Building Credibility and Cooperation in Low-Trust Settings: Persuasion and Source Accountability in Liberia during the 2014-2015 Ebola Crisis

Online Appendix

Appendix 1 – Summary Statistics for Outcome Variables

Appendix Table 1: Summary statistics for outcome variables

	N	mean
Knowledge of Ebola		
Ebola can spread before symptoms?	1,552	60%
Drinking salt water can help?	1,549	9%
Ebola can spread through the air?	1,560	21%
# of known Ebola symptoms	1,572	3.21
# of known Ebola transmission pathways	1,572	2.79
Self-interested compliance		
Bucket for hand-washing outside home?	1,561	77%
Use hand sanitizer daily?	1,561	44%
Contentious compliance		
Support cremation of deceased suspected of Ebola?	1,543	19%
Support burials by health workers?	1,541	52%
Support ban on curfew?	1,543	68%
Support travel restrictions?	1,543	60%
Support ban on gatherings?	1,542	80%
Break curfew in past 2w?	1,572	11%
Violate ban on public gatherings past 2w?	1,572	23%
Attitudes toward government		
Government has heart to provide health care?	1,557	15%
Government has heart to provide security?	1,557	20%
Government has heart to provide education?	1,557	13%
Trust government?	1,557	24%
Trust MoH?	1,557	27%
Trust the police?	1,557	20%
Government is corrupt?	1,557	73%
MoH is corrupt?	1,557	68%
Police are corrupt?	1,557	76%
Government is capable of providing quality health care?	1,555	35%
Government is capable of providing quality education?	1,557	29%
Government is capable of providing quality security?	1,556	41%
Prefer government provide health care rather than NGOs?	1,557	50%
Prefer government provide education rather than NGOs?	1,557	63%
Prefer government provide security rather than NGOs?	1,557	77%
Support for everyday laws and regulations		
Support reporting suspected criminals to the police?	1,543	80%
Support Govt's right to evict squatters?	1,544	49%
Support Govt's right to force citizens to pay taxes?	1,544	72%
Willing to obey government even if you disagree?	1,557	46%
Key independent variables		
Government outreach	1,188	40%

Note: Observations vary due to either non-response or because questions were added partway through the survey when reports from our field staff suggested that community outreach may have played an important role in changing behavior within communities.

Appendix 2 – Full regression tables for main results

Full regression table for Table 3 in paper

	Knowledge about Ebola (std)		Bucket for hand-washing outside home?		Use hand sanitizer daily?		Support for contentious control policies	
Government outreach	0.05	0.06	0.04	0.04	0.10	0.10	0.15	0.15
	[0.01]***	[0.01]***	[0.03]	[0.03]	[0.03]***	[0.03]***	[0.02]***	[0.02]***
NGO outreach	0.04	0.04	0.05	0.04	0.09	0.07	0.05	0.04
	[0.02]***	[0.02]**	[0.03]*	[0.03]	[0.03]***	[0.03]**	[0.02]**	[0.02]**
Female		0.02		-0.02		-0.08		-0.00
		[0.01]*		[0.03]		[0.03]**		[0.02]
Above median education		0.01		0.13		0.11		0.05
		[0.01]		[0.03]***		[0.03]***		[0.02]**
Above median income		0.05		0.04		0.02		0.00
		[0.01]***		[0.03]		[0.03]		[0.02]
Age 31-40		0.00		-0.01		0.03		-0.00
		[0.01]		[0.03]		[0.03]		[0.02]
Age 40-50		0.02		-0.00		0.02		0.01
		[0.02]		[0.04]		[0.04]		[0.03]
Age 51-60		0.01		-0.02		-0.03		0.01
		[0.02]		[0.05]		[0.05]		[0.04]
Age 60 or above		0.03		-0.01		-0.16		-0.01
		[0.03]		[0.05]		[0.06]***		[0.04]
Muslim		-0.00		0.06		0.01		0.09
		[0.02]		[0.04]		[0.06]		[0.02]***
Above median household size		0.02		0.04		0.06		0.00
		[0.01]		[0.03]		[0.03]*		[0.02]
Voted in 2011		0.01		0.04		0.08		0.00
		[0.02]		[0.03]		[0.03]**		[0.02]
Voted for opposition in 2011		0.01		-0.03		-0.04		-0.03
		[0.01]		[0.03]		[0.04]		[0.02]
Observations	1,188	1,188	1,182	1,182	1,182	1,182	1,163	1,163
Community fixed effects?	Y	Y	Y	Y	Y	Y	Y	Y
R-squared	0.17	0.19	0.12	0.15	0.13	0.17	0.17	0.19

