Output-based Contracting for Health Service Delivery in Uganda

Public-Private Partnership Office, Uganda Ministry of Health

Institute of Public Health, Makerere University

CIDA / USAID (PHRplus) / World Bank

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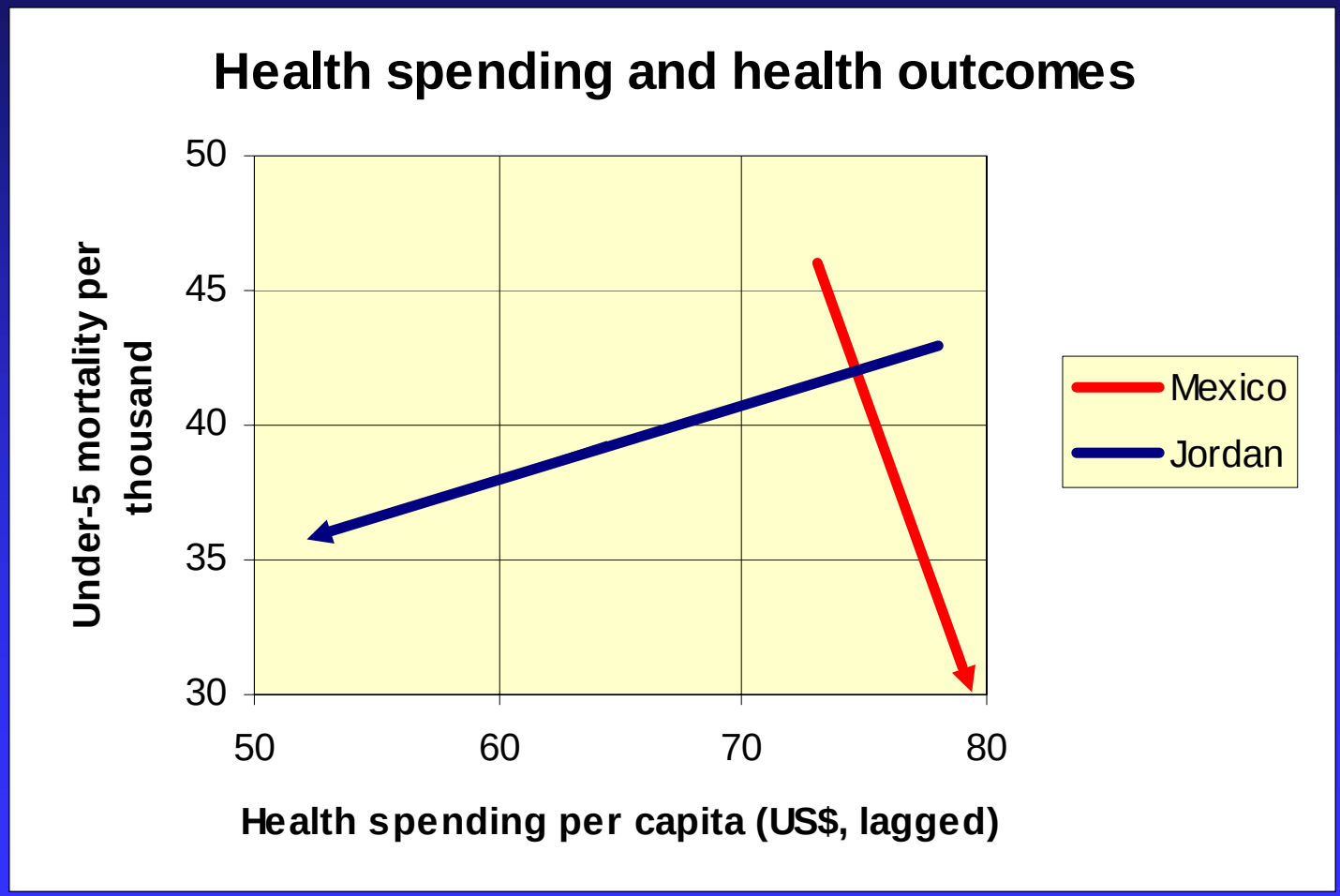
Outline of presentation

- Background
- Contracting in health care
- Agency and information
- Experimental design, method and sample
- Results
- Conclusions
- Next steps

