Introduction to Course on Measuring Health Equity and Financial Protection Using ADePT

Adam Wagstaff
Caryn Bredenkamp

What this course does

- Introduces the relevant concepts and methods used to measure health equity and financial protection
- Introduces the ADePT software – this simplifies the production of standard tables and charts, and increases accuracy
- You follow along on your laptop, and do the analysis for yourself
- Even if you're not an analyst, the course will give you a better feel for the work involved. You'll be a more informed commissioner and consumer of this type of work

ADePT

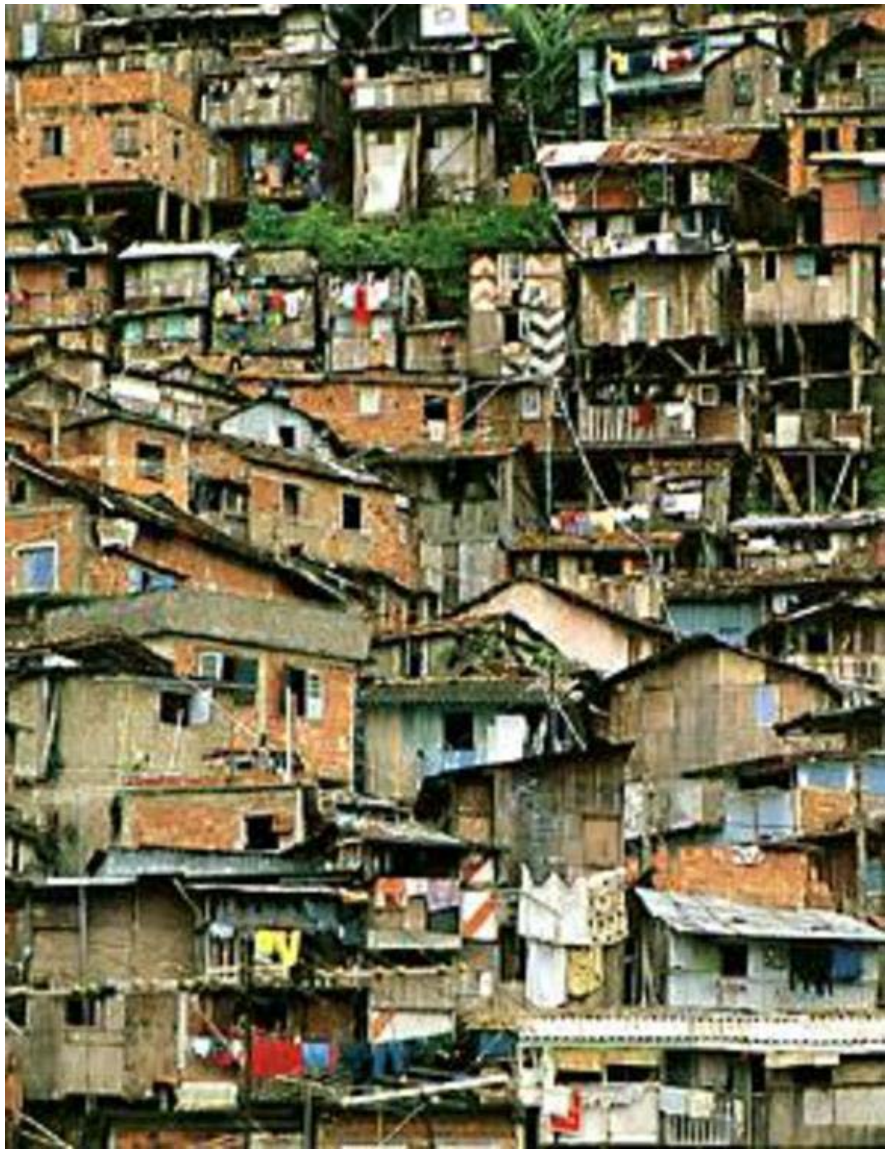
Health equity and financial protection

- With equity, we're concerned about differences between rich and poor in utilization of health services and health outcomes
- With financial protection we're concerned that people's living standards may be compromised by large and unexpected out-of-pocket spending on health

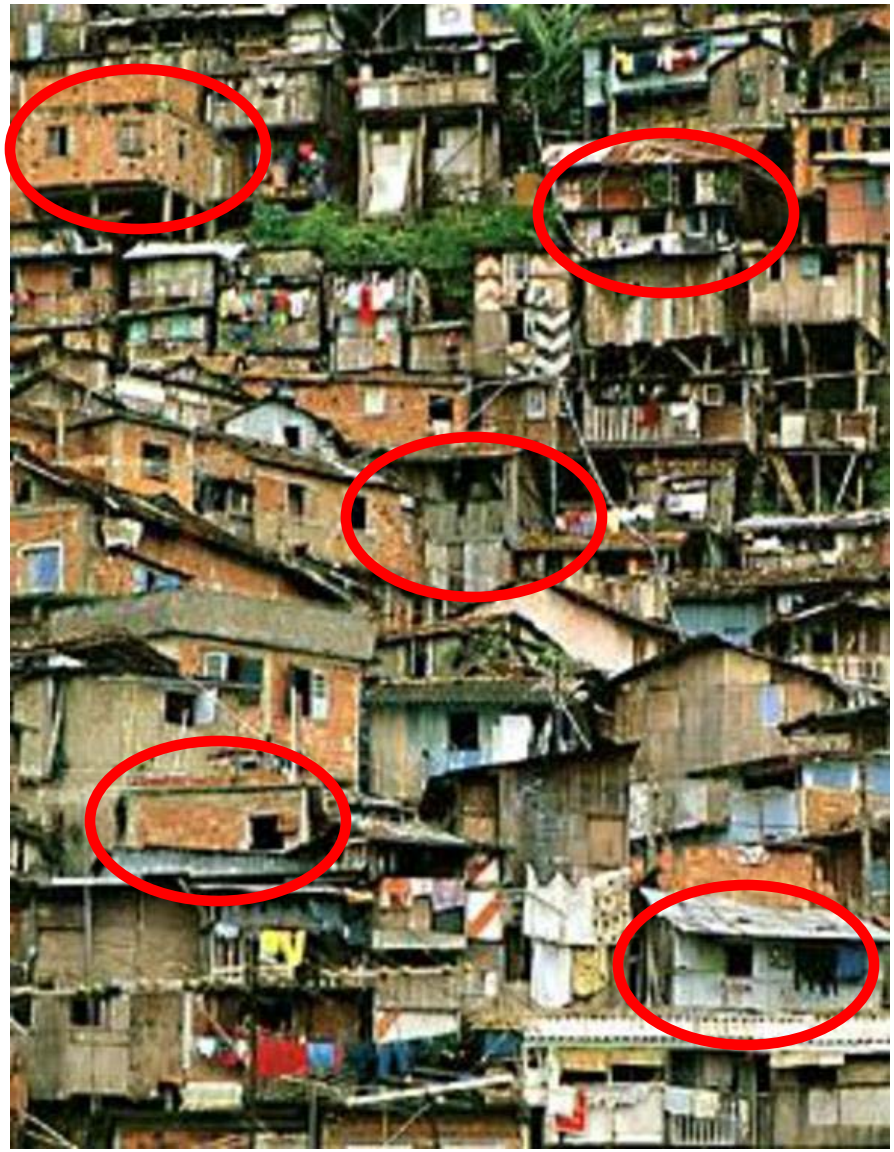
How do we get evidence on health equity and financial protection?