Estimation via OLS regression with community fixed effects, individual controls, and standard errors clustered by community, following Equation 1 in the main text. *** p<0.01, ** p<0.05, * p<0.1.

Full regression table for Table 3 in paper (continued)

	Violate ban on public gatherings past 2w?		Break curfew in past 2w?		Government has heart to provide health care?		Trust MoH?	
Government outreach	-0.10	-0.10	-0.01	-0.01	0.04	0.04	0.10	0.09
	[0.03]***	[0.03]***	[0.02]	[0.02]	[0.02]*	[0.02]	[0.03]***	[0.03]***
NGO outreach	0.03	0.03	-0.01	-0.02	-0.01	-0.01	-0.00	0.00
	[0.03]	[0.03]	[0.02]	[0.02]	[0.03]	[0.03]	[0.04]	[0.04]
Female		-0.06		-0.10		-0.02		-0.05
		[0.03]**		[0.02]***		[0.03]		[0.03]
Above median education		0.01		0.01		0.01		-0.04
		[0.02]		[0.02]		[0.02]		[0.03]
Above median income		0.07		0.01		-0.03		-0.10
		[0.03]**		[0.02]		[0.03]		[0.03]***
Age 31-40		-0.06		0.01		-0.02		-0.01
		[0.03]*		[0.02]		[0.03]		[0.04]
Age 40-50		-0.03		-0.00		-0.02		-0.01
		[0.04]		[0.02]		[0.03]		[0.04]
Age 51-60		-0.13		-0.04		-0.01		-0.02
		[0.05]***		[0.03]		[0.04]		[0.06]
Age 60 or above		-0.15		-0.03		-0.05		0.08
		[0.05]***		[0.04]		[0.06]		[0.07]
Muslim		0.00		-0.02		-0.06		-0.08
		[0.05]		[0.03]		[0.04]*		[0.05]
Above median household size		-0.01		0.02		-0.01		-0.05
		[0.02]		[0.02]		[0.03]		[0.02]**
Voted in 2011		-0.02		0.03		-0.00		0.01
		[0.03]		[0.02]		[0.03]		[0.03]
Voted for opposition in 2011		0.04		0.01		-0.03		-0.03
		[0.03]		[0.02]		[0.02]		[0.03]
Observations	1,188	1,188	1,188	1,188	1,180	1,180	1,180	1,180
Community fixed effects?	Y	Y	Y	Y	Y	Y	Y	Y
R-squared	0.12	0.15	0.07	0.11	0.09	0.09	0.07	0.09

Estimation via OLS regression with community fixed effects, individual controls, and standard errors clustered by community, following Equation 1 in the main text. *** p<0.01, ** p<0.05, * p<0.1.

Full regression table for Table 3 in paper (continued)

