

## Health Investments and Economic Growth: Implications for Policy

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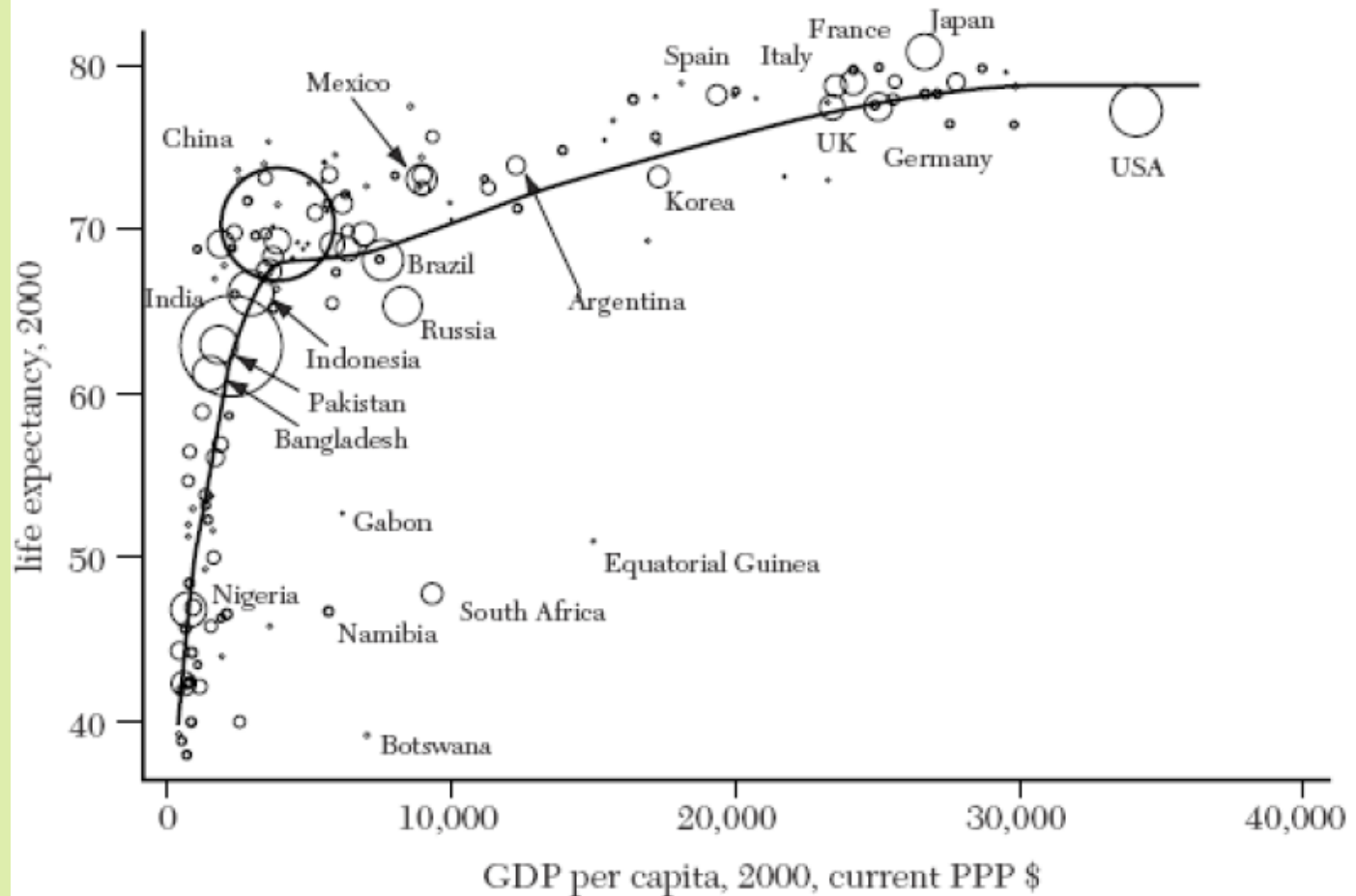
# Outline

