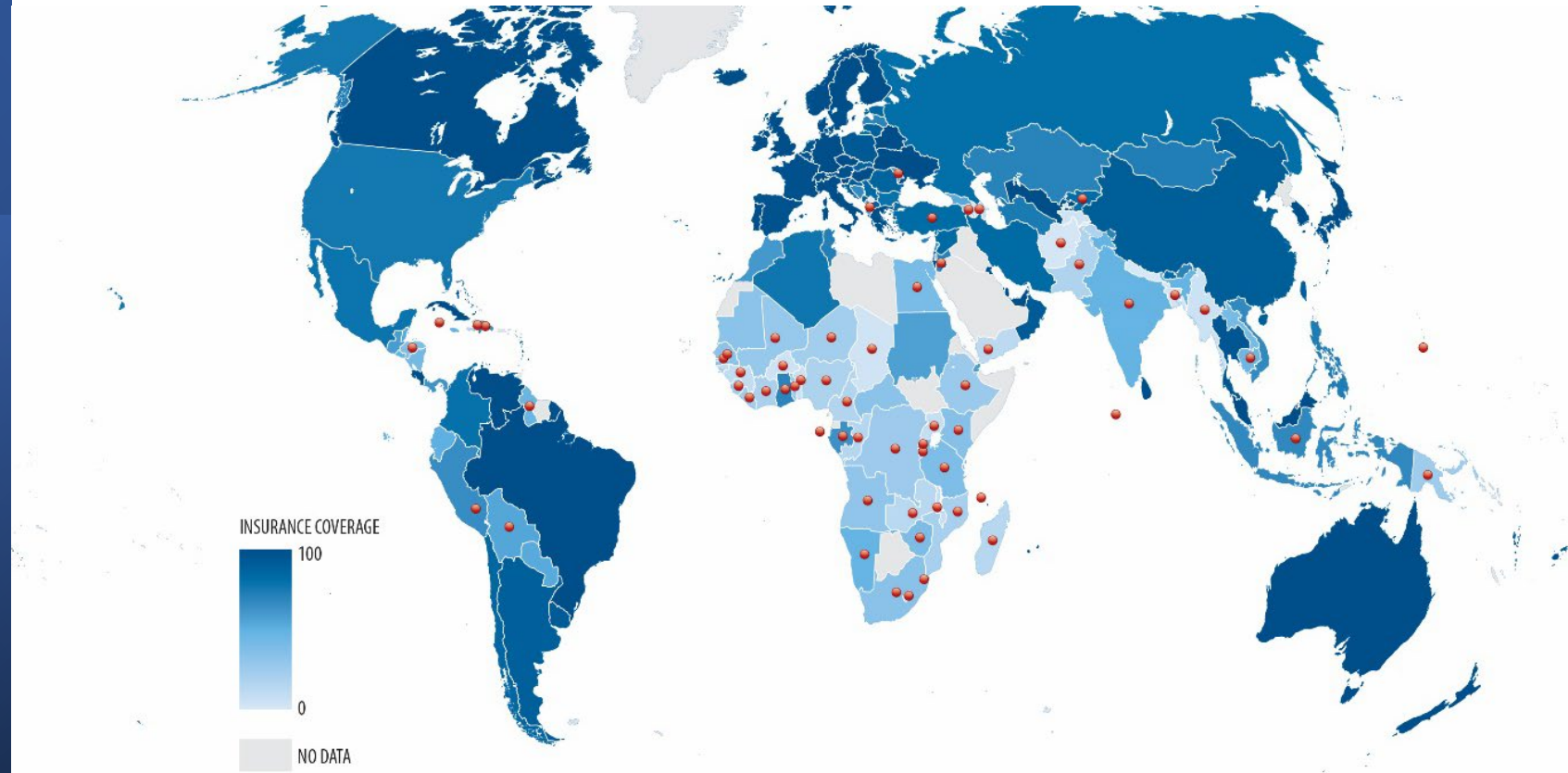


The prices in the crises: What we are learning from 20 years of health insurance in LMIC

