Health: Low hanging fruit?
There are some technologies that are known to be effective and cheap ways to promote good health:

- Bed nets for malaria
- Immunization
- Breast feeding
- ORS
- Bleach
These health interventions have high financial returns:
- We have already seen the high financial returns to deworming in a previous lecture
- Same argument has been made about preventing malaria.
  - Jeff Sachs: countries which have lots of malaria are poor.
  - Controlling for other factors, malarial countries GDP is 30% lower than non-malarial countries
Figure 3.
Malaria Index 1965

Source: Gallup and Sachs (2001)
Figure 4.
Malaria Index 1994

Malaria index 1994
- 0
- 0.01 - 0.18
- 0.19 - 0.42
- 0.43 - 0.65
- 0.65 - 0.80
- 0.81 - 1.00
Figure 2.
GDP per capita 1995

Source: Gallup and Sachs (2001)
Does malaria cause poverty or the other way around?

- Sachs conclude that malaria cause poverty
- However one could argue the opposite:
  - Why did Latin America largely eradicated malaria but not Africa?
  - Why did malaria index increased in India but not Sri Lanka?
  - Countries which have not eradicated malaria may also have other problems
Evidence from the Eradication Campaigns

- Hoyt Bleakley: exploits decrease in malaria due to DDT spraying campaign in several countries in the Americas (US South, and several Latin American Countries).
- Campaign started around 1955 in latin america
- Regions that had the largest prevalence of malaria had the largest reduction in malaria
- ... and the largest increases in income across cohorts
Example: Malaria in Colombia

Large reduction in malaria when spraying started

1. Large Decline in Cases Following Onset of Spraying Campaign

The reduction was largest in places that had more malaria to start with

2. Largest Benefit Areas that had More Malaria To Begin With

Pre-eradication malaria cases
Example: Malaria and income in Brazil


Pre-campaign malaria intensity
Brazil: Do younger cohorts show larger gains in malaria infected region

Each dot indicates the strength relationship between pre-campaign malaria index in region of birth and income, for those born in various cohorts: for pre-campaign cohorts, malaria is associated with lower income. The relationship become less and less strong for younger cohorts, and is about zero for the youngest cohorts.
The Bottom Line

- A child not exposed to malaria in childhood would have an income 50% higher for all their lifetime than a child exposed to malaria.
- High but not absurdly high if you consider the effect of deworming.
- Investments in malaria control measures seem highly cost effective:
  - Why are countries not doing it?
  - Why are people not doing it?
Low Demand for preventive Care

We have already seen that preventive care seems to exhibit:

- Low level of demand
  - See graphs from various price experiment
- High sensitivity to prices, either positive... or negative (small incentives).
  - See graph from an experiment in Udaipur offering a kilo of lentil for each immunization received in a camp (compared to just the camp).
Effect of a small incentive for immunization
Why is this surprising?

- These technologies have very high benefits.
- So if people do not want to pay for them, is it because they think there is something bad with these technologies (the “culture” argument)?
- But in this case, we would not see such high response to prices... So what can it be?
Do people care about their health?

- Yes, they do:
  - Large amount of money spent on health care (up to 7% per month in the Udaipur survey)

- But most of these is spent on curative care.
  - Large expenses
  - Often for care that is very invasive and of poor quality: too much treatment.
Are governments to blame?

In a certain measure, yes:
- Nurses are often absent: 35% on average in a survey conducted by the world bank.
- Even when they are there, governments doctors and nurses do not treat patients very well
  - 3 minutes, 3 questions, 3 medicines!

But even when services are good, people do not always get them: for example in the immunization camps, only 12% of people got all the shots: there is something about demand, not only about supply!
Why the low demand

- Two difficulties with preventive care:
  - It is difficult to learn what works
  - Benefits are in the future, and the cost is now.
Learning about Health Care

- Most diseases are self-limiting: they get better after being worst.
- If you start from the theory that a shot is needed, and someone is willing to give you that shot, then you will usually feel better, and attribute it to the shot.
- It will be harder to attribute it to nothing... tendency to overmedicate is always present (in rich and poor countries), and needs to be regulated away.
Preventive care is worst

- You take an action that *prevents* something from happening.... A long time after the fact. Drawing the link is difficult
- If this is against a contagious disease, you may see many non-immunized children who are not falling sick either (same effect as with the deworming).
- You need to trust what you are told, and this trust is fragile:
  - MMR vaccine and autism in the US
  - Polio vaccine and sterilization in India
Another problem is that preventive health care costs are incurred today, but benefits are in the future.

Human beings tend to put too much weight on the present, relative to the entire future:
- You have no time to do your essay for this deadline
- .... But you will (surely) have time later in the semester
- Same thing for exercising, savings, etc.

Same problem with preventive care: parents may feel every month that they will get the immunization next month.... But something else comes up, and they don’t end up doing it.
What this means for policy

- Large benefits from making things easy/automatic for people:
  - Free Chlorin dispenser right where you collect your water
  - Small incentives for immunization/compulsory immunization if you can pull it off...
  - In many cases, the superficial cost benefit analysis gives you the wrong answer.
    - Charging a small amount may be counter-productive
    - Giving people small incentives may save you money
Sustainability is not what you think it is

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<thead>
<tr>
<th></th>
<th>100% Subsidy</th>
<th>90% Subsidy</th>
<th>With Lentils</th>
<th>Without Lentils</th>
<th>No Cost Sharing</th>
<th>With cost sharing</th>
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<tbody>
<tr>
<td>Bednets: cost per life saved ($)</td>
<td>284</td>
<td>339</td>
<td>28</td>
<td>56</td>
<td>1.4</td>
<td>4.26</td>
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<tr>
<td>Immunization: Cost per immunization ($)</td>
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<td>Deworming: Cost per Child treated ($)</td>
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What this means for policy

- The role of learning and trust is key
  - There can be further benefit to early subsidies, if this leads to learning about benefits.
  - For example bednets (Dupas, 2010)
    - People who got them were more likely to pay for a second one in the future
    - Neighbors of people who got one for free were more likely to pay for one if they had to pay.
  - Because preventive care is hard to teach, need to maintain trust: important for governments to chose their battles. India lost credibility by lying to people about sterilization, and recovering from this is very difficult.