	MoH is corrupt?		MoH is capable of providing quality health care?		Prefer MoH provide health care rather than NGOs?	
Government outreach	-0.08	-0.08	0.02	0.01	0.10	0.09
	[0.03]**	[0.03]**	[0.04]	[0.04]	[0.03]***	[0.03]***
NGO outreach	-0.00	-0.01	0.01	0.01	0.02	0.03
	[0.04]	[0.04]	[0.04]	[0.04]	[0.03]	[0.03]
Female		-0.05		-0.04		0.00
		[0.03]		[0.03]		[0.04]
Above median education		0.09		-0.05		0.01
		[0.03]***		[0.03]		[0.03]
Above median income		0.04		-0.07		-0.09
		[0.03]		[0.04]*		[0.03]***
Age 31-40		0.05		-0.03		0.02
		[0.04]		[0.03]		[0.04]
Age 40-50		-0.00		-0.05		0.04
		[0.04]		[0.03]		[0.04]
Age 51-60		-0.09		-0.07		0.05
		[0.06]		[0.05]		[0.05]
Age 60 or above		-0.12		-0.07		0.09
		[0.07]*		[0.07]		[0.07]
Muslim		-0.01		-0.04		0.05
		[0.07]		[0.05]		[0.05]
Above median household size		0.04		-0.07		-0.04
		[0.03]		[0.03]***		[0.03]
Voted in 2011		0.04		0.02		-0.03
		[0.04]		[0.04]		[0.04]
Voted for opposition in 2011		0.06		-0.04		0.02
		[0.04]		[0.04]		[0.04]
Observations	1,180	1,180	1,180	1,180	1,180	1,180
Community fixed effects?	Y	Y	Y	Y	Y	Y
R-squared	0.09	0.12	0.09	0.10	0.09	0.10

Estimation via OLS regression with community fixed effects, individual controls, and standard errors clustered by community, following Equation 1 in the main text. *** p<0.01, ** p<0.05, * p<0.1.

Full regression table for Table 3 in paper (continued)

	Aggregate index of pro-Government attitudes		Support for laws and regulations		Willing to obey government even if you disagree? (0-1 scale)		Preference for government over non-state service provision	
Government outreach	0.08	0.07	0.13	0.12	0.10	0.09	0.04	0.04
	[0.01]***	[0.01]***	[0.02]***	[0.02]***	[0.02]***	[0.02]***	[0.02]**	[0.02]**
NGO outreach	0.01	0.01	0.03	0.01	0.00	0.00	0.01	0.01
	[0.02]	[0.02]	[0.02]	[0.02]	[0.02]	[0.02]	[0.02]	[0.02]
Female		-0.01		-0.08		-0.02		-0.00
		[0.01]		[0.02]***		[0.02]		[0.03]
Above median education		-0.03		0.04		0.00		0.00
		[0.01]**		[0.02]**		[0.01]		[0.02]
Above median income		-0.04		-0.00		-0.05		-0.04
		[0.01]***		[0.02]		[0.02]***		[0.02]*
Age 31-40		0.00		0.03		0.00		0.01
		[0.01]		[0.03]		[0.02]		[0.02]
Age 40-50		0.00		-0.00		-0.01		0.01
		[0.01]		[0.03]		[0.02]		[0.03]
Age 51-60		0.03		0.01		0.04		0.02
		[0.02]		[0.04]		[0.03]		[0.03]
Age 60 or above		0.02		0.01		-0.01		0.03
		[0.03]		[0.04]		[0.04]		[0.05]
Muslim		0.01		0.07		-0.01		0.07
		[0.02]		[0.04]*		[0.02]		[0.03]*
Above median household size		-0.02		-0.05		-0.04		-0.04
		[0.01]**		[0.02]**		[0.02]**		[0.02]*
Voted in 2011		-0.00		0.02		0.00		-0.04
		[0.02]		[0.03]		[0.02]		[0.02]
Voted for opposition in 2011		-0.04		-0.09		-0.03		-0.03
		[0.01]***		[0.03]***		[0.02]		[0.03]
Observations	1,180	1,180	1,164	1,164	1,180	1,180	1,188	1,188
Community fixed effects?	Y	Y	Y	Y	Y	Y	Y	Y
R-squared	0.14	0.17	0.14	0.19	0.11	0.13	0.09	0.10

Estimation via OLS regression with community fixed effects, individual controls, and standard errors clustered by community, following Equation 1 in the main text. *** p<0.01, ** p<0.05, * p<0.1.

