The Political Economy of Public Sector Absence

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Research Objective

- Health worker absence is a serious and intractable problem in Punjab, as in many other countries (Banerjee, Glennerster, Duflo, 2008).
 - Public health facilities receive 87.9M patient visits a year (Punjab Development Statistics 2010)
 - But doctors are rarely there...(68.5% absence among doctors at baseline)

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 - Government jobs (with few work requirements) represent a common means of patronage.
 - \rightarrow Do sinecures as patronage explain the intractability of worker absence?

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- Mobilizing information can improve monitoring and decisionmaking

This Project

- In collaboration with the Government of Punjab, implement a smartphone-based innovation to increase health facility inspections in 18 of the 36 districts in Punjab.
- The experimental sample covers 445 distinct electoral constituencies. Does the success of the monitoring innovation depend on local political conditions?

Very Preliminary Results

In collaboration with the Punjab Department of Health, we have randomly assigned 18 of districts to a new smartphone monitoring and health data collection program. We find:

- 1. After two months of operation, treatment increased facilities reporting inspections from 23.4% to about 53%.
- 2. Effects are localized to districts not controlled by the ruling party.
- 3. Effects are localized to electorally competitive districts.

Punjab Department of Health (simplified)



Predictions

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Monitoring should be less effective when...

- 1. the local parliamentarian belongs to the ruling party
- 2. the local parliamentarian wins by large margins

Program

- A new smartphone-based health data system with several advantages
 - **Real-time data** on utilization, attendance, and access
 - Data are instantly and clearly summarized to provide a basis for action
 - Smartphone-based performa requires EDOs, DOs, and DDOs to make their visits (time stamps, geo stamps, pictures)

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 - Smartphone-based performa requires EDOs, DOs, and DDOs to make their visits (time stamps, geo stamps, pictures)
- Smartphones provided to 92 health officers in 18 districts
- Program went live in all provinces mid-March 2012

Health Department, Government of Punjab Compliance Status Facility Status Recent Visits Indicators Time Trend Charts Photo Verification Мар Change Password

Print You are currently viewing PUNJAB (Please click to change view)

Officer Compliance Report

Officers are required to make the assigned number of visits to facilities in each calendar month. If the number of facilities is less than the assigned number of visits, the officer should repeat visits to some facilities to complete the quota of visits. View Detailed Report

100 BHU RHC THQ 75 DHQ 50 25 0 ROCH OF THE CONTROL O

Compliance - Last Month (by facility type)



Logout

	District Facility Level	Facility Count	Monthly Visits Assigned	Visits Performed (Current Month)		Visits Performed (Last Month)				
					Unique	Total	Unique	Total	Compliance	
•	Attock	Total	73	209	3	3	89	188	89.95 %	Entries
•	Bahawalpur	Total	87	213	4	4	29	187	85.92 %	Entries
•	Bhakkar	Total	47	139	0	0	6	123	88.49 %	Entries
•	Chiniot	Total	42	139	3	3	69	138	97.12 %	Entries
•	D.G. Khan	Total	62	149	1	1	24	36	24.16 %	Entries
•	Faisalabad	Total	185	219	3	3	38	192	87.67 %	Entries
Đ	Gujrat	Total	101	149	1	1	25	190	100 %	Entries
•	Hafizabad	Total	39	75	3	3	44	70	93.33 %	Entries
•	Jhang	Total	70	151	1	1	102	118	78.15 %	Entries
Đ	Kasur	Total	99	191	4	4	22	123	64.4 %	Entries
•	Khanewal	Total	90	143	2	2	31	31	21.68 %	Entries
•	Lahore	Total	44	139	1	1	3	42	28.78 %	Entries
•	Mianwali	Total	53	133	0	0	54	70	51.88 %	Entries
•	Multan	Total	89	176	0	0	2	76	43.18 %	Entries
•	Muzaffargarh	Total	87	189	1	2	40	223	99.47 %	Entries
•	Narowal	Total	66	117	1	1	17	98	82.91 %	Entries
•	Pakpattan	Total	59	109	2	2	2	18	16.51 %	Entries
•	Rawalpindi	Total	112	183	1	1	147	172	93.99 %	Entries
+	Vehari	Total	91	155	0	0	79	102	65.81 %	Entries



Recent Facility Visits

Visits highlighted indicate significant staff absence.