- Health information systems contain a lot of data
  - But individual records in these systems typically don't tell us whether someone is poor or not
  - There are exceptions – e.g. death certificates in some countries record the person's occupation, insurance records sometimes contain poverty status
- But typically we need data from household surveys if we want to get health equity issues
- Survey data also tell us about a household's total out-of-pocket spending on health. Otherwise we'd risk missing e.g. spending on medicines, copayments, informal payments, etc.

Start with a population…



…take a sample …



… do a household survey…

Part 3A: Healthcare services¶

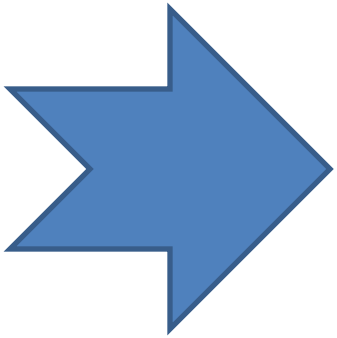
6. Has anyone in your household visited medical establishments or had home visits by physicians for check-ups and treatment over the last 12 months? ¶
(including health and pregnancy checks, abortion, insertion of intrauterine device, birth delivery… in case of no sickness/diseases/injuries) Yes.....1¶
No.....2 **(>>15)**¶
Ask those who have illnesses/injuries in question 3 first, then go to others ¶

Member ID¤	7. Names of users of medical services over the last 12 months ?¤	8. [Which] medical establishments has [name] visited? (including inviting physicians home) ¶ ¶ Village/hamlet clinics 1¶ Commune/ward clinics 2¶ Regional general clinics 3¶ Urban/rural district hospitals…4¶ Provincial/city hospitals…5¶ Central hospitals.... 6¶ Other state-run hospitals..7¶ Private hospitals 8¶ Other hospitals 9¶	9 Reasons for [name] to visit medical establishments??¶ Vaccination 1¶ ¶ Pregnancy checks, insertion of intrau devic aborti delive ¶ Healt check consu 3¶ Medi Treat	10. ¶ ¶ Number of visits and costs for *health checks/non-resident treatment* of [name] ... past 12	11. ¶ How many times did [name] used the health insurance cards or free healthcare ... ds/certificat	12. Number and costs of visits for *resident treatment* of [name] over the past 12 months? Costs include hospital fees and others (allowances for	13. ***Ask those who have free health insurance cards (Q.4 code 1 or 2)*** ¶ ¶ How many	14. What financial sources do your hh use to pay for healthcare cost? 1 is the most important source, 2 is the second one, until the 5th source¶ ¶ Government subsidy a part or total healthcare cost …11¶ NGO subsidy a part or total healthcare cost…2¶

Part 5: HH Expenditures¶
Recurrent expenditures on food and drinks¤

			1¶ Apart from festive occasions, parties, engagement parties, weddings, funerals and major death anniversaries over the past 30 days, which of the following items has your household consumed:¤	**2¶ How much has household c... over the... days?¤**	.8¶
1¤	5a2¤	101¤	Rice¤	¤	¤
2¤	5a2¤	102¤	Sticky rice¤	¤	¤
3¤	5a2¤	110¤	Pork¤	¤	¤
4¤	5a2¤	111¤	Beef¤	¤	¤
5¤	5a2¤	112¤	Bufallo meat¤	¤	¤
6¤	5a2¤	113¤	Chicken¤	¤	¤
7¤	5a2¤	114¤	Duck, goose meat¤	¤	¤
8¤	5a2¤	115¤	Other types of meat?¤	¤	¤
9¤	5a2¤	116¤	Processed meat?¤	¤	¤
10¤	5a2¤	118¤	Fresh shrimp, fish?¤	¤	¤
11¤	5a2¤	120¤	Other seafood¤	¤	¤
12¤	5a2¤	141¤	Condensed milk, milk powder¤	¤	¤
13¤	5a2¤	142¤	Ice cream, yogurt¤	¤	¤
14¤	5a2¤	143¤	Fresh milk¤	¤	¤
15¤	5a2¤	145¤	Beer¤	¤	¤
16¤	5a2¤	151¤	Cigarettes, tobacco for water pipes?¤	¤	¤
17¤	5a2¤	153¤	Outdoors meals and drinks?¤	¤	¤
18¤	5b1¤	201¤	Pocket money for children?¤	¤	¤

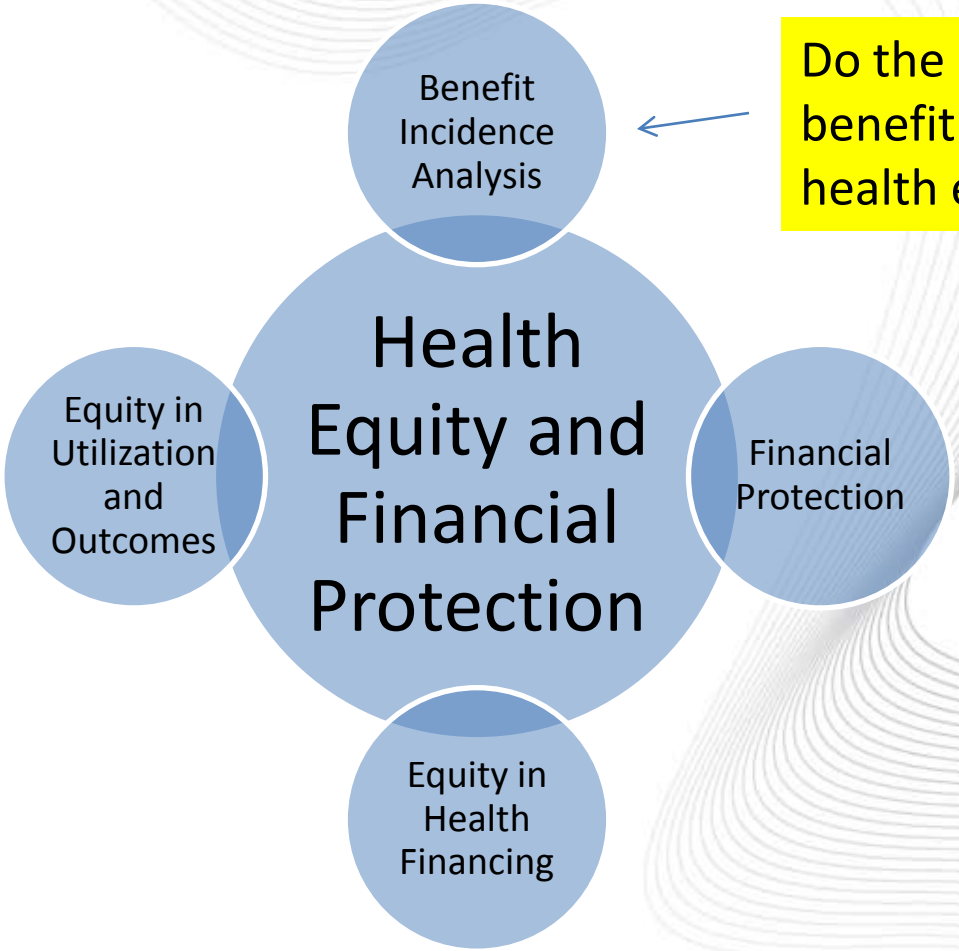
…and we get a picture of equity and financial protection