- I. What is the Commission on Growth and Development?
- II. Overview of health and income trends
- III. Evidence on the link between health and growth
- IV. Ways that health can enhance growth:
- V. Health spending isn't enough: role of institutions and good governance
- VI. Conclusions

# Commission on Growth and Development

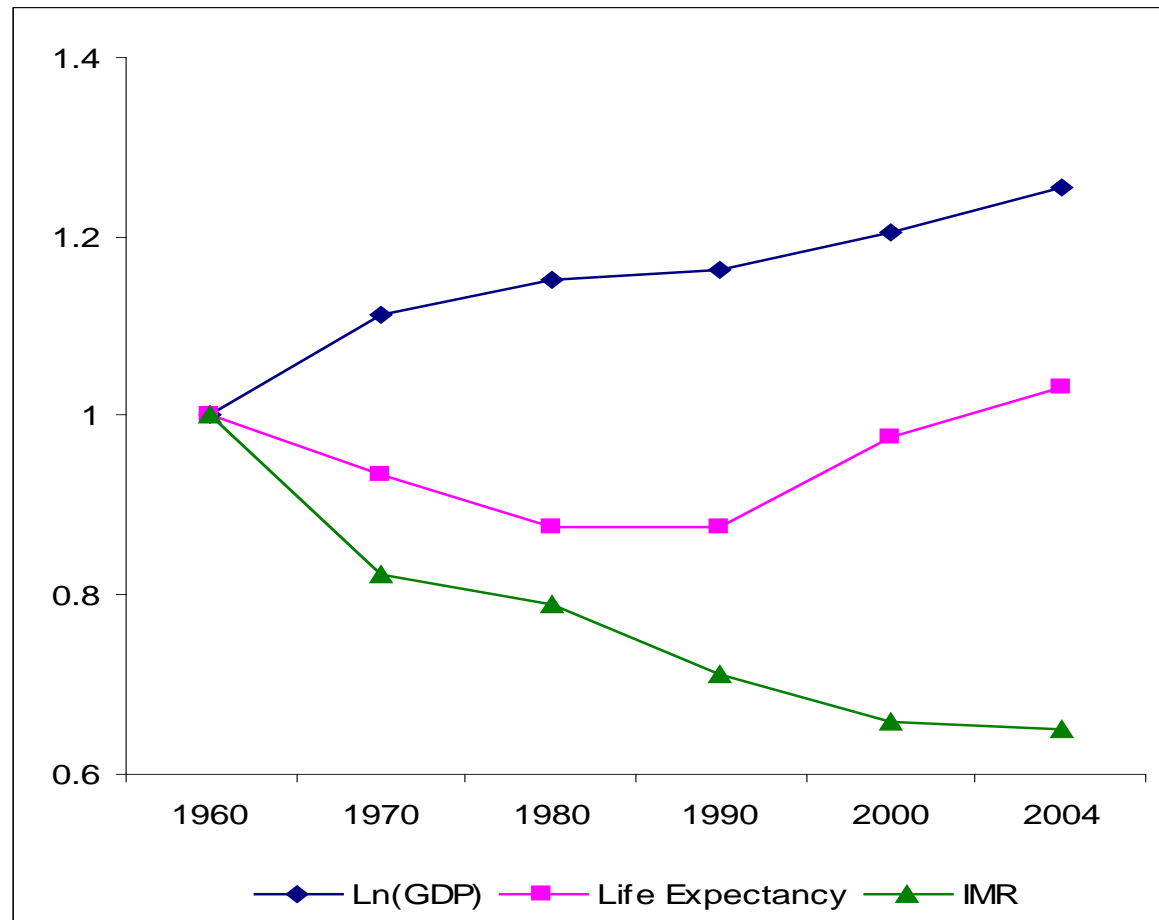
- World Bank initiated and hosted the Commission on Growth and Development
- Chaired by Michael Spence with 22 members
- Commission members are ex-heads of state, ministers of finance and leading academics
- Objective was to understand the policy imperatives of economic growth based on experience and evidence
- Financed by donors and the World Bank
- Health and Growth is one of the sectoral and special issue studies conducted by the Commission

# I. Population Health and Income



Source: Deaton 2006.