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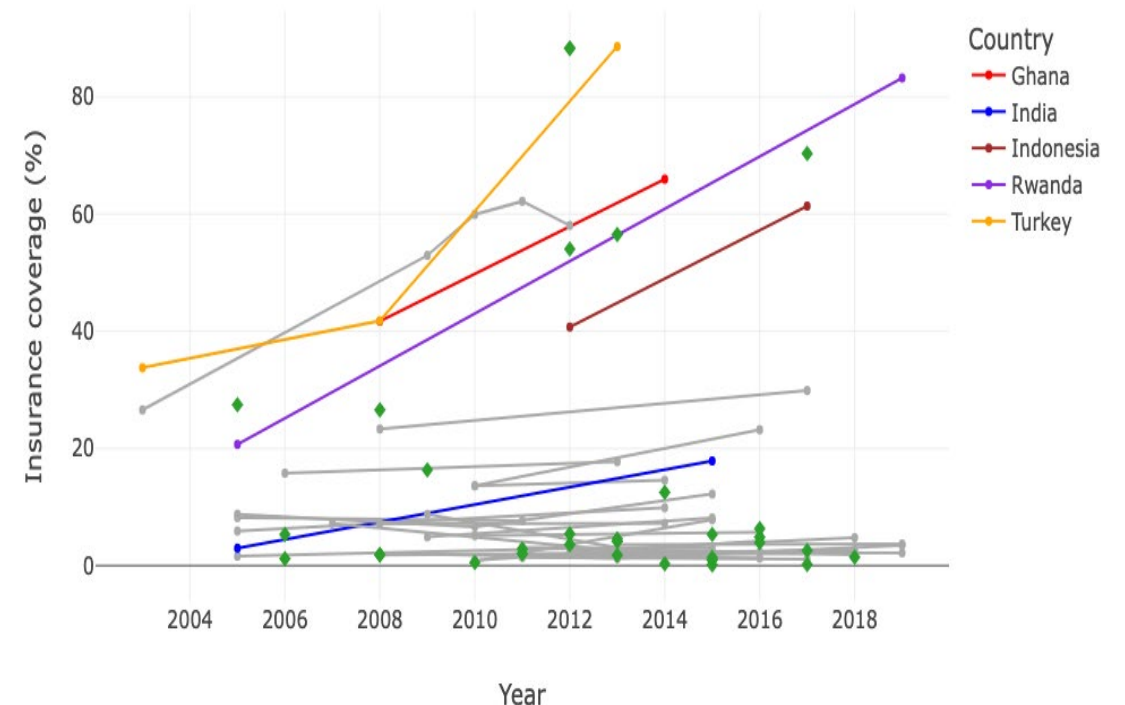
Health insurance coverage across the world



Notes: The data in this map shows percentage of health insurance coverage for the latest year for which data or estimates are available. For countries with a red dot, health insurance coverage data are obtained from the DHS surveys (“Demographic and Health Surveys,” n.d.). For the other countries, the data comes from OECD health data (Scheil-Adlung 2014). The grey zones represent locations where data was not available.

Massive Increase in health insurance schemes

- Around the world, governments have introduced “health insurance” schemes
 - With impressive improvements in share of population covered by such schemes in many countries
- Rwanda: 20% in 2005 to 83% by 2019
- Turkey: 28% in 1998 to 88% in 2013
- Indonesia: 40% in 2012 to 61% in 2017
- European countries: 60-70 years to expand from 10-20% at the turn of the 20th century to >75% in 1975



Notes: The graph shows the evolution of health insurance coverage over time using the DHS dataset for surveys from the year 2000 or later. If there was only one datapoint for a country, we represent it using the green diamond shape. See Appendix A for documentation of the DHS data used for this analysis.

A rationale for health insurance in LMIC

- Virtually all low-income countries have established network of public hospitals and clinics that provided heavily subsidized and tax-financed care. This is insurance!
- Why the new health insurance?
- Original idea
 - Despite free public sector, many people going to fee paying private sector
 - High Resulting OOP is inefficient: Welfare can be improved by shifting ex post OOP to ex ante insurance (no change in amount necessary!)
 - Resulting outcomes are inequitable, as private sector efficiency works through price
- Solution: Health insurance
 - Ex post OOP converts to Ex ante premiums—increases welfare
 - Public sector competes for patients—increases quality (productivity rationale)
 - Private sector becomes accessible for patients—increase in quality (allocative rationale)

Did it work?

- Kind of, but not really
 - OOP conversion to premium: did not happen—all schemes now tax funded creating a dual system of financing in many countries
 - Became necessary because of very low demand for unsubsidized health insurance
 - Weak evidence of impact on health outcomes
- Why has it not worked as originally envisioned
 - Usual response is that supply constraints—such low quality and extreme patient loads—have not allowed the system to deliver
 - This is incorrect
 - Instead, provider responses appear to have systematically undermined these schemes
- What about the original rationales of increasing productivity in public sector and enabling greater use of the private sector?
 - We can't say because people don't measure it: research agenda

Main Takeaways

1. Health insurance in low-income countries is not really insurance: It is an alternate reimbursement scheme that seeks to (a) align incentives better in the public sector and (b) expand the network of clinics where people can receive subsidized care
2. Health insurance : But, the inseparability of quality of care and financial protection in LMIC implies that price incentives alone are insufficient to provide correct incentives for care: As a result health insurance programs have been undermined by provider responses

Two Questions: Deeper Dive

1. What is common/different across health insurance schemes?
2. Why hasn't health insurance improved health outcomes?

Commonalities: Financing

- Because schemes implemented on top of free or highly-subsidized (public) healthcare
- Adverse selection is not an issue as cost recovered through general taxation: it is even desirable!