1.1. Ministry of Health's problem

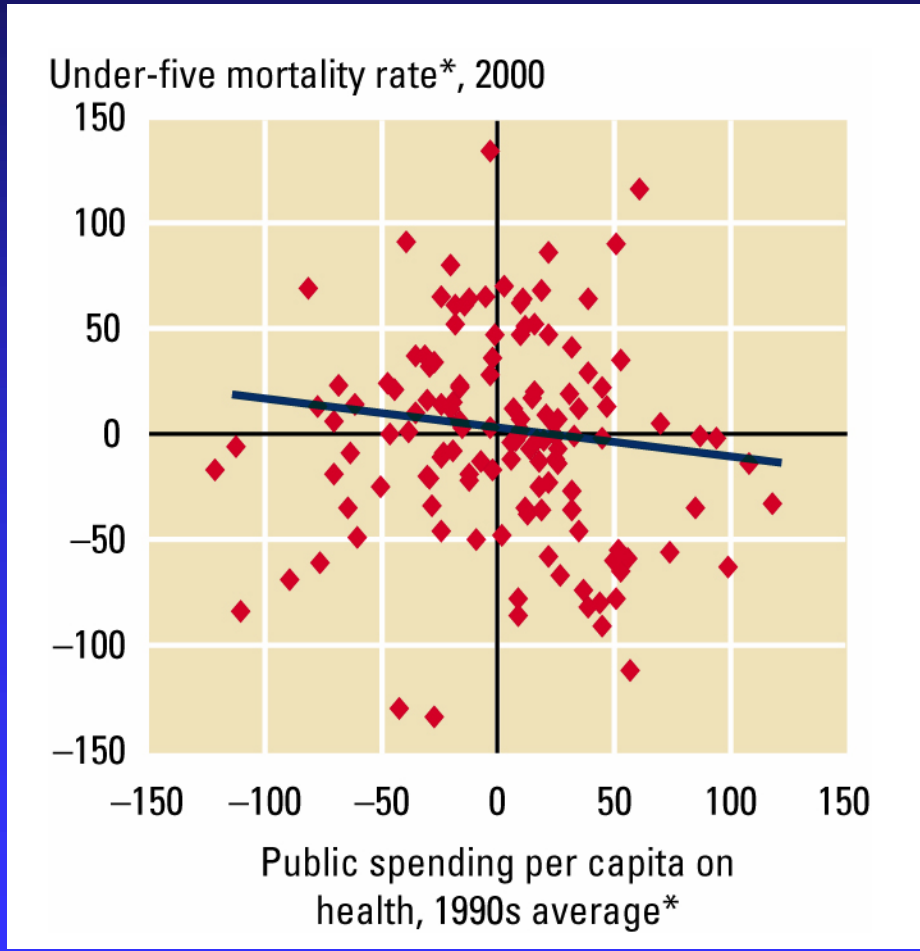
- Government of Uganda has public health goals, but a limited budget.
- What's the best way to spend public resources, to achieve the greatest coverage of the right services to the right population?
- More money may be necessary, but it is not sufficient, to reach goals.

More money is not enough



Source: adapted from WDR 2004

More money is not enough



Source: WDR 2004

1.2. Health status in Uganda

- High infant and maternal mortality
- Success with HIV/AIDS prevalence
- But TB and Malaria increasing; low cure rate, drug resistance
- Widespread antenatal care, but few attended births
- Inequalities among regions and income class

1.3. Health care provision

- Private not-for-profit (PNFP) sector are 1/3 of facilities, provide half of curative care.
- Decentralization – budget transfer from central government; increased autonomy for districts.
- Private financing 60 percent of total.
- User fees eliminated in public facilities:
  - consumption of public *and* pnfp health services has increased;
  - oop expenditures decreased among poor, increased among wealthy.

1.4. Contracting in Uganda

- Three main Medical Bureaux provide primary services under a “Memorandum of Understanding” with MoH
- PNFPs provide better quality services, targeted to poor, more efficiently than public (Reinikka and Svensson 2002)
- Majority of PNFP revenue from MoH base grant, also private donations, user fees.
- PHC grant restricted

2.1. Experience with supply-side contracting for health services

- Extensive experience of contracting non-clinical services (see eg Broomberg and Mills 1998).
- Less (though increasing) experience with clinical services (see eg Liu et al. 2004).
- Little rigorous evaluation

2.2. Selected evaluations

- **Contracting out**
  - Before & after comparison: Guatemala (Nieves and La Forgia 2000); India (Loevinsohn and Harding 2004); Madagascar (Marek et al. 1999)
  - With / without comparison: Bangladesh (Loevinsohn 2002); Bolivia (Lavadenz et al. 2001)
- **Performance pay**
  - Before & after comparison: Haiti (Eichler et al. 2002)
  - With / without comparison: Cambodia (Loevinsohn et al. 2001)