# Standard Deviations of GDP & Mortality



Source: Deaton 2006.

# How Did We Get So Healthy? Some Historical Evidence

- **England and Wales since 1750**
  - nutrition important
  - public health somewhat effective
  - medical care insignificant
- **Fogel (1986)**
  - nutritional improvements contributed 40% to reductions in mortality since 1700 in Europe and North America
- **Infant Mortality Rate reductions in New York City 1900-1930**
  - caused by rising standards of living, higher education and lower fertility rates
- **Latin America: disease control facilitated trade across the Americas**

## II. Evidence on the Relationship Between Health and Growth

- **Cross-country evidence**
  - If better health causes income rises, then there may be big benefits from investing in health along with other things that spur growth
- **The research in this area is challenging**
  - Measuring the effects of health on income is complicated by the fact that income also affects health
  - We need to calculate the effects of health on growth using:
    - (1) a measurable and comparable indicator so that we can capture the actual relationship between the two and
    - (2) the measure can be applied in other countries to allow cross-country comparisons

# Measuring Health Is Challenging

- Health measures are either too vague or too specific --cross country comparisons need comparable data
- Mortality a poor measure because it only happens once
- Infant mortality determined mostly by income, education and water
- Morbidity (illness) non-standardized and highly variable across individuals
- Health self assessment unreliable and too subjective
- Most cross country comparisons are usually for single disease

# Cross-Country Evidence Is Ambiguous

- WHO's Commission on Macroeconomics and Growth (2003) indicated a strong link between investments in health and economic growth
- Subsequent research by Sachs, Bloom, Canning and Sevilla, tried to fix the problems that led to ambiguous results from cross country studies
- Cross-country research has been unable to satisfactorily demonstrate causality between health and growth

# Good Evidence on How Health Investments Improve Health Status and Productivity

- **Global innovations**
  - **New drugs and vaccines**

Income and population increased in response to health changes
- **Disease-specific interventions**
  - **Phased malaria eradication campaigns**

Significant impact on education attendance, literacy, adult earnings
  - **Phased hookworm eradication in the southern US and Latin America**

Improved school enrollment, attendance, literacy

# Summary of Cross-Country Evidence

- Although cross-country analysis report large impacts of health on income, they are not sufficiently robust to inform policy
- Such evidence is not credible for economists
- Indeed in some instances effects can even be negative, but these are also not robust
- Bottom line, based on macroeconomic evidence:
  - Little consensus, impacts hotly debated
  - Vary widely with the kind of indicator used to measure health status differences

# III. Health and Growth Evidence at Country Level

- **Studies examine interventions that improve health status**
  - Medical care and treatment
  - Improved nutrition and early childhood development
  
- **Estimate impacts on outcomes**
  - Worker productivity, earnings, labor supply
  - Schooling and human capital
  - Investment effectiveness of health care institutions