| Person | Cost of Care | Wealth | Cost of raising public funds | Amount Raised through taxes | Subscription? |
|--------|--------------|--------|------------------------------|-----------------------------|---------------|
| 1 | 10 | | | | |
| 2 | 20 | | | | |
| 3 | 30 | | | | |
| 4 | 40 | | | | |
| 5 | 50 | | | | |
| 6 | 60 | | | | |

Adverse selection problem: Set any premium—then only people with costs higher than that premium will choose to ensure, leading to losses and market collapse

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| 2 | 20 | Millionaire | Low | 60 | |
| 3 | 30 | Millionaire | High | 10 | |
| 4 | 40 | Poor | Low | 10 | |
| 5 | 50 | Poor | High | 20 | |
| 6 | 60 | Billionaire | Low | 110 | |

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This schedule of taxes fully finances the care, reduces deadweight loss and is progressive

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Health insurance in LMIC is not really insurance (i.e. risk pooling); it is closer to healthcare subsidization.

| Person | Cost of Care | Wealth | Cost of raising public funds | Amount Raised through taxes | Subscription? |
|--------|--------------|-------------|------------------------------|-----------------------------|---------------|
| 1 | 10 | Poor | High | 0 | 35 |
| 2 | 20 | Millionaire | Low | 60 | 35 |
| 3 | 30 | Millionaire | High | 10 | 35 |
| 4 | 40 | Poor | Low | 10 | 35 |
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Two remarks that may be relevant to ECA

Remark 1

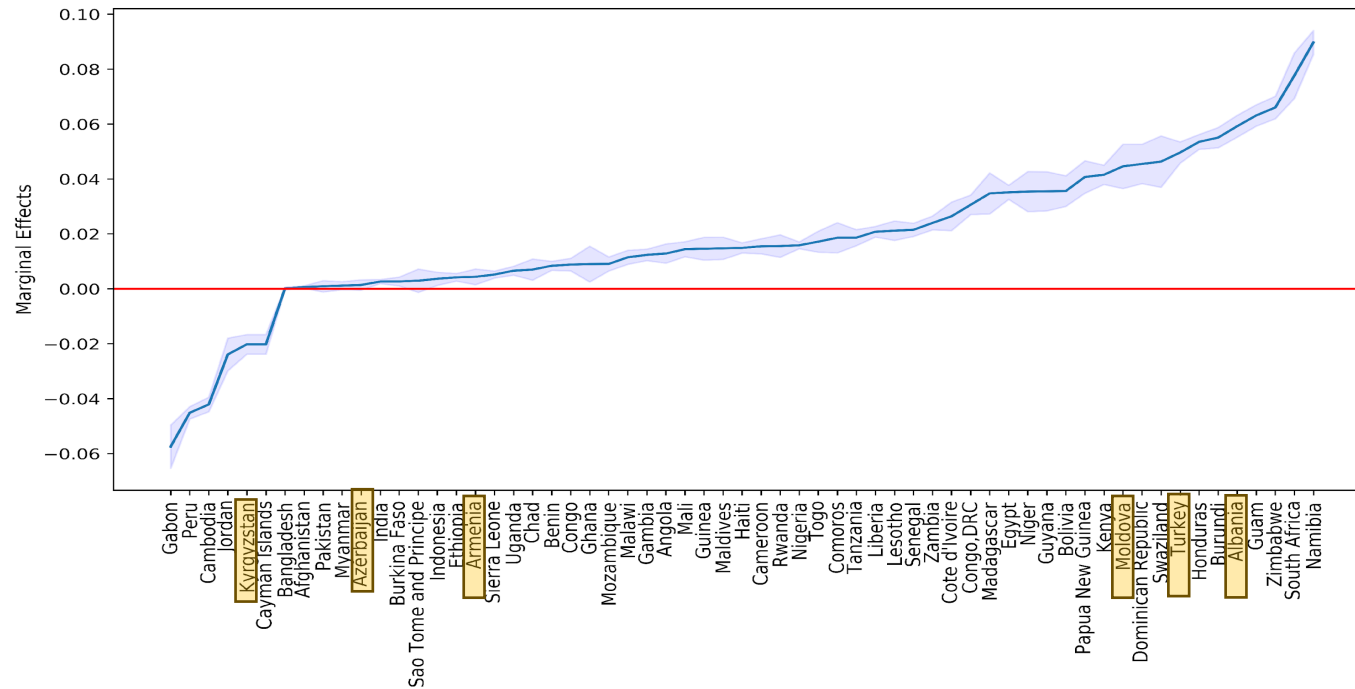
- Health expenditures have a high income elasticity—the rich spend a lot more than the poor
- This means that when you make healthcare free at point of care, the subsidy is *regressive*: The rich capture most of the subsidy
- Even in a poor country like Zambia, removing user fees was regressive (Lepine, Lagarde and Nestor 2017)
 - “We estimate that the policy was equivalent to a transfer of US\$3.2 per health visit for the 50% richest but of only US\$1.1 for the 50% poorest.”
- This means that the progressivity of health insurance as a whole depends on how it is financed
 - If financed through income taxes, depends on the progressivity of the income tax system
 - If financed through payroll taxes (ECA?), generally financing is *regressive*
 - If financed through indirect taxes (Ghana), can be very regressive
- If interested in equity, key to study the entire system of payments and financing