3.1. Agency and information

- Providers, patients, and governments all have different information and different goals.
- Principal-agent model:
  - **Principals** – ie, those for whom services are produced
    - Government and clients
  - **Agents** – ie, those who produce the services
    - Physicians, nurses, other providers

3.2. Agency and information

- How can principals influence agents?
  - Government
    - Rewards
    - Sanctions
    - Supervision
  - Clients
    - Exit
    - Voice

4.1. Experimental design

Addendum to the MoU

- Six performance targets, of which the facility can choose three:
  - Increase opd by 10%
  - Increase attended births by 5%
  - Increase number of children immunized by 10%
  - Increase modern family planning use by 5%
  - Increase number of antenatal visits by 10%
  - Increase treatment of malaria among children by 10%

4.2. Experimental design

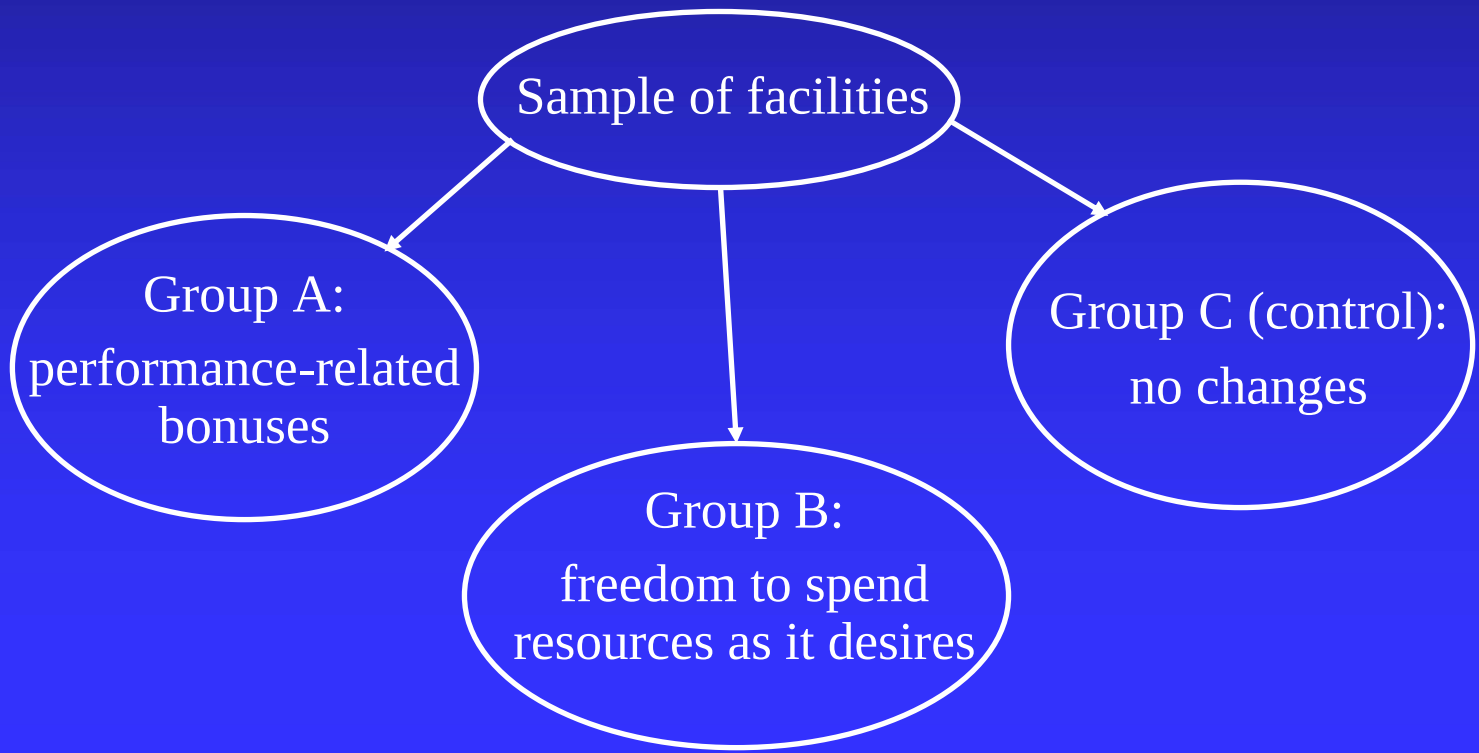
Addendum to the MoU

- Performance bonus payments:
  - 1% of base grant for each target met in each 6-month period
  - 1% of base grant for each target met by end of year
  - 1% if two targets are met by end of year
  - 1% if three targets are met by end of year
  - Total possible bonus payments for the year =