Full regression table for Table 4 in paper

	Use hand sanitizer daily?	Bucket outside home?	MoH well-intentioned?	Trust MoH?	MoH is corrupt?	MoH capable?	Prefer MoH over NGOs?	Trust in government index (0-1)
Outreach (Winter 2015)	0.00	-0.01	-0.01	-0.06	0.04	0.04	0.02	0.00
	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.04]	[0.02]
March	0.19	0.08	0.03	0.05	-0.09	0.20	-0.09	0.07
	[0.03]***	[0.02]***	[0.03]	[0.03]	[0.03]**	[0.03]***	[0.03]***	[0.01]***
Outreach (Winter 2015) x March	0.12	0.07	0.05	0.10	-0.01	0.06	0.03	0.05
	[0.05]**	[0.04]*	[0.05]	[0.05]*	[0.06]	[0.05]	[0.05]	[0.02]**
Female	-0.07	-0.01	-0.01	-0.08	-0.02	-0.05	-0.03	-0.01
	[0.03]**	[0.03]	[0.02]	[0.03]***	[0.03]	[0.03]	[0.03]	[0.01]
Above median education	0.09	0.08	-0.02	-0.04	0.09	-0.07	0.05	-0.01
	[0.03]***	[0.03]**	[0.02]	[0.03]	[0.03]***	[0.03]**	[0.03]	[0.01]
Above median pre-Ebola income	0.05	0.02	0.03	-0.09	0.07	-0.01	-0.05	-0.03
	[0.03]*	[0.03]	[0.03]	[0.03]***	[0.03]**	[0.03]	[0.04]	[0.01]**
Age 31-40	-0.03	0.01	0.01	-0.02	0.01	-0.04	0.02	0.00
	[0.04]	[0.03]	[0.03]	[0.04]	[0.04]	[0.04]	[0.04]	[0.02]
Age 40-50	-0.08	-0.03	-0.01	-0.07	0.02	-0.09	0.02	-0.01
	[0.05]	[0.04]	[0.04]	[0.04]	[0.05]	[0.04]**	[0.05]	[0.02]
Age 51-60	-0.05	-0.05	0.03	-0.07	-0.12	-0.01	0.10	0.05
	[0.06]	[0.05]	[0.04]	[0.06]	[0.06]*	[0.05]	[0.06]	[0.02]**
Age 60 or above	-0.21	-0.04	-0.00	-0.07	-0.12	-0.07	0.02	0.04
	[0.07]***	[0.07]	[0.06]	[0.06]	[0.07]*	[0.08]	[0.09]	[0.03]
Muslim	-0.06	-0.01	-0.03	-0.04	-0.04	-0.04	0.08	0.03
	[0.05]	[0.04]	[0.04]	[0.06]	[0.06]	[0.07]	[0.06]	[0.02]
Above median household size	-0.03	0.06	0.03	-0.02	0.02	-0.00	-0.04	-0.01
	[0.03]	[0.02]**	[0.02]	[0.03]	[0.03]	[0.03]	[0.04]	[0.01]
Voted in 2011 election	0.03	0.03	-0.03	0.08	-0.02	0.07	0.04	0.04
	[0.04]	[0.03]	[0.03]	[0.04]**	[0.04]	[0.04]*	[0.04]	[0.02]**
Voted for opposition in 2011 election	-0.01	-0.00	-0.03	-0.07	0.07	-0.04	-0.05	-0.06
	[0.04]	[0.03]	[0.02]	[0.03]**	[0.04]*	[0.03]	[0.03]	[0.01]***

Community fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1,315	1,315	1,294	1,294	1,294	1,292	1,295	1,294
R-squared	0.19	0.13	0.10	0.13	0.11	0.17	0.12	0.18

Estimation via OLS regression with community fixed effects, individual controls, and standard errors clustered by community. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 3 - Determinants of attrition

Determinants of attrition

	(1) Attrition in March follow-up survey
Female	-0.02
	[0.03]
Above median education	-0.07
	[0.03]**
Above median pre-Ebola income	0.04
	[0.03]
Age 31-40	0.00
	[0.03]
Age 40-50	0.02
	[0.04]
Age 51-60	0.01
	[0.06]
Age 60 or above	0.13
	[0.08]
Muslim	0.08
	[0.04]*
Above median household size	-0.04
	[0.03]
Voted in 2011 election	-0.06
	[0.04]
Voted for opposition in 2011 election	0.05
	[0.04]
Constant	0.26
	[0.05]***
Observations	774
R-squared	0.03

Robust standard errors in brackets, clustered by community. *** p<0.01, ** p<0.05, * p<0.1

Appendix 4 - Sensitivity analysis

This section uses selection on observables to assess the potential bias from unobserved omitted variables, following Oster (2017). The idea is to use the bias eliminated by observed covariates to assess the potential bias of unobserved, omitted variables.