# Nutrition and Worker Productivity

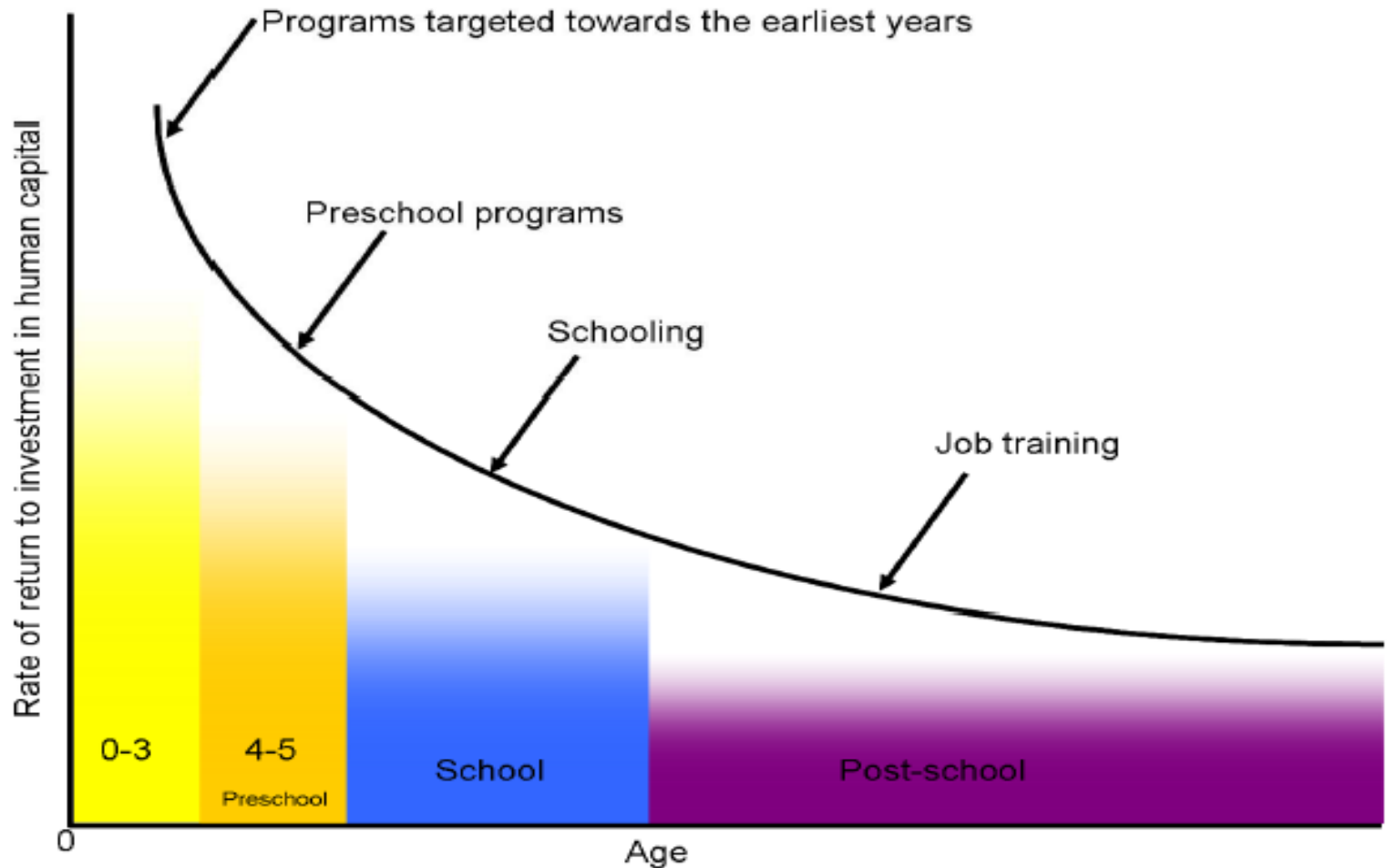
- Underlying biological mechanisms affect worker output and wages
- Randomized iron supplements have been shown to increase worker productivity
- Increased caloric intake has positive effects on productivity in low income settings
- Strong link between direct investments in health and nutrition, and greater productivity and enhanced output

- **Stunting**  
(indicator of long-term malnutrition)
  - Delays school entry, and reduces school enrollment, retention, and test scores
  - Physical growth lost in early years not regained subsequently; estimate 20% loss in adult income due to education deficits
- **Longitudinal study of randomized school feeding program in Guatemala**
  - Boosting nutritional value of student food intake led to positive effects on life time earnings
- **Taller men earn higher wages:**
  - early nutrition leads to higher lifetime earnings

# Early Childhood Development: Reaching Disadvantaged Populations

- New neurological research shows the importance of early investments that reduce adult morbidities (diabetes, cancer, mental health)
- Work by economists (Heckman and colleagues) suggest importance of early intervention to:
  - Build strong foundations for learning and non-cognitive skills
  - Prevent early damage (e.g., stunting)
  - Avoid loss of potential that cannot be recovered
- Longitudinal evidence for the US and Canada strong and convincing

# Early Childhood Development



Source: Heckman 2007.