Quintile	HH #	PHC visit	Hospital OP visit	IP admission
	1	2	1	0
	2	0	0	0
Poorest 20%	3	1	0	1
	…	…	…	…
	1500	3	2	0
	1501	1	1	1
	1502	0	1	0
2nd poorest	1503	0	0	1
	…	…	…	…
	3000	3	0	1
	3001	2	1	0
	3002	0	1	0
Middle 20%	3003	2	0	2
	…	…	…	…
	4500	0	0	2
	4501	1	1	0
	4502	0	0	0
2nd richest	4503	1	0	0
	…	…	…	…
	6000	0	2	1
	6001	1	3	1
	6002	0	2	0
Richest 20%	6003	2	2	0
	…	…	…	…
	7500	4	2	0

Quintile	HH #	Income	Taxes	SHI contributions	Private insurance	Out-of-pocket spending
	1	100	20	0	0	1
	2	110	22	0	0	10
Poorest 20%	3	120	24	0	0	0
	…	…	…	…	…	…
	1500	1000	200	0	0	300
	1501	1100	220	20	10	20
	1502	1250	250	30	20	500
2nd poorest	1503	1500	300	50	10	1000
	…	…	…	…	…	…
	3000	1900	380	75	20	75
	3001	2000	400	100	30	200
	3002	2200	440	100	10	1000
Middle 20%	3003	2250	450	125	20	25
	…	…	…	…	…	…
	4500	3020	604	250	10	0
	4501	3021	604	400	0	400
	4502	3300	660	450	0	25
2nd richest	4503	3350	670	500	100	1200
	…	…	…	…	…	…
	6000	4950	990	1000	10	10
	6001	5000	1000	1100	0	0
	6002	5100	1020	1250	20	2000
Richest 20%	6003	5250	1050	1250	25	1500
	…	…	…	…	…	…
	7500	8000	1600	1250	10	50

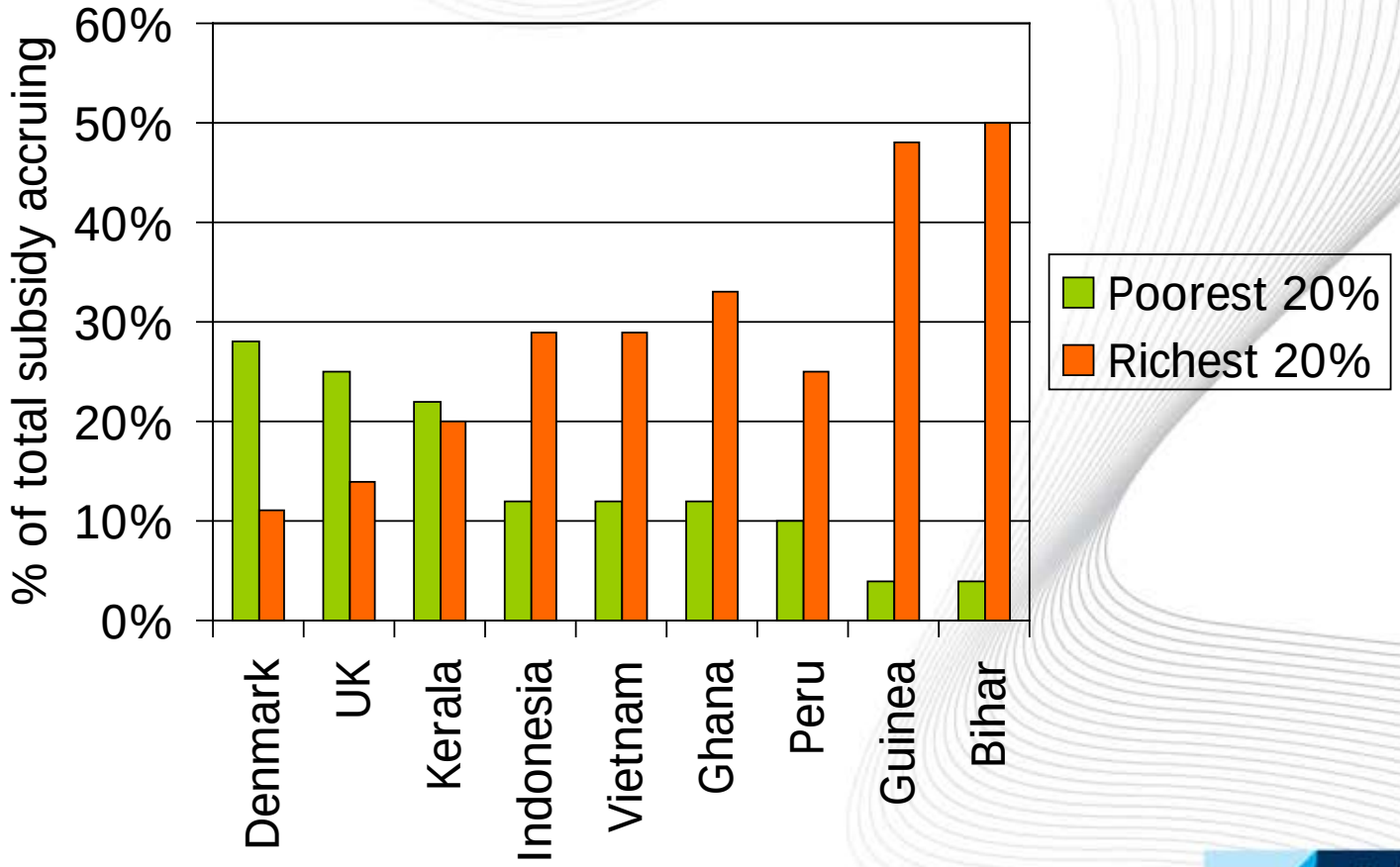
The elements of a monitoring strategy for health equity and financial protection



Do the poor actually benefit most from govt. health expenditure?