Consider the following linear regression models:

$$Y = \beta X + \gamma W_1 + \alpha W_2 + \epsilon \qquad (1)$$

$$Y = \tilde{\beta} X + \tilde{\gamma} W_1 + \epsilon \qquad (2)$$

$$Y = \dot{\beta} X + \epsilon \qquad (3)$$

where β, the effect of some treatment X, is the coefficient of interest, W_1 is a matrix of observed control variables, and W_2 is a set of unobserved control variables. Equation refers to the true model and returns an unbiased estimate of β. Equation (2) consists of the full set of observed control variables. Estimates of $\tilde{\beta}$ will be biased unless W_2 is uncorrelated with either X, Y, or both. Equation (3) is a naive model. Estimates of $\dot{\beta}$ will be more biased than those of $\tilde{\beta}$.

The Oster approach uses coefficient movements between the naive estimate ($\dot{\beta}$) and the controlled estimate ($\tilde{\beta}$) combined with movements in R-squared values to gauge the degree of potential omitted variables bias. Heuristically, estimates that move little with the inclusion of control variables that cause substantial increases in R-squared are indicative of limited omitted variables bias. The approach relies on two assumptions. The first assumption is the so-called "coefficient of proportionality", δ, which is degree to which the observed controls (W_1) determine treatment relative to the unobserved (W_2). δ =1 allows the unobserved controls to be as influential as the observed controls. This assumption is likely to hold when the observed controls are among the strongest determinants of treatment.

The second assumption is the maximum R-squared value (R^2_{max}) from the hypothetical estimation of Equation (1), the true model. R^2_{max} and $R^2_{controlled}$ (from Equation (2)) determine the explanatory power of unobserved omitted variables after accounting for the observed control variables. In the presence of measurement error or idiosyncratic variation in the outcome, $R^2_{max} < 1$.

Oster (2017) shows that with assumptions about R^2_{max} and δ it is possible to use coefficient movements in β between the naive and controlled regressions to calculate the potential bias from omitted variables. This results in an identified set, bounded on one side by the controlled estimate and on the other by the bias-adjusted estimate, which contains the unbiased estimate. A result is deemed robust if the identified set excludes zero.

Note that using coefficient stability between Equations (2) and (3) to argue for causality is equivalent to arguing treatment is *unconditionally* exogenous: $\dot{\beta}$ varies little from $\tilde{\beta}$ because W_1 does not confound. And because W_1 does not confound, W_2 is also unlikely to confound (especially when we believe W_1 constitutes the strongest determinants of treatment). The framework can easily be extended to the case where treatment is believed to be exogenous only after conditioning on a set of control variables, M. In this case, the variables in equations (1)-(3) are first residualized with respect to M (equivalently, M is included in equations (1)-(3)).

How to select conservative values for R^2_{max} and δ? Oster (2017) re-analyzes experimental studies to identify conservative values of R^2_{max} and δ under which a non-zero bias-adjusted effect would be consistent with exogenous treatment assignment. These parameter values are then recommended as a robust reporting standard. The intuition of this test follows from the discussion above: observational studies implicitly argue that the treatment is exogenous. Including controls should not change the coefficient because there is no confounding. In experimental studies, this assumption is known to hold. Control variables will still influence the coefficient estimate due to idiosyncratic imbalance across groups. Thus it is possible to use the stability of treatment estimates in randomized data as a guide to how much stability would be expected in observational data if the treatment were assigned exogenously. To do so, Oster (2017) draws on a large sample of randomized studies published in *American Economic Review*, *Quarterly Journal of Economics*, Journal of Political Economy, *Econometrica* and the *American Economic Journal – Applied Economics* from 2008 through 2013.