    11% (3+3+3+1+1)

4.3. Experimental design

- Random assignment of facilities to cells



4.4. Sample

- Five districts in first wave of decentralization
- Stratified by region and administrative capacity
  - High: Jinja
  - Moderate: Arua, Bushenyi, Kyenjojo
  - Low: Mukono
- Twice-yearly surveys (Facility, Staff, Exit poll, HH)


0 50 100 km
0 50 100 mi
SUDAN
Arua
Arua
Albert Nile
Gulu
Moroto
DEM. REP. OF THE CONGO
Victoria Nile
Lira
Lake Kwania
Soroti
Lake Kyoga
Lake Albert
Mbale
Victoria Nile
Fort Portal
Jinja
Kyenjojo
KAMPALA
Port Bell
Jinja
KENYA
Margherita Peak
Equator
Entebbe
Mukono
Lake George
Masaka
Lake Edward
Mbarara
Lake Victoria
Bushenyi
TANZANIA
RWANDA

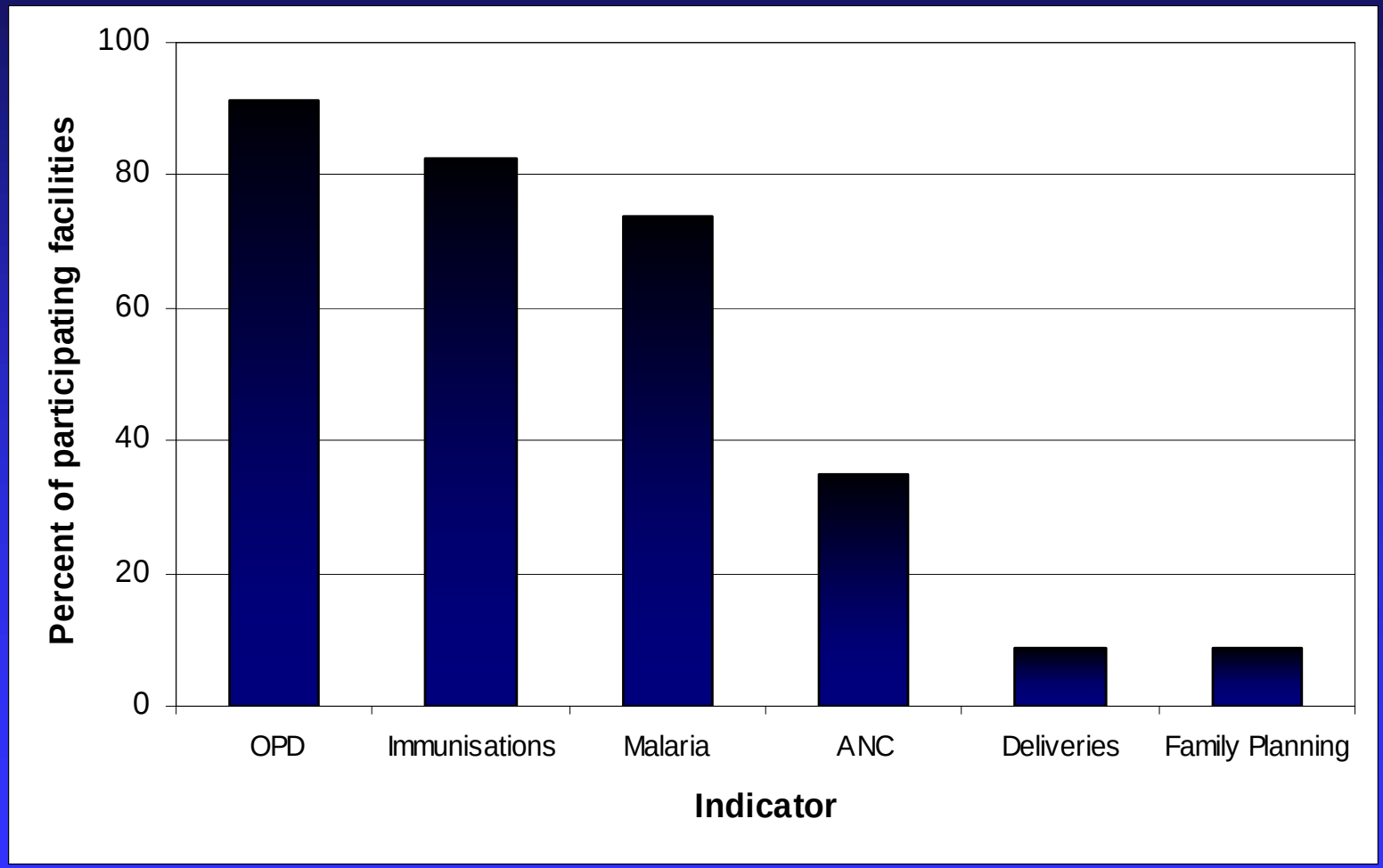
4.5. Sample

- Random assignment of facilities:
  - 22 PNFP facilities in group A (performance bonus)
  - 23 PNFP facilities in group B (freedom to allocate)
  - 23 PNFP facilities in group C (control group)
  - 26 Private for-profit facilities (in control group)
  - 26 Public facilities (in control group)