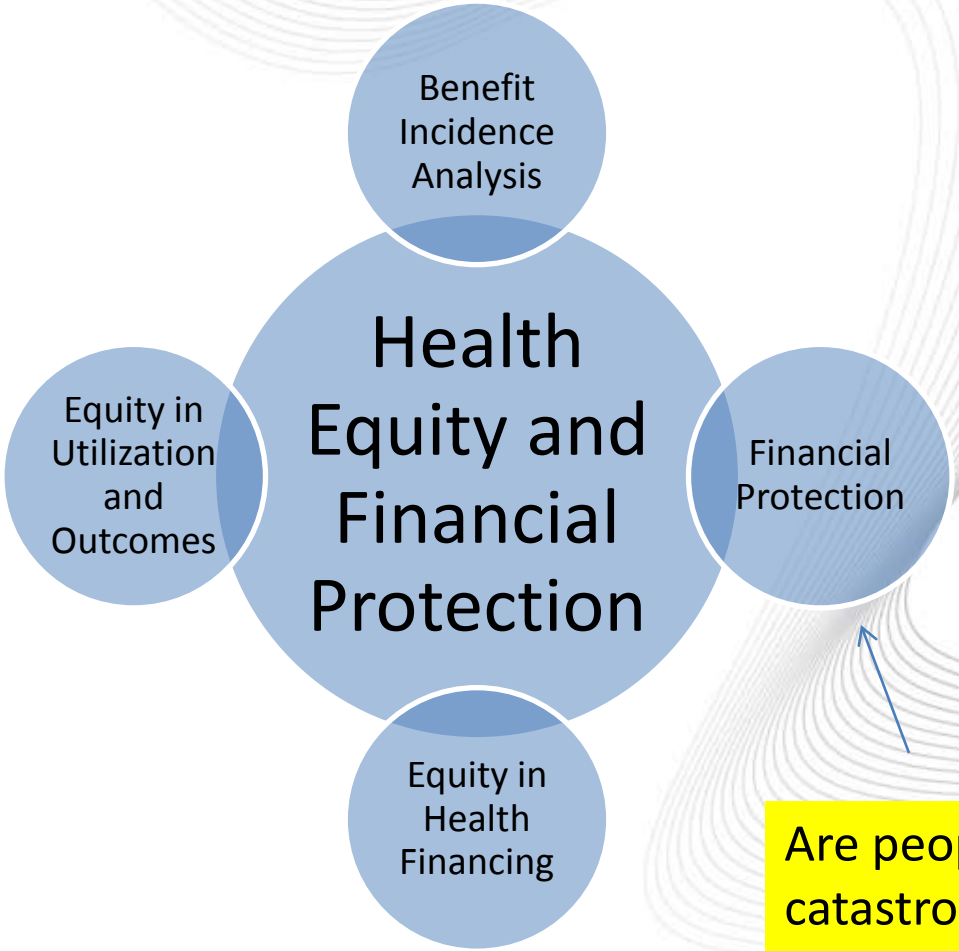
ADePT

GHE is more pro-poor in some countries / states than others



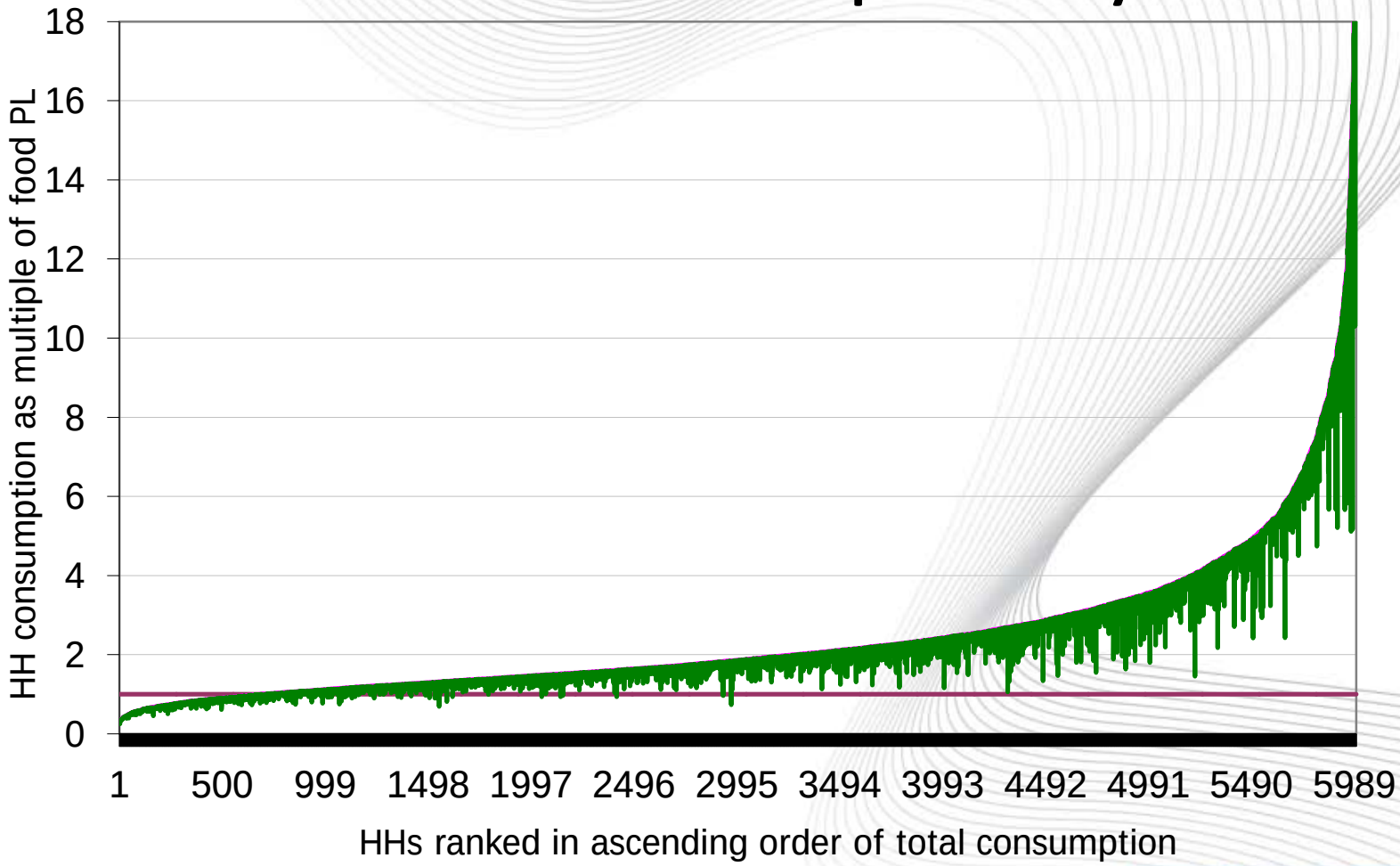
ADePT

The elements of a monitoring strategy for health equity and financial protection

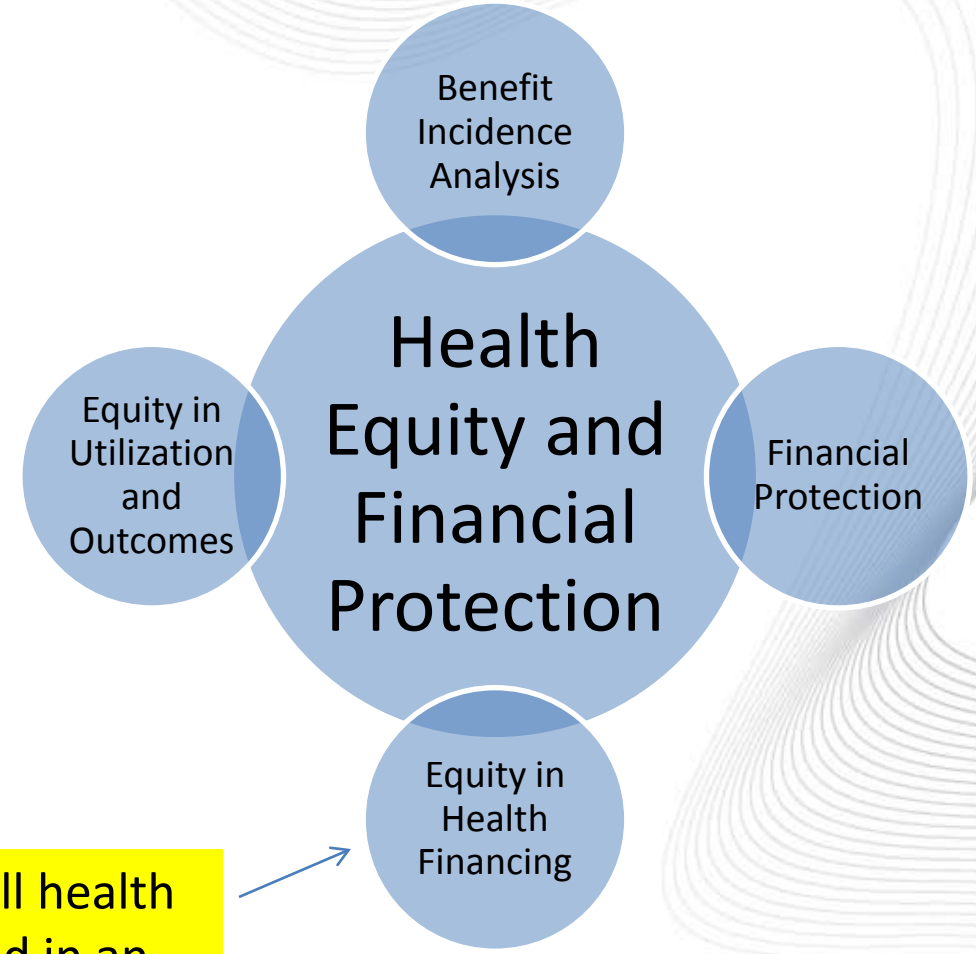


Are people protected from catastrophic and/or impoverishing out-of-pocket health spending?