Oster (2017) assumes the effects estimated in randomized data are causal and that they should therefore survive the bias-adjustment procedure. Robustness cutoff values are based on the value of R^2_{max} and δ under which the bias-adjusted effect is distinct from zero in 90% of experimental studies. This leads to the values of $R^2_{max} = 1.3 * R^2_{controlled}$ and $\delta = 1$, Substantively, this assumes un-observables explain as much of the variation in treatment as the observables and explain 30% of the variation in the outcome explained by the included controls. For full details, see Oster (2015).

In our set-up, we're interested in the potentially causal varibales from Table 2: knowing ebola victims, observing dead bodies, and exposure to government outreach. W_1 includes the full set of covariates reported in Table 2, including village ward effects, W_2 is the set of all unobserved confounders, and M includes indicators for each survey round. Our test is conservative in that we exceed Oster's recommended standards for robustness by setting $R^2_{max} = 2 * R^2_{controlled}$ and δ =1 (rather than $R^2_{max} = 1.3 * R^2_{controlled}$ and $\delta = 1$). Substantively, this sets unobservables to be as influential as the full set of control variables (including fixed effects) in explaining both the outcome and treatment.

The results of this sensitivity analysis are presented below. The first column shows the baseline effect of the variables in Table 2 on the outcome, estimated from a regression of the outcome on the variable of interest and survey round indicators. The second column presents estimates of the fully controlled effect, reported in Table 2 in the main article. The third and fourth columns show the bias-adjusted effect and identified set under Oster (2017)'s recommended standards for

robustness ($R^2_{max} = 1.3 * R^2_{controlled}$ and $\delta = 1$). Under this level of confounding, the identified sets exclude zero. The fifth and sixth columns show the bias adjusted effect and identified set assuming $R^2_{max} = 2 * R^2_{controlled}$ and $\delta = 1$. Even under this level of confounding, the identified sets exclude zero. Substantively, the results of this exercise indicate that omitted unobservables would have to be substantially more confounding than observables to reduce effect sizes to zero.

Appendix 4: Oster (2017) Sensitivity analysis

			R2 max=1.3 x Controlled R2		R2 max=2 x Controlled R2	
	Naive effect (Std. Error) [R2]	Controlled effect (Std. Error) [R2]	Bias-adjusted effect	Identified set	Bias-adjusted effect	Identified set
Knowledge about Ebola (std)	0.05 (0.01) [0.16]	0.04 (0.01) [0.19]	0.03	[0.04, 0.03]	-0.03	[0.04, -0.03]
Bucket for hand-washing outside home?	0.05 (0.02) [0.09]	0.05 (0.02) [0.12]	0.03	[0.05, 0.03]	-0.01	[0.05, -0.01]
Use hand sanitizer daily?	0.11 (0.03) [0.1]	0.09 (0.03) [0.13]	0.07	[0.09, 0.07]	-0.01	[0.09, -0.01]
Support for contentious control policies	0.11 (0.01) [0.16]	0.11 (0.01) [0.18]	0.08	[0.11, 0.08]	-0.03	[0.11, -0.03]
Violate ban on public gatherings past 2w?	-0.09 (0.02) [0.14]	-0.08 (0.03) [0.15]	-0.07	[-0.08, -0.07]	0.03	[-0.08, 0.03]
Break curfew in past 2w?	-0.03 (0.02) [0.14]	-0.02 (0.02) [0.15]	-0.01	[-0.02, -0.01]	0.24	[-0.02, 0.24]
Trust in government index	0.07 (0.01) [0.11]	0.07 (0.01) [0.14]	0.06	[0.07, 0.06]	0.03	[0.07, 0.03]
Support for laws and regulations	0.14 (0.02) [0.15]	0.12 (0.02) [0.19]	0.10	[0.12, 0.1]	0.03	[0.12, 0.03]

Appendix 5 – Sampling Procedures

Quantitative Survey

In the first stage of our sampling procedure, 78 communities in Monrovia were randomly selected using probability of selection weights proportional to each community's share of the overall population of Monrovia (taken from the 2008 Census).