## IV. Public Spending and Health Status: Does it Matter?

- Declines in infectious diseases in the US over 1900-1973 period preceded emergence of effective treatments so income, lifestyle, public health mattered
- In the OECD health spending significantly improves health status, controlling for “lifestyle” characteristics (cigarettes and alcohol consumption)
- Health care enhances *quality of life and well being* (measured by increases in activity and mobility – and raises productivity)

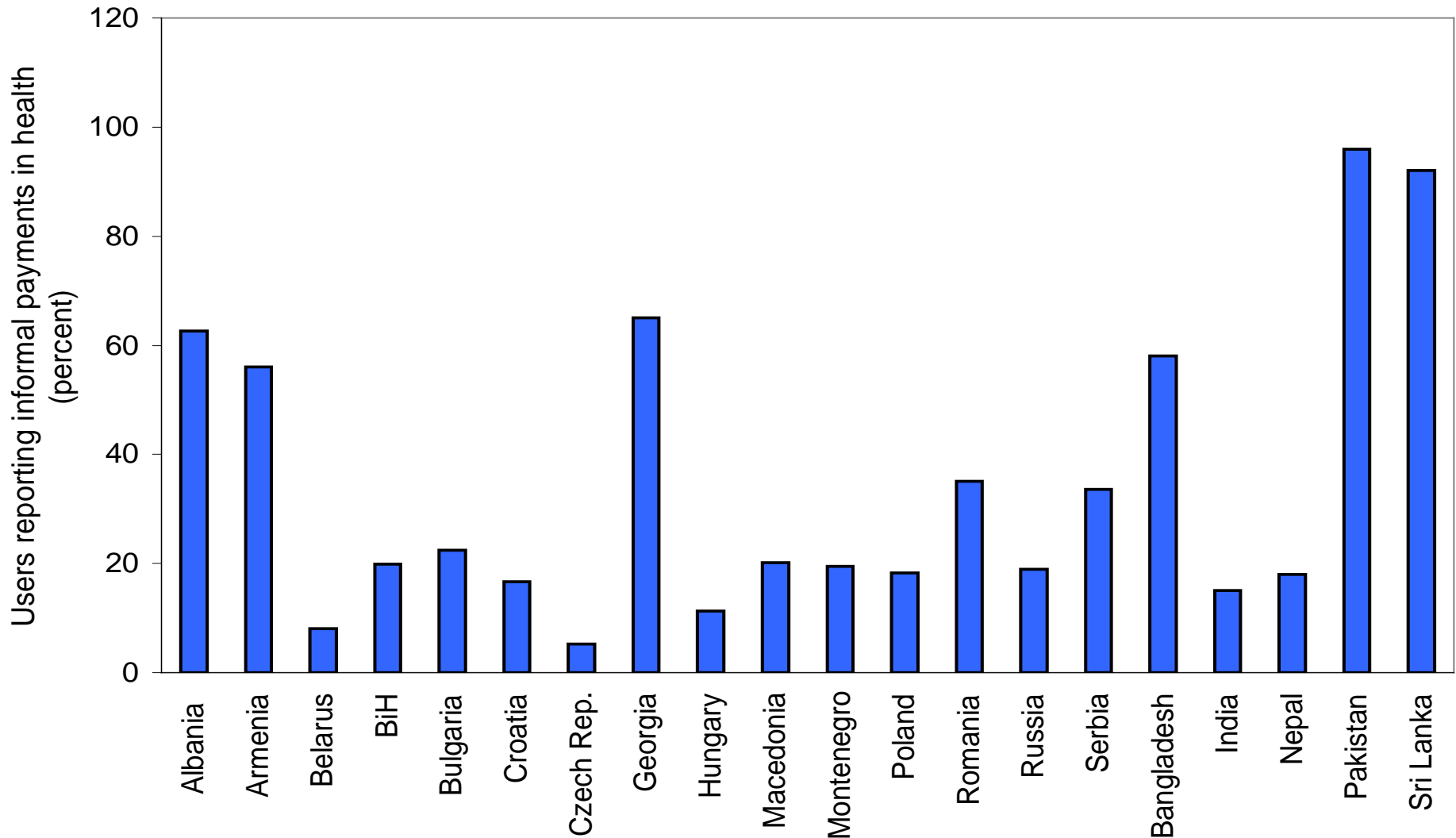
# Institutions Matter in Health Care Delivery