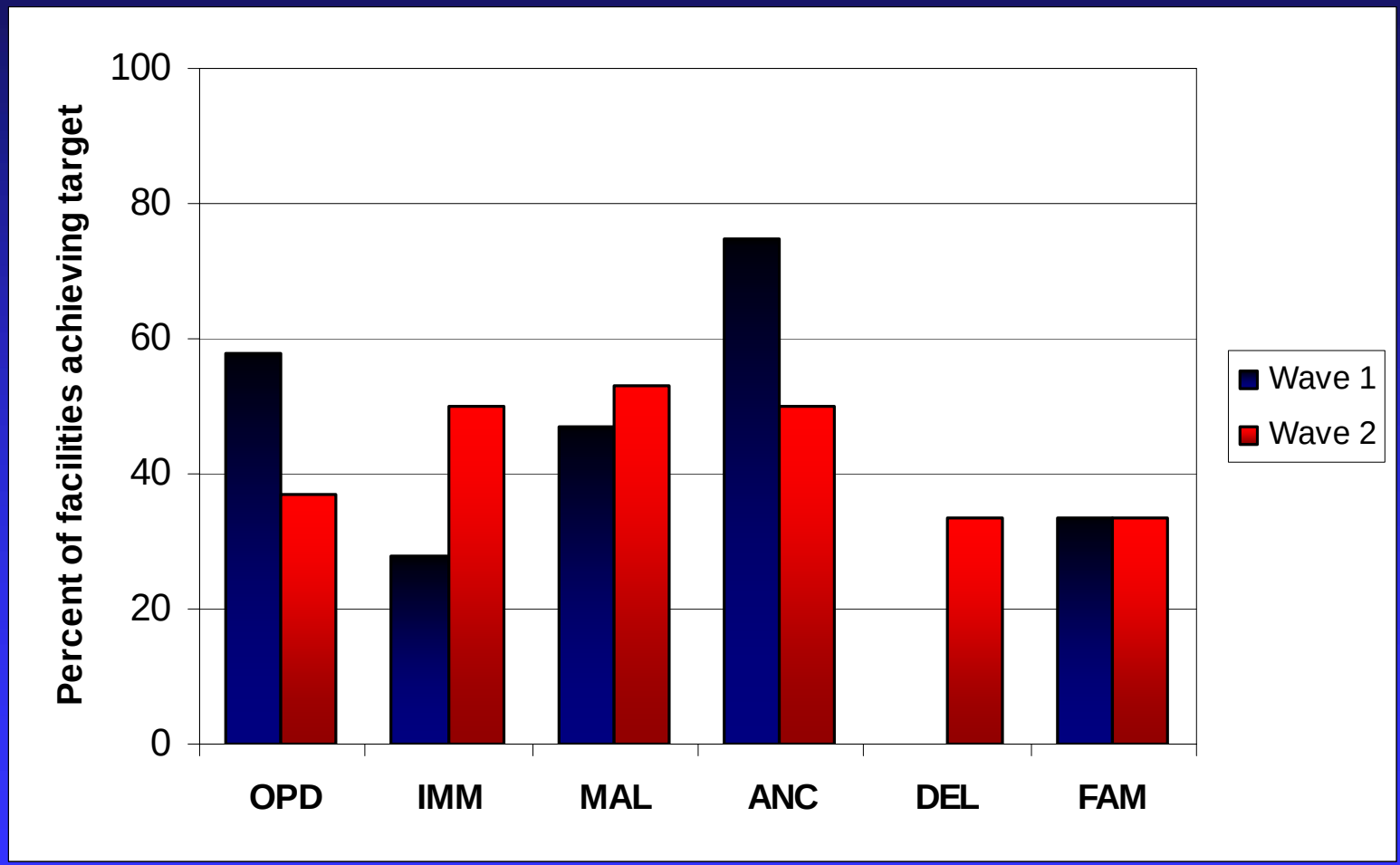
4.5. Sample

- Three rounds, including retrospective data from facilities
  - Panels:
    - 118 facility surveys (two dropped)
    - ~1200 household surveys from hh in catchment areas
  - Repeated cross-sections:
    - ~1400 exit interviews
    - ~1000 staff interviews