Within each of these communities, twenty households were randomly selected within each neighborhood following a random walk procedure. Enumerators began by dividing each neighborhood into blocks with the assistance of a local leader. They then selected four blocks at random. Working with the local leader, they next identified the most central location within each block – typically a town square, water pump or "palava hut" from which paths feeding all parts of the neighborhood originated. Enumerators then randomly selected one path and walked the length of it, marking every 5th household with chalk. Upon reaching the end of one path, they turned left and continued walking until they found another. Finally, they returned to each house, created a roster of all individuals living in the house, and selected one of those individuals at random. If the respondent was not home at the time of the enumerator's visit, an appointment was made for later that day or the following day. If they were not available on either day, they were skipped.

Surveys were conducted in Liberian English. Residents of Monrovia share a common language and culture.

Field reports from our enumerators indicate that residents were generally receptive to the survey and understood the need for quality information on food security, health, and other welfare outcomes collected in the survey. When reluctance did arise, it was generally due to the time the survey was expected to take, or to scheduling concerns. We believe this warm reception partially accounts for our high response rate. In addition, we elected to devote the necessary resources that would allow our enumerators to be flexible in scheduling interviews with respondents, so that they were able to survey them at a time of their convenience. And finally, respondents were much more available than usual due to the decline of the economy and the high rate of unemployment.

Qualitative Interviews

Because the focus of our interviews was to understand the nature and effectiveness of outreach efforts, we over sampled communities with above-median levels of outreach, as measured by our survey. In particular, we randomly sampled 29 communities with above median levels of outreach and nine communities with below median levels of outreach. Within each of these communities, we asked the Town Chairman to identify members of the anti-Ebola Community Task Force, the institution responsible for conducting outreach during the epidemic. Though the majority of our respondents were members of a Community Task Force, we also interviewed other actors involved in the response, including the town chairman, clinicians, community health workers, and active case finders

Appendix 6 –Precautions Taken to Ensure Enumerator Safety

We took extensive precautions to ensure the safety of our survey enumerators. First, enumerators avoided any neighborhood with known active Ebola cases or contacts. Within neighborhoods, enumerators coordinated with local leaders to avoid households with known Ebola victims (past or present), suspected Ebola victims (past or present) or otherwise sick persons (in the present). Enumerators were trained to avoid physical contact and maintain a two-foot distance when interacting with respondents. They also monitored their temperatures daily, and were provided with rubber boots and hand sanitizer as additional precautions. No adverse events to Parley staff or respondents were reported at any time during the surveys.

Appendix 7 – Additional balance tests

In this section, we test for balance on exposure to government outreach using alternative measures of income and education, to ensure the balance results reported in the main paper are not sensitive to our use of indicators for above median education/income as our primary measures. In the first column, we measure income using the question "Before Ebola, about how much income did you earn in a normal week?" and we measure Education on a scale from o "No education" to 8 "Post-secondary degree". In Column 2, we measure income using the question "About how much income have you earned in the past week?" and we measure income using four indicators for i) no education, ii) some or completed primary education, iii) some or completed junior high, and iv) some completed high school, omitting the category for post-secondary education.

Alternative tests of balance

	Government outreach	
Female	-0.08	-0.08
	[0.03]**	[0.03]**
Highest level of education (0-8 scale)	0.00	
	[0.01]	
Income in normal week in USD	-0.00	
	[0.00]	
No edu		-0.05
		[0.06]
Primary school edu		-0.02
		[0.06]
Junior high edu		0.01
		[0.05]
High school edu		-0.05
		[0.05]
Income past 7d in USD		0.00
		[0.00]
Age 31-40	0.02	0.01
	[0.04]	[0.04]
Age 40-50	-0.01	-0.02
	[0.04]	[0.04]
Age 51-60	0.09	0.08
	[0.06]	[0.06]
Age 60 or above	-0.01	-0.03
	[0.07]	[0.07]
Muslim	-0.04	-0.05
	[0.06]	[0.06]
Above median household size	-0.06	-0.05
	[0.03]*	[0.03]*
Voted in 2011 election	0.05	0.05
	[0.05]	[0.05]
Voted for main opposition party in 2011 election	-0.06	-0.06
	[0.05]	[0.05]
Voted for incumbent in 2011 election	-0.01	-0.00
	[0.04]	[0.04]
Observations	1,167	1,188

R-squared	0.13	0.13

Estimation via OLS with community fixed effects and standard errors clustered by community. *** p<0.01, ** p<0.05, * p<0.1.