- Ample international evidence that spending alone on health care will not ensure a healthier population
- Public systems in many countries fall short due to poor governance
- Lack of incentives and accountability mechanisms
  - Spending based on inputs and public sector staffing
  - Performance of health system not considered
  - Incentives overlooked
  - Accountability difficult and not enforced

# Indicators of Poor Governance

- Under-the-table payments: undermine government incentives (e.g. DRGs)
- Counterfeit or substandard drugs:
  - WHO estimates that 25 % of drugs in low income countries are counterfeit or substandard.
  - The estimate for China is 30% (Hsiao year)
- Procurement abuses: collusion in bidding; raises cost and reduces quality

# Informal Payments in Health in ECA/South Asia, 2000-02



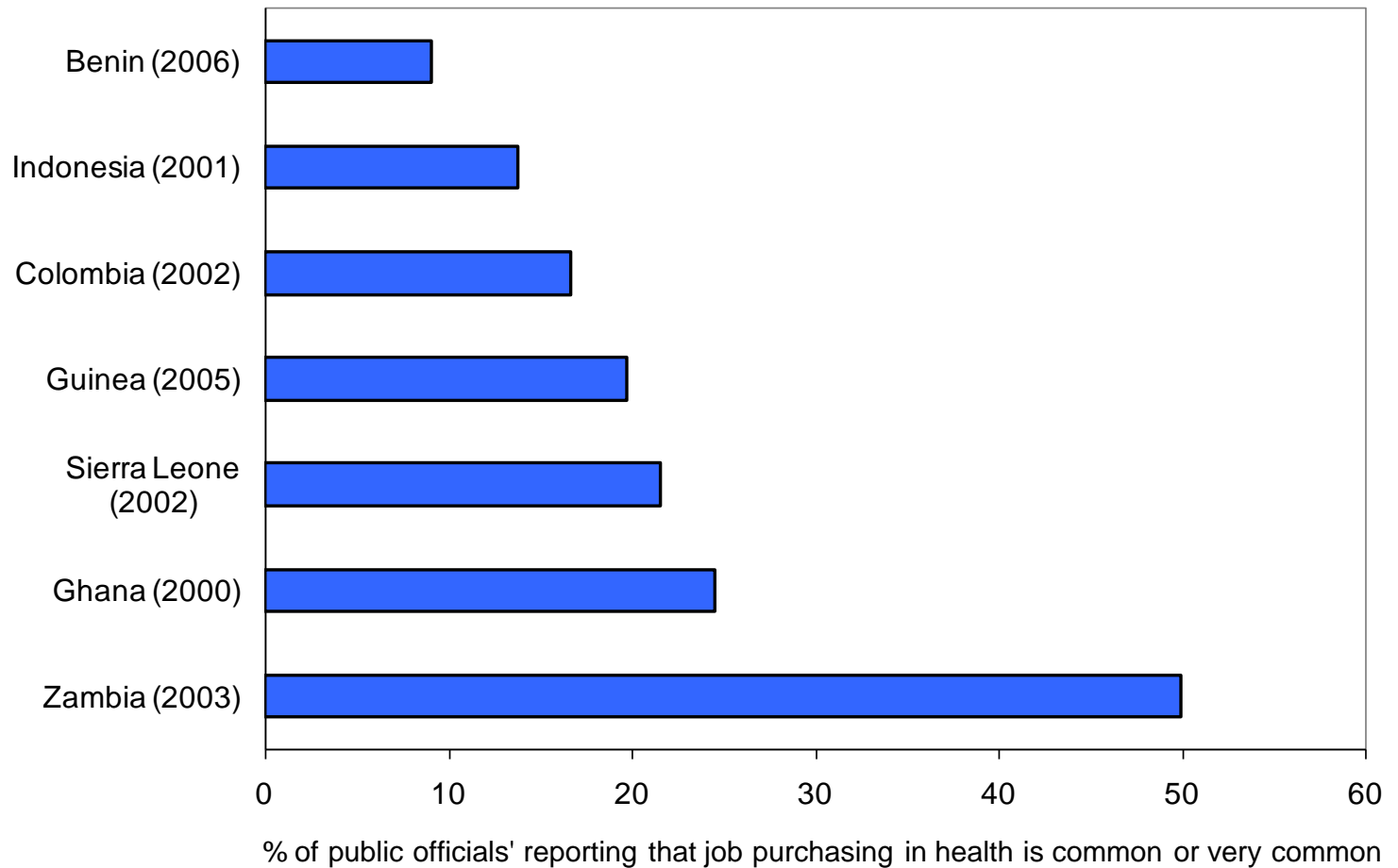
# More Indicators of Poor Governance

- **Theft of drugs and supplies**
  - In Latin America study of 8 countries report theft drug in hospitals
- **Corruption in civil service hiring**
- **Patients satisfaction**

Are patients satisfied? Evidence from Indonesia, El Salvador, and Turkey show similar results:

  - Low quality of publicly provided health car
  - Limited hours and long waits
  - Lack of non-labor inputs
  - High use of private sector by all income groups

# Purchasing of Positions



Source: World Bank Governance and Anti-Corruption Diagnostic Surveys (various years).

# Performance Incentives

- Mixed evidence on the impact of higher salaries
- Better provider incentives key:
  - Provider payment arrangements
  - Recruitment and promotion criteria
  - Management capacity, authority and rewards
- Formal fees have benefits for providers and patients

# Institutional Incentives Drive Health Care Delivery Performance

- India: incentives raise productivity, training is not enough:
  - Better trained doctors exert less effort
  - Public sector doctors exert even less effort
- Argentina Plan Nacer & Philippines Pay for Performance – improve quality and incentives for higher productivity
  - Pay incentives for public physicians and hospitals raised productivity and quality
  - Accountability and audits critical to track funds
- Brazil's contracting hospital managers: autonomy and accountability

# Accountability in Brazilian Hospitals Makes a BIG Difference in Performance

	<b>12 contracted-out public hospitals</b>	<b>12 traditional public hospitals</b>