Out-of-pocket payments can push households below the poverty line



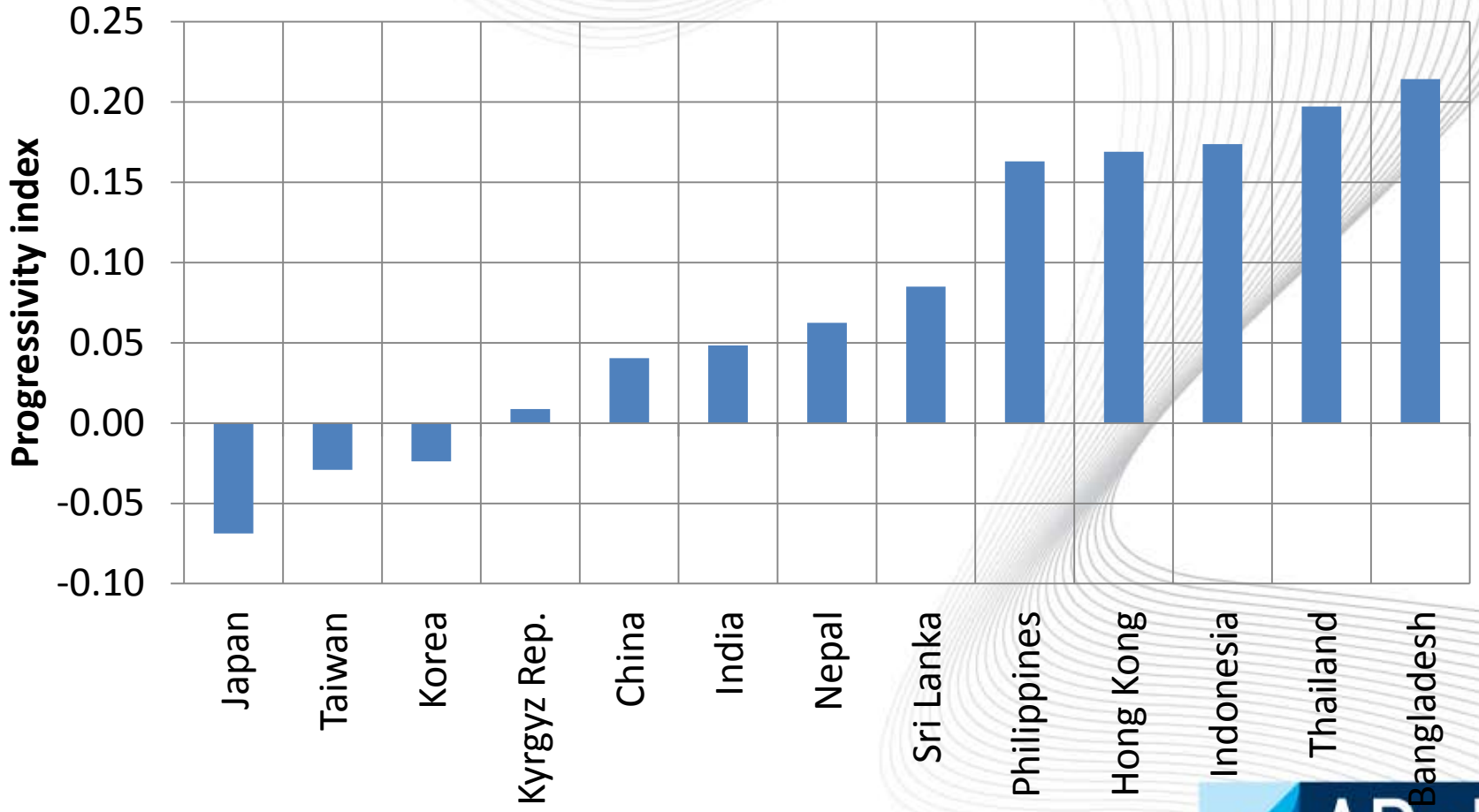
The elements of a monitoring strategy for health equity and financial protection



Is GHE (and overall health spending) financed in an equitable way?

ADePT

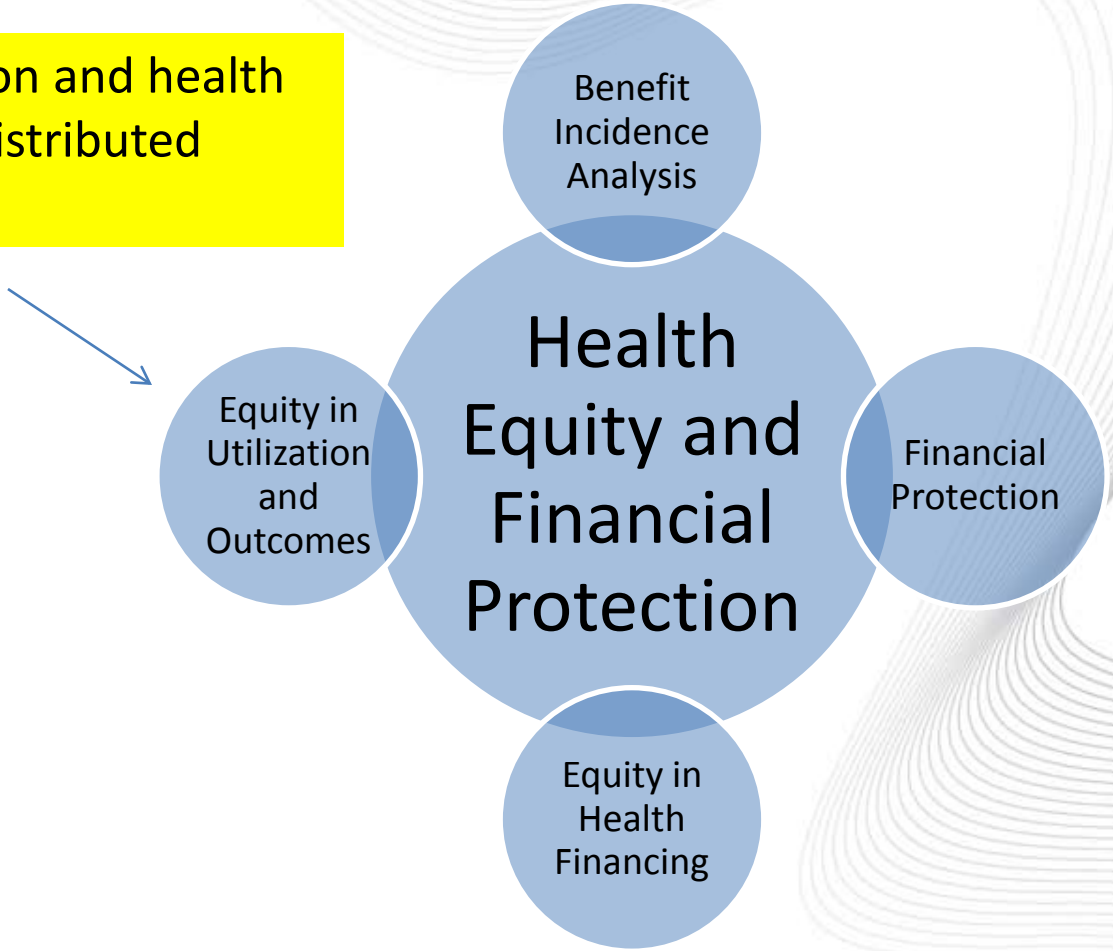
Health financing is more progressive in some countries than others