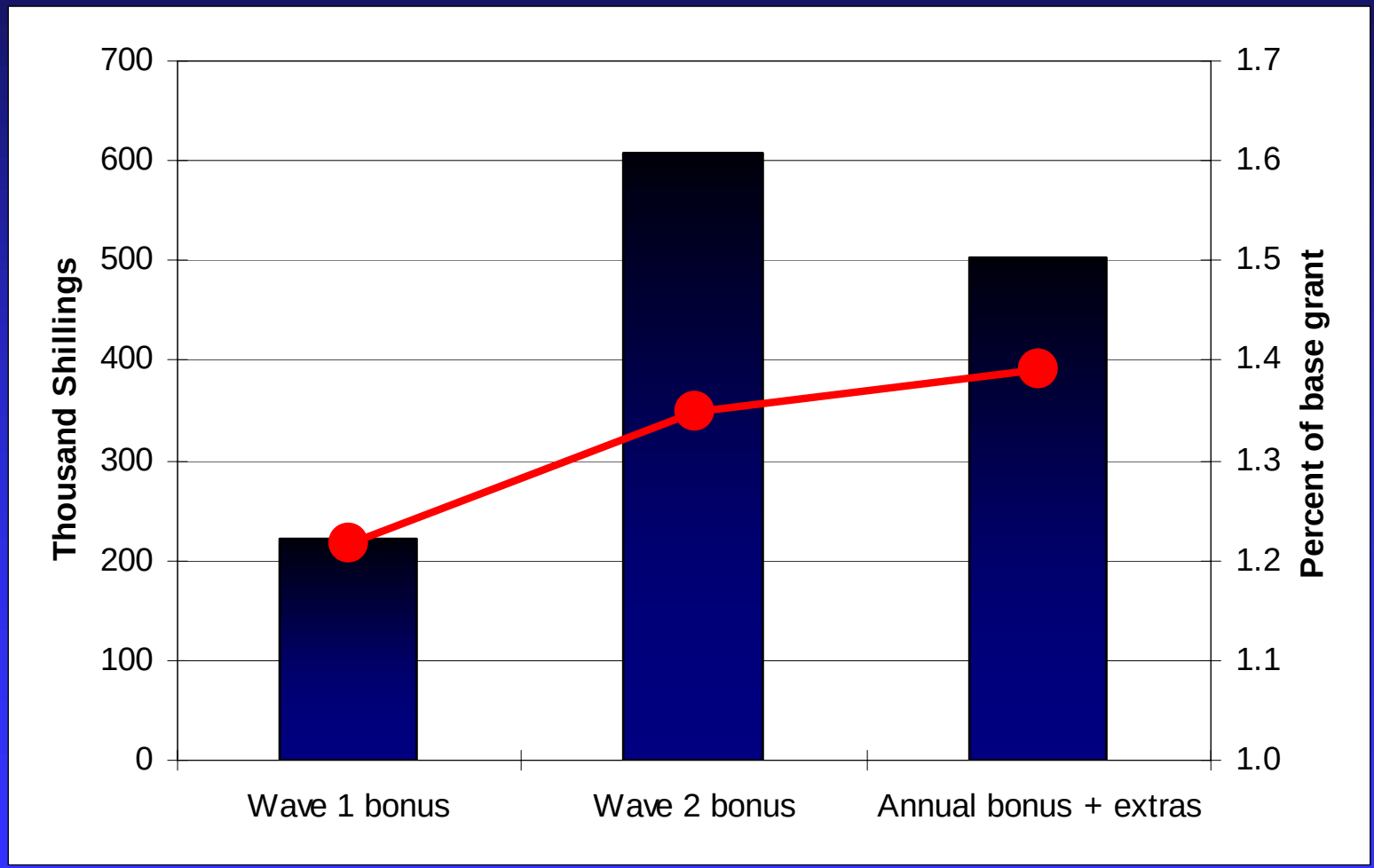
4.6. Performance criteria



5.1. Results: targets reached



5.2. Results: average bonus paid



5.3.1. D-in-D tests, group A

Difference-in-difference regressions, year-on-year changes, group A facilities choosing targets