Income gradient across countries

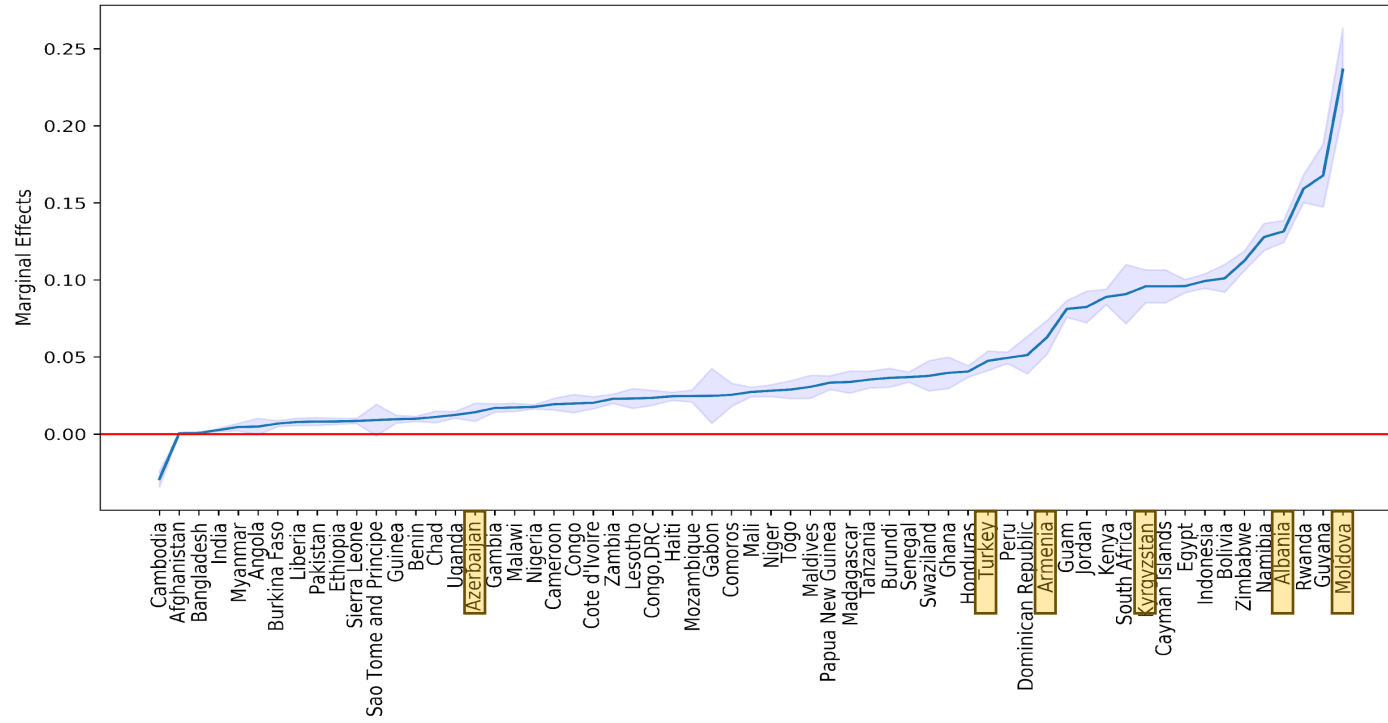
Remark 2

Given that health insurance is heavily subsidized, we can ask if the subsidy is progressive. Surprisingly little work on this

Can examine likelihood of *having* health insurance as function of income in all DHS countries with data on health insurance: Wide variation!