BHU RHC	THQ DHQ						
(Filter by Period) Clear Filter) Showing all entries							
			Go to page:	< Previous	Displaying 1-30 of 7	34 result(s).	
Facility	Tehsil	Visiting Officer	Date	мо	Other Absent Staff	Report Summary	
		•		•			
BHU KANI	JAND	DDO Jand	2012-07-11	Absent	LHV, SHNS,		
BHU BHANGAI	HAZRO	DDO Hazro	2012-07-11	Present	Computer operator,	~	
BHU HAJI SHAH	АТТОСК	DDO Attock/Hassanabdal	2012-07-11	Present			
BHU TRAP	JAND	DDO Jand	2012-07-11	Present	Dispenser, LHV, SHNS,		
BHU DHURNAL	FATEH JANG	DDO Fateh Jang	2012-07-11	Present	Computer operator,	~	
BHU DAKHNAIR	ATTOCK	DDO Attock/Hassanabdal	2012-07-11	Present		~	
BHU SOJANDA	АТТОСК	DDO Attock/Hassanabdal	2012-07-11	Position Not Filled	Dispenser,	\sim	
BHU SHAMSABAD	HAZRO	DDO Hazro	2012-07-11	Present	Computer operator,	~	



Project Timeline





Table: Verifying Balance

	Control	Treatment	Difference	P-value	# Treat	# Control
Prov. Swing District	0.044	0.066	0.022	0.335	182	243
-	0.206	0.249				
Nat. Swing District	0.027	0.045	0.018	0.341	182	243
	0.164	0.208				
PML-N District	0.385	0.407	0.023	0.636	182	243
	0.488	0.492				
Share of Assigned Staff Present	0.528	0.530	0.001	0.942	421	426
	0.281	0.287				
Log of polio vaccinations last month	4.433	4.554	0.120	0.422	306	324
	1.841	1.918				
MO knows local MPA $(=1)$	0.333	0.273	-0.061	0.306	90	176
	0.474	0.447				
Dispenser knows MPA $(=1)$	0.485	0.430	-0.055	0.155	330	344
	0.501	0.496				
Distance from Headquarter	49.178	49.662	0.484	0.817	421	399
	28.838	30.914				
MO time at BHU (months)	52.444	50.709	-1.736	0.827	90	175
	74.653	53.181				
MO distance to hometown	154.822	137.006	-17.817	0.648	90	176
	352.973	270.014				

Effect of Monitoring on Health Inspections





Does Political Competition Help?



Dependent Variable:	DDO Inspection During Previous Month (=1)						
	(1)	(2)	(3)	(3a)			
	OLS	OLS	Probit	$\partial y / \partial x$			
Treat × Post	0.283***	0.272***	0.783***	0.285***			
	(0.074)	(0.074)	(0.216)	(0.081)			
Treat $(=1)$	-0.020	-0.023	-0.093	-0.032			
	(0.057)	(0.056)	(0.180)	(0.062)			
Post (=1)	0.022	0.036	0.108	0.037			
	(0.053)	(0.052)	(0.169)	(0.057)			
Constant	0.234***	0.297***	-0.551**				
	(0.044)	(0.078)	(0.226)				
# Observations	1384	1384	1384	1384			
# Clusters	35	35	35	35			
R-Squared [Log-Likelihood]	0.074	0.132	-761.674				

Main Treatment Effects

Notes: Level of significance: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the district level reported in parentheses.