<b>Quality</b>	<b>median</b>	<b>median</b>
General mortality	3.3	5.3
Surgical mortality	2.6	3.6
Clinical mortality	11.6	12.0
Pediatric mortality	2.8	2.6
<b>Efficiency: Descriptive Statistics</b>		
Bed turnover rate	5.2	3.3
Bed substitution rate	1.2	3.9
Bed occupancy rate	81	63
ALOS	4.2	5.4
ALOS surgery	4.8	5.9
<b>Technical Efficiency: (discharges/bed)</b>		
General	60	46
Surgical	71	44
Clinical	86	53
GYN/OB	96	58
<b>Annual Spending (in R\$000)</b>		
Expenditures/bed	177	187
Expenditures/discharge	2.9	4.3

Source: Adapted from La Forgia and Couttolenc (2008).

# Key Features of the Successful Models

- Autonomous managerial authority
- Incentives for efficiency, cost containment and equity
- Flexible HR management: hire and fire staff
- Strategic purchasing & e-procurement
- Contract monitoring and enforcement
- Robust information environment
- Accountability of managers and staff

## V. Conclusions

- Economic growth contributes to improvements in health, but the role of health as it affects growth is ambiguous on a macro level, but convincing on a micro level
- Public health investments in public goods pay off to individuals and society
- Medical technology can play a role in reducing mortality. In OECD medical technology improves morbidity and raises costs. But improvements in health status often lag

## Conclusions (cont.)

- Health improvements raise well-being and individual and social welfare
- Targeted early childhood development pays off in 20+ years, but improves learning, productivity, incomes and adult health status
- Public health programs: technology exists but uneven performance
- Health care delivery uneven due to poor incentives and limited accountability undermining efficiency and effectiveness of health care delivery and thereby improvements in health status

# Conclusions (cont.)

## Priority of Investments

- Essential investments:
  - Basic public health
  - Services for disadvantaged groups: nutrition supplements, targeted early childhood investments
- Effective institutions in health care delivery
- Preventive measures linked to behavior (smoking cessation, lifestyle improvements) – but works best if reach patients through services and outreach that respond to patient demand

Thank you

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