Education gradient across countries



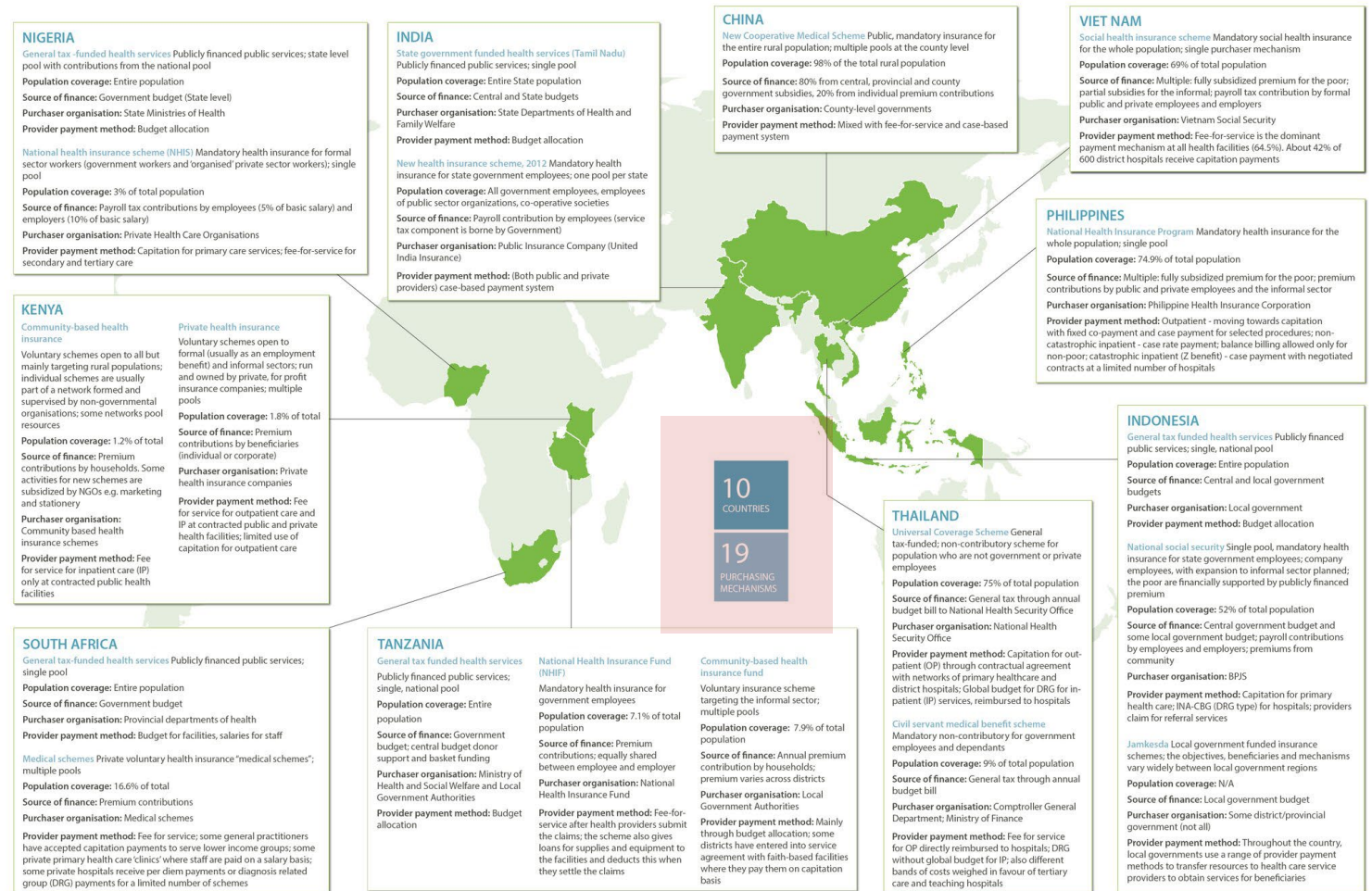
Differences across insurance schemes (cont'd)

- There are significant differences in what is covered (preventive? Outpatient? Conditions?) as well as who is targeted (public sector workers? Informal sector? Others?) but generally insufficient work on tabulating these differences
- How are providers reimbursed?
 - Prices of procedures administratively set using Diagnostic Rate Groups or DRGs (India)
 - Hybrid model: capitation + per procedure price (Kenya)
 - Fee-for-service (Vietnam)
 - Multiple additional mechanisms: For instance, Ley 100 in Colombia guarantees right to health
- Prices may not be updated for a long time, ad hoc adjustments etc. etc.

Purchasing Mechanisms in multiple countries: RESYST study

<https://resyst.shtm.ac.uk/strategic-purchasing>

PROFILES OF PURCHASING MECHANISMS EXAMINED IN THE STUDY



How are health insurance schemes
changing the health sector?