ADePT

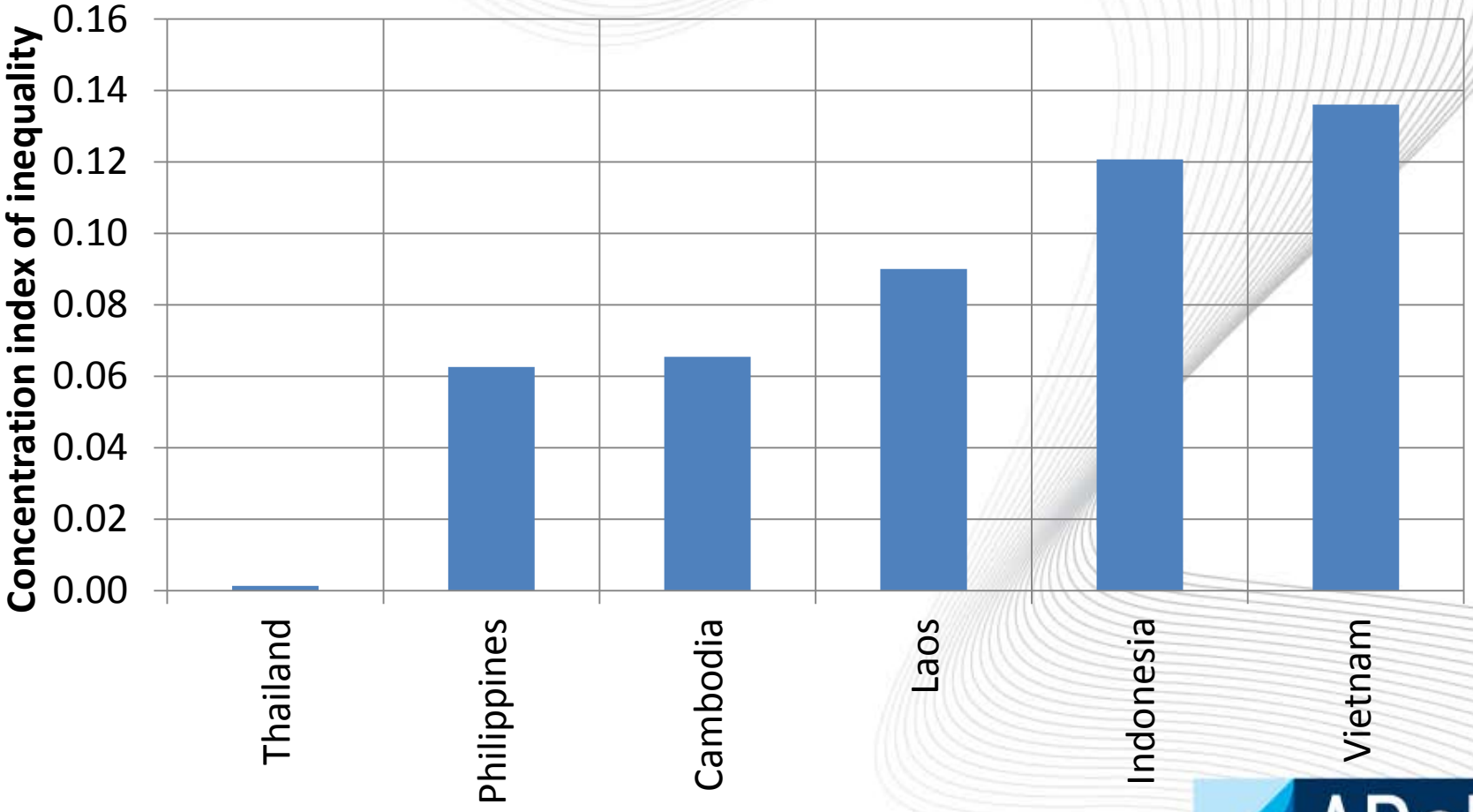
The elements of a monitoring strategy for health equity and financial protection

Are utilization and health outcomes distributed equitably?



ADePT

Immunization is more pro-rich in some countries than others



ADePT

The data we need – by topic

Topic	*What we do*	Household data needed	Other data needed
Who benefits from GHE? (Benefit Incidence Analysis)	*Comparison across income groups of benefits from GHE*	HH survey data with utilization of different providers	NHA data on unit subsidies for each type of provider
Financial Protection	*Incidence of catastrophic / impoverishing out-of-pocket spending*	HH survey data showing out-of-pocket spending, and overall household consumption (on everything)	Poverty line so we can compute impoverishment
Equity in Financing of GHE	*Comparison across income groups of taxes and nontax payments used to finance GHE*	HH survey data that can yield estimates of different taxes and other financing sources	NHA data showing how much revenue comes from each financing source
Equity in utilization and health outcomes	*Comparison across income groups of utilization and of health outcomes*	HH survey data with utilization and health outcomes	

Getting the data ready

- The necessary household, NHA and poverty line data need to be prepared carefully before analysis
- This takes time and know-how!