	All other facilities	All other PNFPs	PNFP control group	PNFP freedom-to-allocate	Bonus group facilities w/o target
(1) Outpatient consultations	-0.197	-0.304	-0.274	-0.334	-0.327
	(0.388)	(0.363)	(0.348)	(0.350)	(0.290)
(2) Immunizations for children under one	0.150	0.207	0.188	0.245	0.210
	(0.367)	(0.381)	(0.419)	(0.382)	(0.467)
(3) Malaria treatment for children under five	-0.181	-0.191	-0.057	-0.280	-0.081
	(0.368)	(0.372)	(0.342)	(0.377)	(0.296)
(4) Consultations for family planning	0.250	0.309	0.652	0.001	0.706
	(0.500)	(0.557)	(0.563)	(0.665)	(0.876)
(5) Supervised deliveries	0.466	0.364	0.548	0.094	0.198
	(0.633)	(0.763)	(0.850)	(0.739)	(0.975)
(6) Visits for antenatal care	-0.256	-0.195	-0.342	-0.197	-0.641
	(0.734)	(0.776)	(0.845)	(0.822)	(1.061)
(7) Women receiving antenatal care	**-0.914**	-0.765	-0.713	-0.833	-0.736
	(0.512)+	-0.566	-0.622	-0.546	-0.642

5.3.2. D-in-D tests, group A

Summary: difference-in-difference regressions, year-on-year changes, all group A facilities

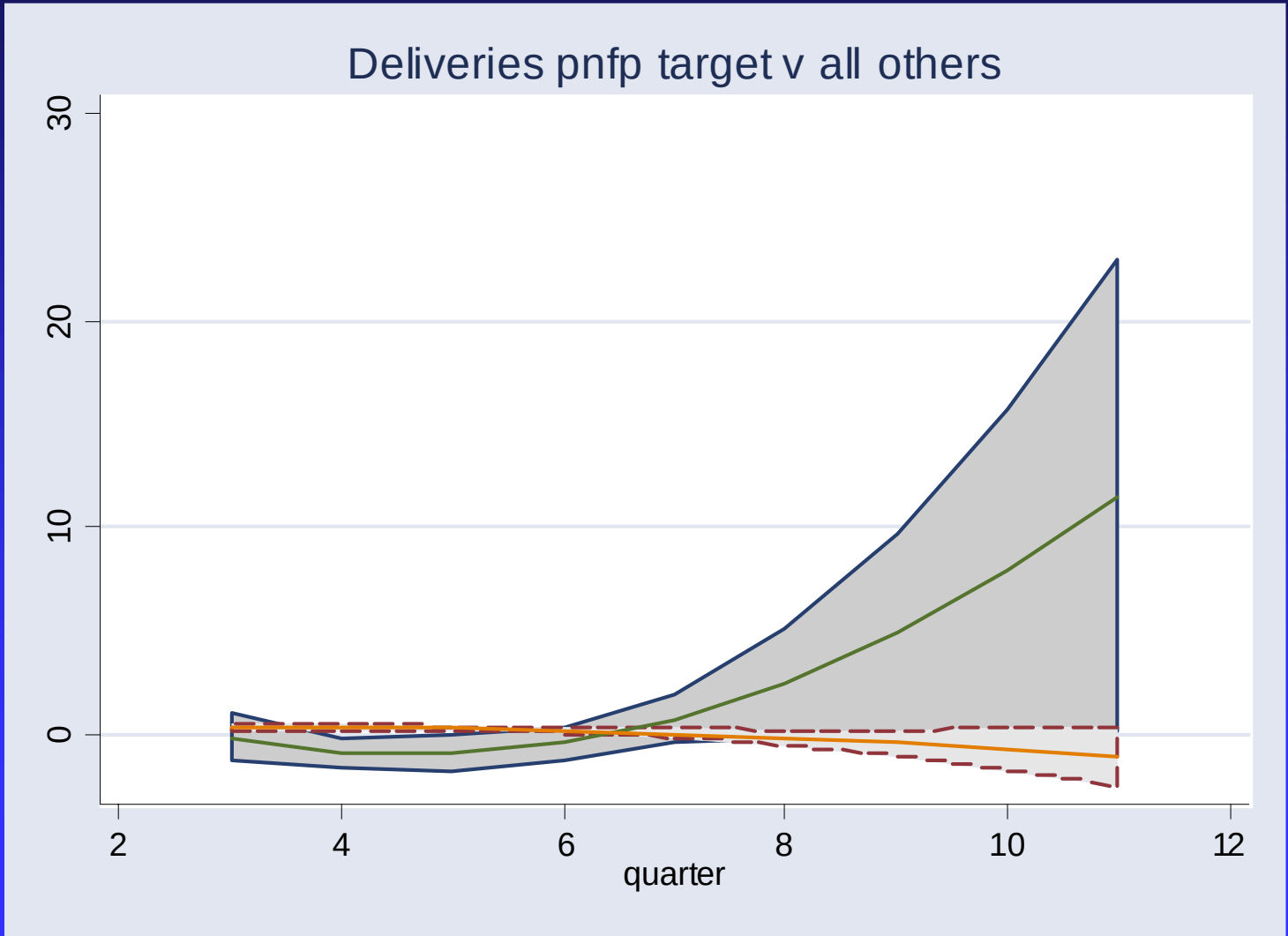
	All other facilities	All other PNFPs	PNFP control group	PNFP freedom-to-allocate
(1) Outpatient consultations	0.069	-0.049	0.027	-0.128
	(0.191)	(0.193)	(0.205)	(0.214)
(2) Immunizations for children under one	-0.020	0.049	0.071	0.080
	(0.202)	(0.222)	(0.270)	(0.253)
(3) Malaria treatment for children under five	-0.110	-0.178	0.018	**-0.398**
	(0.183)	(0.199)	(0.202)	**(0.229)+**
(4) Consultations for family planning	-0.164	-0.113	0.154	-0.457
	(0.339)	(0.414)	(0.467)	(0.550)
(5) Supervised deliveries	0.379	0.297	0.576	-0.064
	(0.313)	(0.400)	(0.482)	(0.439)
(6) Visits for antenatal care	0.162	0.404	0.268	0.500
	(0.382)	(0.433)	(0.543)	(0.503)
(7) Women receiving antenatal care	**-0.409**	-0.247	-0.159	-0.310
	(0.242)+	(0.288)	(0.358)	(0.314)