Outcome 1: Take-up

- Rich empirical literature
- RCT (Nicaragua, Philippines, Indonesia, Vietnam)
 - Premium subsidy
 - Information
 - Administrative assistance
- Main results
 - Take-up is low
 - Inexistent without significant financial subsidies
 - Why?
 - Non-price costs make scheme not actuarially fair
 - Health does not improve enough

Outcome 2: Financial protection and utilization

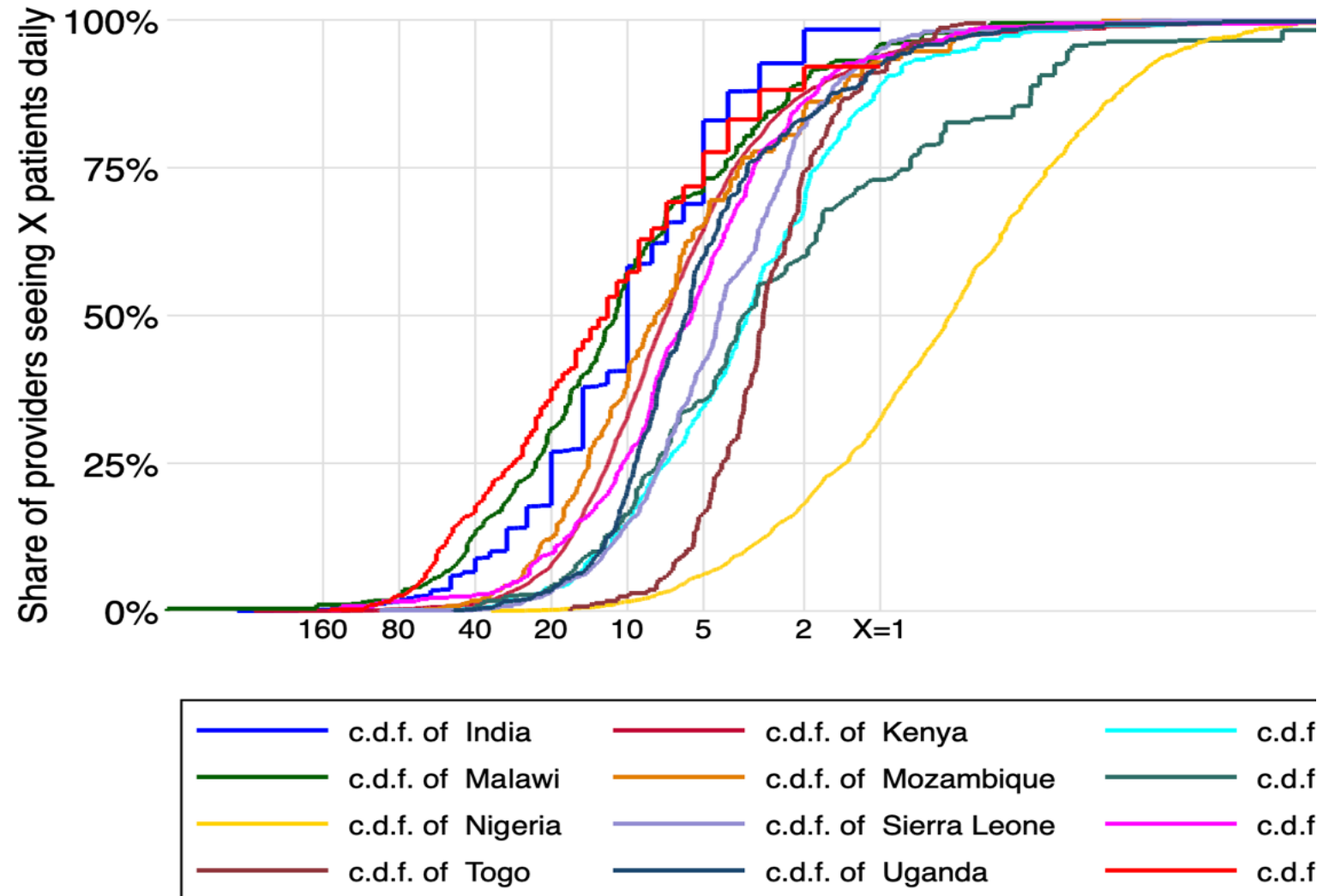
- Somewhat dense empirical literature
 - RCT using subsidy on premium for identification
 - Event studies/diff-in-diff leveraging staggered roll out (random or not) [e.g., Mexico, Burkina-Faso, India]
- Utilization:
 - Typically: increase in utilization across the board: preventive, outpatient care (acute and chronic diseases), inpatient care (surgery)
 - Some (*still scarce*) evidence of reallocation from public to private facilities covered by scheme.
 - Little to no evidence on quality of care (*avenue for more research on quality weighted visits*)
- Financial protection:
 - Drop in OOP, catastrophic expenditures (measured in many different ways)