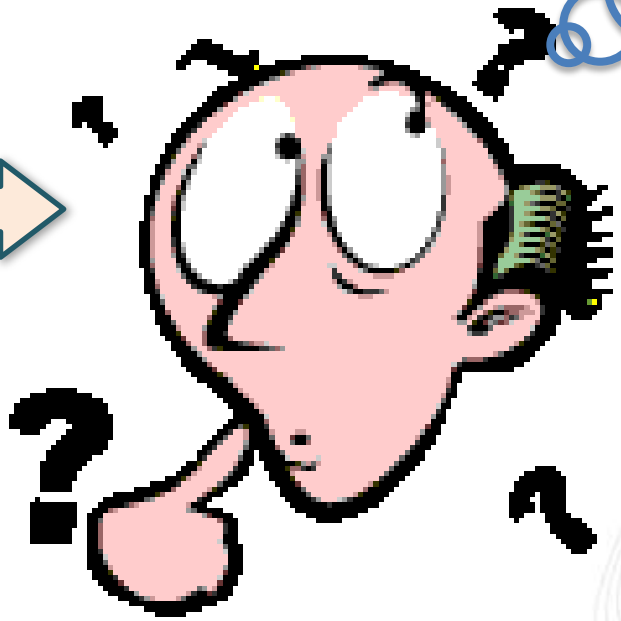
We also need methods and software

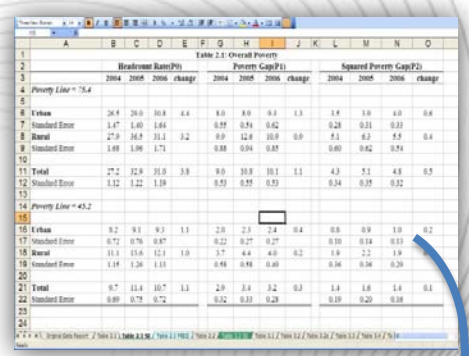
- The methods we use are drawn from the economics literatures on income inequality and income redistribution
  - They've been adapted to the health sector
- The software we use is ADePT – developed by the World Bank's Development Research Group (DECRG)
  - The software includes two health modules

ADePT

Why *ADePT* ?

User micro-level data:
DHS, LSMS, LFS, …



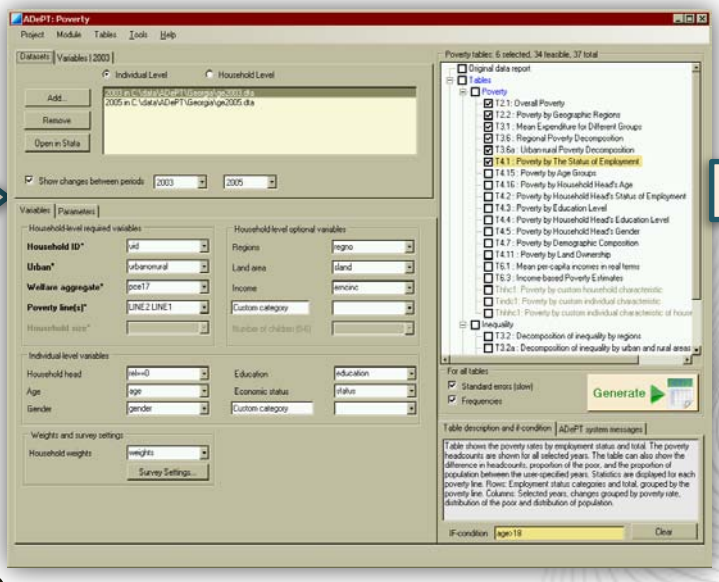


ADePT

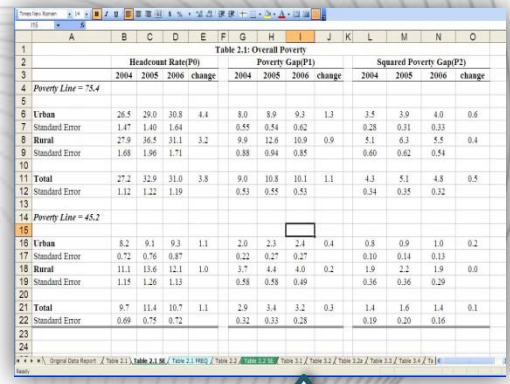
Why *ADePT* ?

User micro-level data:
DHS, LSMS, LFS, …

ADePT

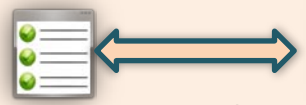


Print-ready output



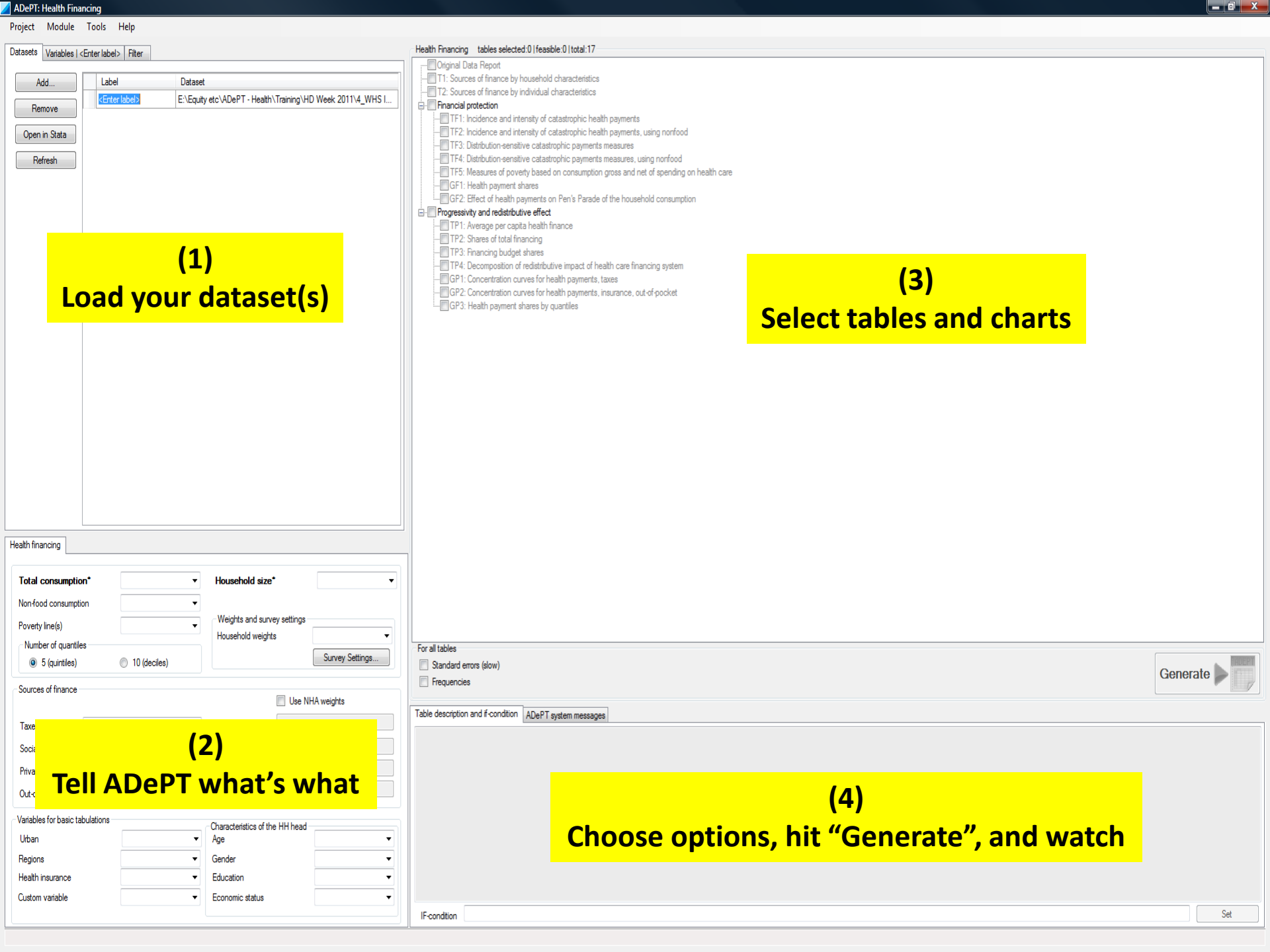
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1									Table 2.1: Overall Poverty						
2			Headcount Rate(P0)					Poverty Gap(P1)					Squared Poverty Gap(P2)		
3		2004	2005	2006	change		2004	2005	2006	change		2004	2005	2006	change
4	*Poverty Line = 75.4*														
5															
6	**Urban**	26.5	29.0	30.8	4.4		8.0	8.9	9.3	1.3		3.5	3.9	4.0	0.6
7	Standard Error	1.47	1.40	1.64			0.55	0.54	0.62			0.28	0.31	0.33	
8	**Rural**	27.9	36.5	31.1	3.2		9.9	12.6	10.9	0.9		5.1	6.3	5.5	0.4
9	Standard Error	1.68	1.96	1.71			0.88	0.94	0.85			0.60	0.62	0.54	
10															
11	**Total**	27.2	32.9	31.0	3.8		9.0	10.8	10.1	1.1		4.3	5.1	4.8	0.5
12	Standard Error	1.12	1.22	1.19			0.53	0.55	0.53			0.34	0.35	0.32	
13															
14	*Poverty Line = 45.2*														
15															
16	**Urban**	8.2	9.1	9.3	1.1		2.0	2.3	2.4	0.4		0.8	0.9	1.0	0.2
17	Standard Error	0.72	0.76	0.87			0.22	0.27	0.27			0.10	0.14	0.13	
18	**Rural**	11.1	13.6	12.1	1.0		3.7	4.4	4.0	0.2		1.9	2.2	1.9	0.0
19	Standard Error	1.15	1.26	1.13			0.58	0.58	0.49			0.36	0.36	0.29	
20															
21	**Total**	9.7	11.4	10.7	1.1		2.9	3.4	3.2	0.3		1.4	1.6	1.4	0.1
22	Standard Error	0.69	0.75	0.72			0.32	0.33	0.28			0.19	0.20	0.16	
23															
24															

