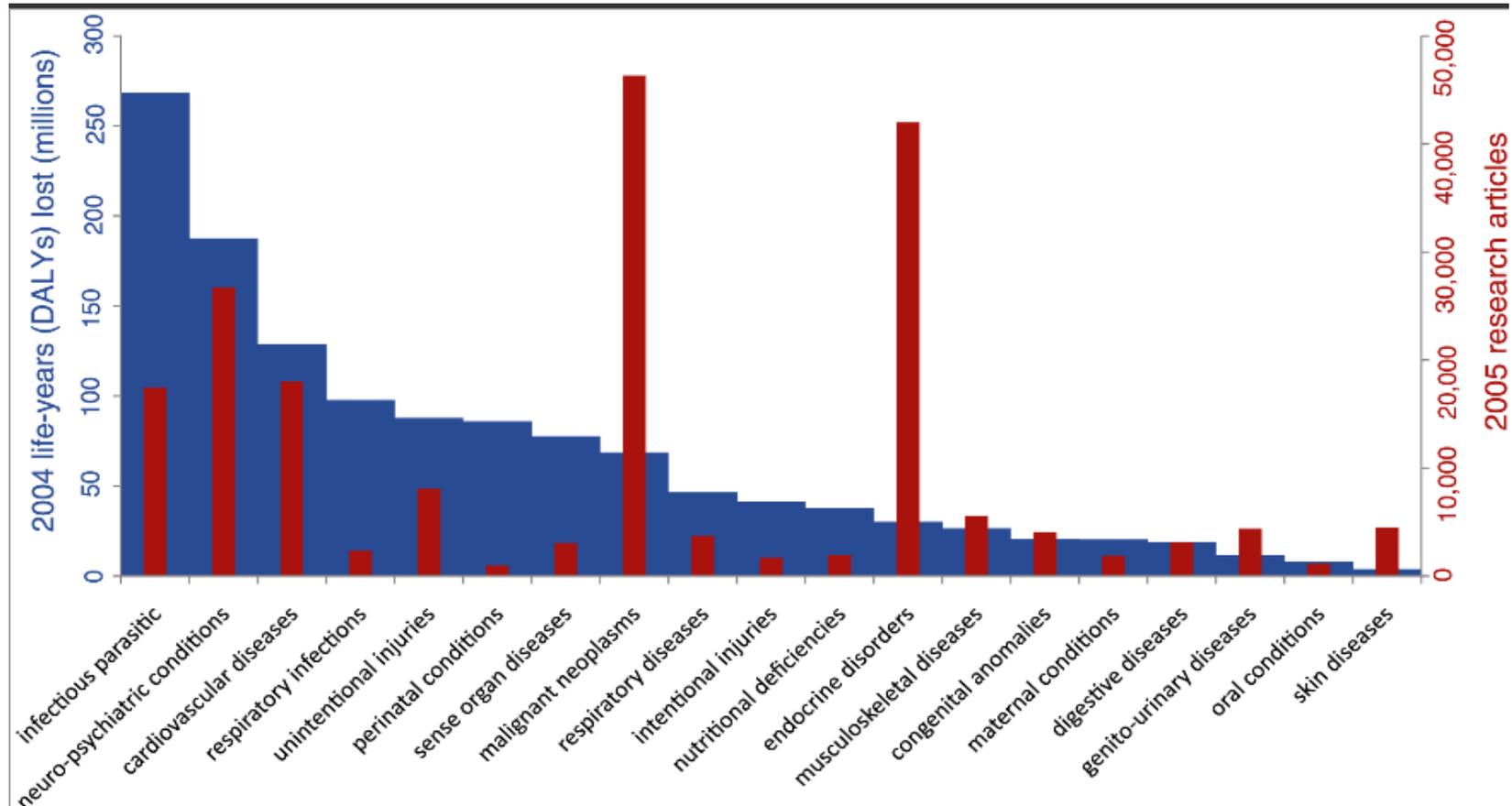
Our analysis demonstrates that the production of health research in the world correlates with the market for treatment and not the burden of disease.

Produção do Conhecimento Científico em Ciências da Saúde: Muitos desafios

1- A necessidade de produção continuada de evidências

2- Reducionismo dominante

3- Dificuldades na **Integração dos dados e conhecimentos, produzidos por diferentes disciplinas e sub-disciplinas**

4- **Dificuldade de integração dos diferentes níveis de conhecimento: básica, pré-clinica, clínica e populacional**

5- Pesquisa com grande foco em "testar hipóteses" (hypothesis-driven research)?

Pontos a considerar em um Programa de Pesquisa em Saúde para o país

- **1- Aumentar a 'cultura científica" no processo de formação dos profissionais de saúde e da sociedade, em geral**

- **2- Fortalecer a capacidade nacional nas areas de regulação, normatização e avaliação de tecnologias e sistemas de saúde**

- **3- Ampliar o conhecimento sobre os problemas nacionais de saúde, suas causas e seus determinantes**

Pontos a considerar em um Programa de Pesquisa em Saúde para país

- **4- Aportar conhecimentos e tecnologias necessários para o complexo processo de construção e consolidação do SUS, em especial, buscando torna-lo resistente às invetidas neo-liberais**

- **5- Pesquisa em Atenção Primária à Saúde**

- **6- Problemas de relevância nacional e tamb[em relevante em outros países em desenvolvimento – p. ex. Zika, Dengue, Chikunguhya, Leishmaniose etc**

Pontos a considerar em um Programa de Pesquisa em Saúde para país

- 7- "Nichos" aonde o Brasil, por razões especiais, possa vir a ter liderança no cenário internacional

- 8- Saúde Urbana

- 9 - Pesquisa fundada no uso de grandes bases de dados

CIDACS – Centro de Integração de Dados e Conhecimentos para Saúde

Medical Research Council

MRC

Leading science for better health

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RESEARCH

Strategy

Spotlights

Funded research

Initiatives

> Antimicrobial resistance

Clinical Research Capabilities and Technologies Initiative

Experimental medicine

Value of using data

A vast amount of data is generated by clinical, population, cellular and molecular studies. Interrogating data within clinical trials, cohort studies, imaging, genetic and other 'omic' studies, together with patient records and other routine data such as education and environmental data, offers great potential for gaining new insights into health and diseases.

Analysing and linking health related data enables research on a scale, speed and costs that is not possible using alternative methods. B population datasets include development of mo identification of public health risks, insights into health services.

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Centro de Integração de Dados e Conhecimentos para Saúde

INSTITUTO GONÇALO MONIZ
FIOCRUZ BAHIA

Fundamentos de uma FIOCRUZ do Futuro

- Fiocruz Local e Global

- Fiocruz com grande capacidade de se antecipar aos problemas

- Fiocruz que adote uma perspectiva transversalista de C&T

- Fiocruz Inter e Transdisciplinar

Fundamentos de uma FIOCRUZ do Futuro

- Fiocruz comprometida com pesquisa socialmente responsável pela (1) sua natureza coletiva e cooperativa e (2) sua ênfase nos propósitos da ação.

- Fiocruz Conectado em Redes

- Fiocruz com grande capacidade de produzir alternativas, novas abordagens e inovações

- Fiocruz Transparente e Avaliada de Acordo com a sua Missão

Sistema Único de Saúde – SUS

- Propõe SS universal, equânime e integral

- Necessidade e relevância da CT&I em saúde – Confer Nac. de C&T em saúde

- Instiga imensos desafios, científicos, políticos e de engenharia social

Obrigado!

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