Outcome 3: health outcomes

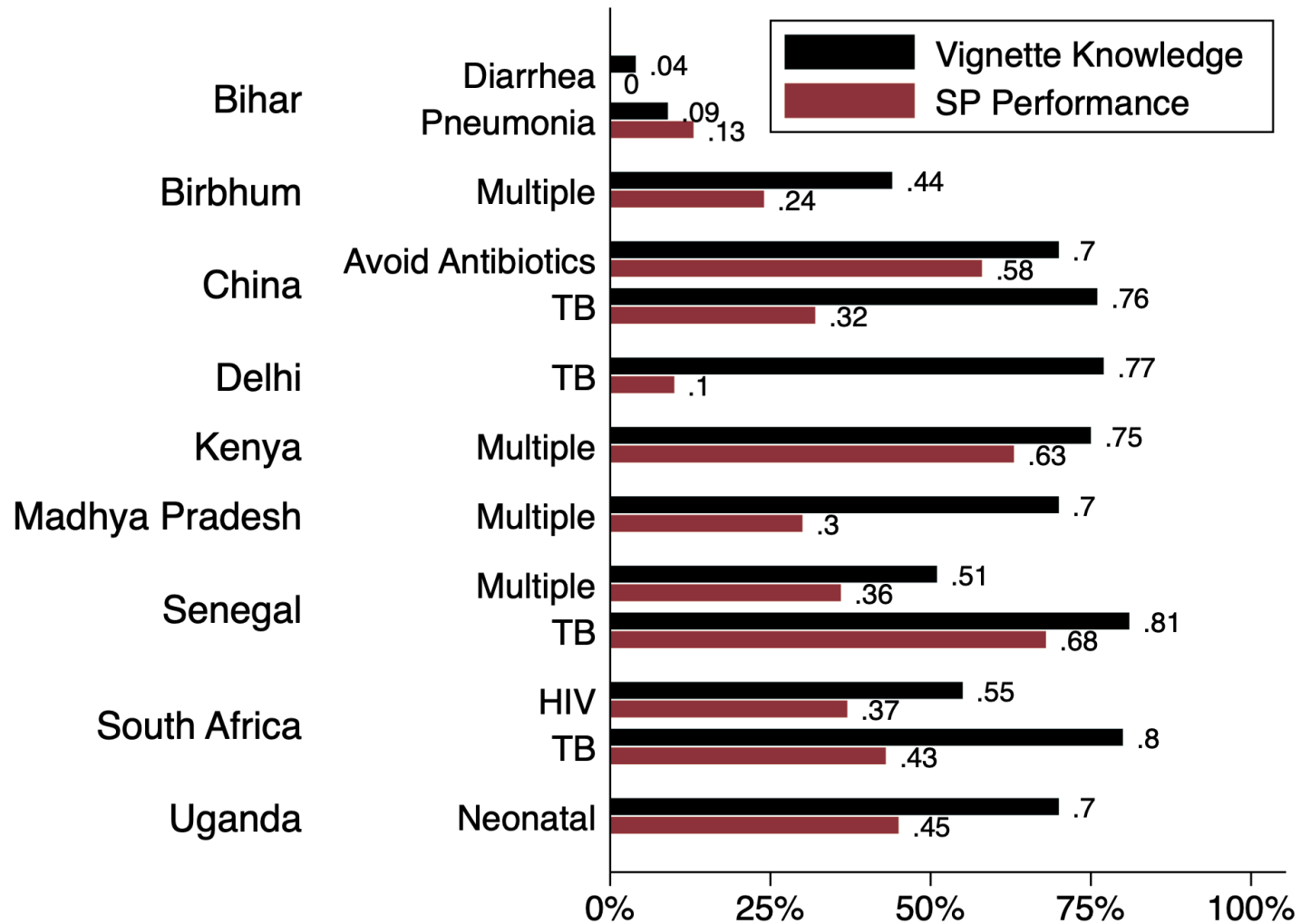
- Somewhat dense literature (given publication bias)
 - Same methodology as for utilization/financial protection
- Except in few cases (and mostly preventive care): no effect on health detected.
 - Statistical power
 - Health services at capacity
 - Health insurance scheme alters provider incentives (provider moral hazard)
- Note similar results from Wagstaff & Moreno-Serra (2009) in ECA

Why hasn't health insurance improve health outcomes?

The obvious:
no room for
improvement



The know-do gap



Health insurance and provider moral hazard

- What is health insurance?
 - Standard insurance is uni-dimensional: You face an income shock and are compensated for the loss
 - Health shocks are bi-dimensional: You face a *health* shock and to compensate you for the potential loss in income, I need to reimburse *providers* for their care
 - The reimbursement side therefore becomes critical—How you reimburse affects the care you receive and therefore the loss in income

Health insurance and provider moral hazard

Understanding the problem

- Person with chest pain: either blockage, in which case they need a stent, or short-term stress, in which case they need anti-anxiety medication and rest.
- Patients do not know which one they need—problem of Credence goods
- Suppose it costs the hospital \$1000 for the former and \$100 for the latter
- If reimbursements are \$1100 and \$200 for stent, medication, profits are identical whether they do one or the other—and they will do ‘the right thing’
 - Even if reimbursements are \$1200 for the stent and \$200 for the medication, they will probably do the right thing
 - But what happens if reimbursements are \$5000 for the stent and \$50 for the medication?
- The problem becomes much harder if cost structures are different across hospitals!
 - Hospital A: \$1000 for Stent, \$100 for medication
 - Hospital B: \$2000 for Stent, \$100 for medication
- There is NO single reimbursable price where both hospitals do the right thing!
- Example: \$2000 for Stent, \$150 for medication. Hospital A will always do Stent, Hospital B will always do medication!
- Depending on the prices, you can get “denial of care,” “surprise billing,” “unnecessary care,” “insufficient care”