5.3.3. D-in-D tests, group B

Summary: difference-in-difference regressions, year-on-year changes

	All other facilities	All other PNFPs	PNFP control group
(1) Outpatient consultations	0.226	0.143	0.149
	(0.197)	(0.196)	(0.241)
(2) Immunizations for children under one	-0.116	-0.052	-0.035
	(0.199)	(0.220)	(0.236)
(3) Malaria treatment for children under five	**0.384**	**0.408**	**0.413**
	(0.181)*	**(0.197)***	**(0.240)+**
(4) Consultations for family planning	0.434	0.620	**0.782**
	(0.351)	(0.420)	**(0.424)+**
(5) Supervised deliveries	**0.499**	0.440	**0.654**
	(0.275)+	(0.362)	**(0.367)+**
(6) Visits for antenatal care	-0.453	-0.364	-0.226
	(0.352)	(0.411)	(0.437)
(7) Women receiving antenatal care	-0.030	0.232	0.167
	(0.220)	(0.269)	(0.297)

5.4. A learning curve?



5.5. User fees across facility type

How much did you pay today?

	Item		
Facility type	**Fees**	**Gifts**	**Medicines**
PNFP	2611.11	6.27	376.79
Public	300.68	5.33	59.95
Private	3315.00	99.02	330.71
Total	1949.12	13.89	274.22

5.5. User fees across facility type

Share reporting non-zero fees

	Exit poll	Household survey	Bootstrapped z-statistic of differences	
PNFP facilities				
Paying fees	0.65	0.71	(0.95)	
Purchasing medicines	0.20	0.59	(7.32)	**
Giving gifts to providers	0.00	0.07	(1.47)	
Total	0.66	0.88	(5.00)	**
Public facilities				
Paying fees	0.10	0.39	(3.42)	**
Purchasing medicines	0.04	0.41	(5.18)	**
Giving gifts to providers	0.00	0.08	(2.47)	*
Total	0.10	0.62	(6.22)	**
Private for-profit facilities				
Paying fees	0.55	0.84	(3.47)	**
Purchasing medicines	0.08	0.81	(7.80)	**
Giving gifts to providers	0.01	0.02	(0.21)	
Total	0.58	0.93	(4.80)	**

5.6. Other results from exit polls

- Performance-bonus PNFP facilities treating wealthier clients.
- Waiting time reduced among freedom-to-allocate PNFP facilities.

- Shorter perceived (but not actual) waiting time among “yellow star” facilities.
- Prices higher among yellow star facilities.

6. Conclusions

- This performance bonus didn't work.
  - Amounts not large enough?
  - Not enough time?

  → Money may not be the constraint.

- Facilities potentially allocate budgets more effectively than the Ministry of Health.

  → Remove restrictions on base grant.

7. Next steps

- Increase the bonus payment?
- Provide assistance with record-keeping?
- Include the public sector in the experiment?
- Dynamic impact evaluation?