Inside ADePT



User interface — **Computational kernel (Stata)**

ADePT


ADePT: Health Financing
Project
Module
Tools
Help
Datasets
Variables | <Enter label>
Filter
Add...
Remove
Open in Stata
Refresh
Label
Dataset
<Enter label>
E:\Equity etc\ADePT - Health\Training\HD Week 2011\4_WHS I...
(1)
Load your dataset(s)
Health Financing
tables selected:0 | feasible:0 | total:17
Original Data Report
T1: Sources of finance by household characteristics
T2: Sources of finance by individual characteristics
Financial protection
TF1: Incidence and intensity of catastrophic health payments
TF2: Incidence and intensity of catastrophic health payments, using nonfood
TF3: Distribution-sensitive catastrophic payments measures
TF4: Distribution-sensitive catastrophic payments measures, using nonfood
TF5: Measures of poverty based on consumption gross and net of spending on health care
GF1: Health payment shares
GF2: Effect of health payments on Pen's Parade of the household consumption
Progressivity and redistributive effect
TP1: Average per capita health finance
TP2: Shares of total financing
TP3: Financing budget shares
TP4: Decomposition of redistributive impact of health care financing system
GP1: Concentration curves for health payments, taxes
GP2: Concentration curves for health payments, insurance, out-of-pocket
GP3: Health payment shares by quantiles
(3)
Select tables and charts
Health financing
Total consumption*
Household size*
Non-food consumption
Poverty line(s)
Weights and survey settings
Household weights
Survey Settings...
Number of quantiles
5 (quintiles)
10 (deciles)
Sources of finance
Use NHA weights
(2)
Tell ADePT what's what
Variables for basic tabulations
Urban
Regions
Health insurance
Custom variable
Characteristics of the HH head
Age
Gender
Education
Economic status
For all tables
Standard errors (slow)
Frequencies
Generate
Table description and if-condition
ADePT system messages
(4)
Choose options, hit "Generate", and watch
IF-condition
Set

The benefits of ADePT

- ADePT is free!
- ADePT automates the production of standard tables and charts
- No need to write commands in Stata or SPSS to produce the tables and charts
- No need to have Stata on your computer!
- ADePT minimizes human errors in programming – even skilled Stata users make mistakes!
- ADePT ensures comparability of results across countries/years, in a standardized format – we're comparing apples and apples!
- ADePT frees up resources for data-preparation, interpretation of results, and thinking about policy implications – the hard jobs!

ADePT

What topics ADePT covers

- Inequalities and inequities in health and health care utilization
  - Measurement
  - Explanation
- Benefit incidence
  - Who benefits (most) from government health spending?
- Financial protection
  - Catastrophic spending
  - Impoverishing spending
- Equity in health financing
  - Progressivity
  - Redistributive effect and horizontal equity

ADePT

ADePT training modules

Module	Topic	Basics: theory and application		Advanced: theory and application	
1	Inequalities and inequities in health and health care utilization	1a) Concentration index and curve	Demo: Zambia Participant: multiple DHS's to choose from	1b) Decomposition, standardization, and inequity	Demo: India and participant: India WHS
2	Benefit incidence	2a) Basic BIA using constant unit subsidy assumption	Demo and participant: Vietnam	2b) Benefit incidence using other assumptions	Demo and participant: Vietnam
3	Financial protection	3a) Catastrophic payment incidence, impoverishment (headcount and poverty gap)	Demo: Kenya Participant: multiple WHS's to choose from	3b) Distribution-sensitive measures of catastrophic payment incidence	Demo: Kenya Participant: multiple WHS's to choose from
4	Equity in health financing	4a) Progressivity	Demo and participant: Egypt		

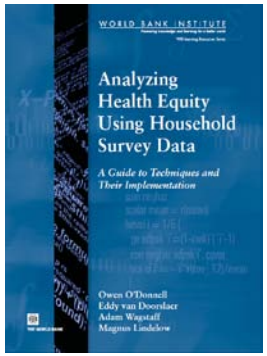
ADePT

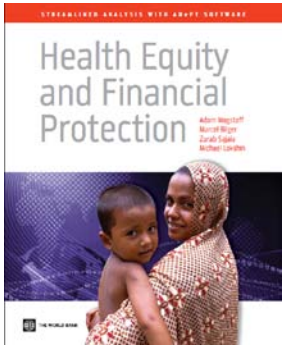
Keep ADePT updated!

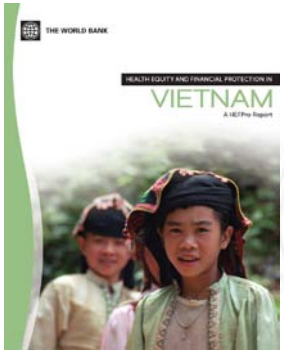
Website: www.worldbank.org/adept

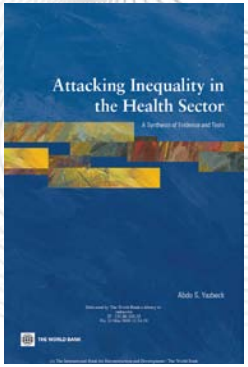
Related materials

- Software downloadable
- Online video tutorials
- Manual on methods: Analyzing Health Equity Using Household Survey Data
- Training events
- ADePT – Health Manual Health Equity and Financial Protection*
- Health Equity & Financial Protection (HEFPro) reports (ongoing)
- Book Attacking Inequality in the Health Sector









* Widget – Order hard copies