Dependent Variable:	DDO Inspection During Previous Month (=1)					
	(1)	(2)	(3)	(3a)		
	OLS	OLS	Probit	$\partial y / \partial x$		
Treat × Post $(\hat{\gamma}_2)$	0.330***	0.317***	0.889***	0.323***		
	(0.081)	(0.081)	(0.244)	(0.091)		
Treat x Post x Ruling Party $(\hat{\gamma}_3)$	-0.165	-0.179*	-0.311	-0.096		
	(0.098)	(0.099)	(0.369)	(0.102)		
Constant $(\hat{\gamma}_1)$	0.227***	0.279***	-0.602**			
	(0.044)	(0.081)	(0.237)			
P-value from test of $\gamma_2 = \gamma_3$	0.003	0.003	0.022			
P-value from test of $\gamma_2 + \gamma_3 = 0$	0.091	0.161	0.089			
Stratum FEs	No	Yes	Yes			
R-Squared [Log-Likelihood]	0.098	0.155	[-660.977]			
# Observations	1227	1227	1227	1227		
# Clusters	35	35	35	35		

Treatment Effect Heterogeneity by Ruling Party Control

Notes: Level of significance: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the district level reported in parentheses. All specifications include the complete set of interactions between *Treat*, *Post*, and *Ruling Party*. Victory Margin Share is defined as the difference in votes between the winner and runner-up divided by the total number of votes cast for those two candidates. Basic Health Units (BHUs) are spread across 227 of 445 provincial assembly districts in Punjab.

Dependent Variable:	DDO Inspection During Previous Month (=1)					
	(1)	(2)	(3)	(3a)		
	OLS	OLS	Probit	$\partial y / \partial x$		
Treat x Post $(\hat{\gamma}_2)$	0.395***	0.377***	1.058***	0.384***		
	(0.099)	(0.098)	(0.293)	(0.107)		
Treat x Post x Victory Margin Share $(\hat{\gamma}_3)$	-0.611	-0.599	-1.327	-0.450		
	(0.380)	(0.383)	(1.298)	(0.443)		
Constant $(\hat{\gamma}_1)$	0.234***	0.298***	-0.545**			
	(0.053)	(0.088)	(0.259)			
P-value from test of $\gamma_2 = \gamma_3$	0.030	0.036	0.106			
P-value from test of $\gamma_2 + \gamma_3 = 0$	0.520	0.516	0.818			
Stratum FEs	No	Yes	Yes			
R-Squared [Log-Likelihood]	0.092	0.155	[-660.175]			
# Observations	1227	1227	1227	1227		
# Clusters	35	35	35	35		

Treatment Effect Heterogeneity by 2008 Vote Share

Notes: Level of significance: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors clustered at the district level reported in parentheses. All specifications include the complete set of interactions between *Treat*, *Post*, and *Victory Margin Share*. Victory Margin Share is defined as the difference in votes between the winner and runner-up divided by the total number of votes cast for those two candidates. Basic Health Units (BHUs) are spread across 227 of 445 provincial assembly districts in Punjab.

Results



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Next Steps

- Continue quarterly surveys to examine health worker attendance
- Consider other applications:
 - Lady health supervisors
 - Livestock innoculation
 - Education
 - Monitoring mobile money agents
 - Police registration

Household surveys to examine health impacts

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Notes: Data are from 847 of the 850 Basic Health Units in the primary sample for which government data are also recorded.

(Very) preliminary evidence



	Primary Data	Government Data	Difference	t-test of: (1) - (2)
	(1)	(2)	(1) - (2)	(p-value)
Doctor Absent $(=1)$	0.685	0.635	0.050	0.005
	[0.465]	[0.482]	0.018	
Paramedic Staff Absent $(=1)$	0.208	0.100	0.107	0.000
	[0.406]	[0.301]	(0.016)	
# Basic Health Units	847	847		

Table: Health Worker Absence in Primary and Government Data

Notes: Standard deviations in brackets and standard errors reported in parentheses. Data are from 847 of the 850 Basic Health Units in the primary sample for which government data are also recorded. Doctors are Medical Officers (MOs). Paramedic staff are Medical Technicians (MTs), Health Technicians (HTs), and Dispensers.



Notes: Empirical densities estimated using a Gaussian Kernel. Data are from 847 of the 850 Basic Health Units in the primary sample for which government data are also recorded.