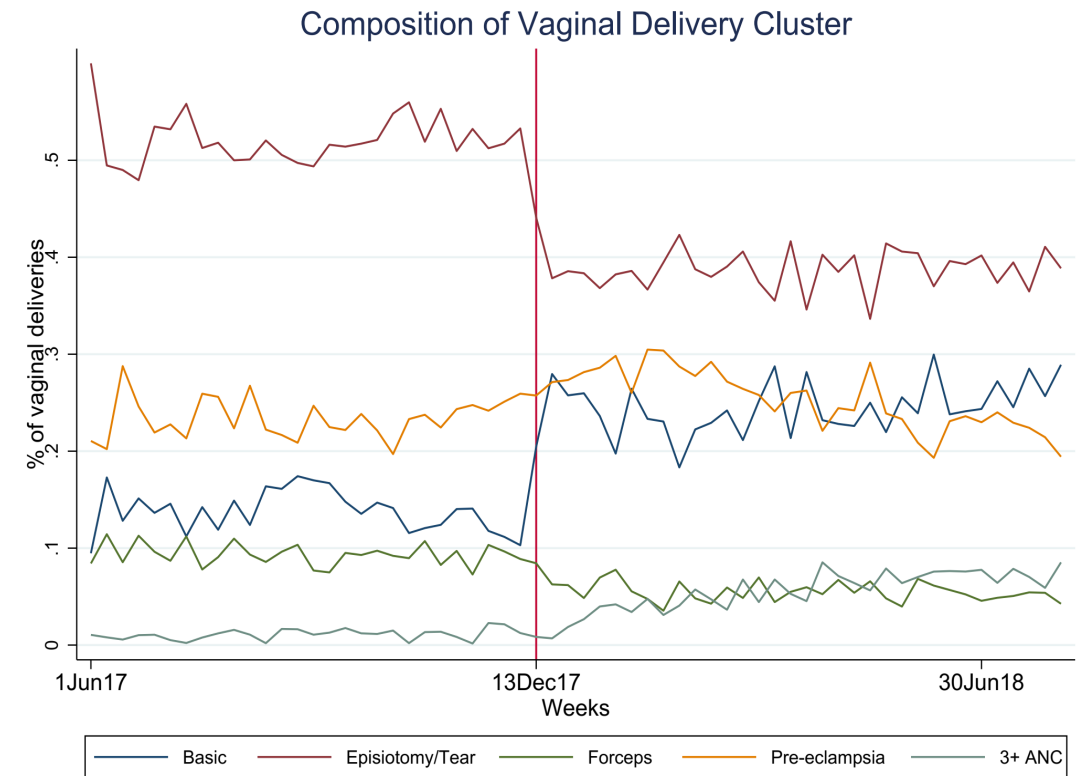
Health insurance and provider moral hazard

Understanding the problem

- Given the intractability of this problem, what do health insurance systems actually do?
- First, they keep changing the prices or other mechanisms
- Equally importantly: We are trying to solve **two** problems—don't do too much, and don't do too little
- Tinbergen rule: 2 outcomes need two instruments!
 - High income countries: Two instruments
 - Ethic boards, courts for health quality
 - Financial insurance for financial protection
 - Low- and Middle-Income Countries: one instrument only as they are trying to use prices alone to control quality
 - Inseparability and potential tradeoff
- Need an entire set of processes/regulation to make this work: **Its not about the product, its about the processes you have in place once you have committed to a product**

Health markets are credence markets

- Reimbursement schemes alter incentives of providers. Existing evidence scarce but building:
 - Excess provision of healthcare (hysterectomies or cataract surgeries in India)
 - Under-provision of healthcare (including denial of care)
 - Surprise billing
- Literature here is nascent on the interaction between health insurance and provider incentives.



Conclusion

- New health insurance schemes were not designed to address demand-side issues
 - This was already addressed through public taxation and provision
- Primarily designed to address incentives and expand availability
- Most schemes now finance through taxation; provider reimbursement is very different—across systems are over time
- Schemes *are* decreasing OOP/catastrophic expenditures and increasing utilization, but sparse evidence on impact on health outcomes
 - Possible that this is more money and more care for no improvement
- This is not a question of increasing demand hitting inelastic supply
 - Provider behavior seems to be key
- Much debate around products, too little about process and implementation
- Almost no evidence on how health insurance changes patient choices and provider behavior—the two problems that they were really designed to solve!