Appendix 8 – Qualitative protocol

Purpose

The qualitative protocol was designed with two goals in mind. First, to better understand the government's model of mediated outreach model and contextualize its role in the broader epidemic as a strategy to change citizens attitudes, beliefs, and behaviors. To this end, the protocol asked key informants --- mainly local intermediaries who worked on behalf of the government during the epidemic --- to describe the nature of their affiliation with the government, the training they received, and the procedures they followed to carry out their work. Second, the protocol sought to understand the nature and level of community resistance to mediated outreach, as well as the strategies local intermediaries adopted to overcome such resistance and persuade their fellow citizens of the veracity of their messages. By documenting these strategies, we hoped to shed some light on the mechanisms that contributed to the effectiveness of the mediated outreach model.

Selection criteria

To identify key informants, we followed a two-stage sampling procedure. First, we randomly selected 40 communities in the following manner:

- We first divided the sample of communities included in the quantitative survey into three groups: those with the highest levels of reported government outreach (above the 66^{th} percentile according to the quantitative survey), those with moderate levels of government outreach (between the 34^{th} and 65^{th} percentiles), and those with low levels of community outreach (below the 33^{rd} percentile).
- Next, we randomly sampled 20 communities from the group with the highest outreach intensity, 15 communities from the group with moderate intensity, and five communities from the group with the lowest intensity of outreach.

This procedure was adopted to ensure that communities with high levels of mediated outreach were well-represented in our qualitative interviews, given the focus on uncovering the modalities of the mediated outreach model and unpacking its effectiveness.

In the second stage of the sampling procedure, we asked the town chairman to refer us to members of the anti-Ebola Community Task Force, the institution responsible for conducting outreach during the epidemic. In most communities, we selected two to three members of the Task Force to serve as key informants on the basis of convenience, usually selecting whichever members were available and ready at the time of our visit.

While by no means a random sample, we do not believe this necessarily jeopardizes the integrity of our qualitative interviews since their purpose was to unpack mechanisms, rather than to assess the effectiveness of outreach itself (as we do in the quantitative analysis). If the goal were the latter, we would obviously be concerned that the Chairman might introduce us to those with favorable views of outreach, potentially biasing our analysis. But it is less clear that this type of

bias would apply to our assessment of mechanisms, since informants were asked to report mainly on factual matters related to their experience conducting outreach.

Interviews were conducted by a team consisting of one American research assistant and two local research assistants. In most cases, the team would split up when conducting the actual interview, so that there was either one interviewer per informant or two interviewers per informant. Interviews were semi-structured --- they followed a list of pre-set questions, but we asked any number of follow-up questions depending on informant's responses. Most interviews lasted between 60 and 90 minutes. All interviews were conducted in Liberian English, the language of the vast majority of Monrovians.

Research assistants took detailed notes during the meetings, but did not record the interviews. At the end of each day, they transcribed their notes on the computer and added detail as appropriate.

We elected to focus our qualitative protocol on informants from the Ebola Task Force because of the dual goals of the protocol – to describe and contextualize the mediated outreach model and to unpack the mechanisms underlying its effectiveness. While it would have been informative to also interview ordinary citizens and villagers, our resources did not allow for this.

Questions included in the qualitative protocol:

Descriptive characterization of mediated outreach:

- What was the nature of your relationship with the MoH or government? How did citizens know you were affiliated with the MoH or government?
- What type of community activities were you involved in prior to your work as a mobilizer/contact tracer/active case finder / [other position]?
- When did you first start working with the MoH?
- Were you trained by the MoH? When did this training occur? Where did it occur, and who from the MoH was leading the training?
- What kind of identification did you have to that would associate you with the MoH or government in the eyes of citizens? Can we see this identification?
- What kind of compensation, if any, did you receive from the government or MoH?
- How many other members of your community were also working as mobilizers/contact tracers/other position?
- How did you decide where in your community to do your work?

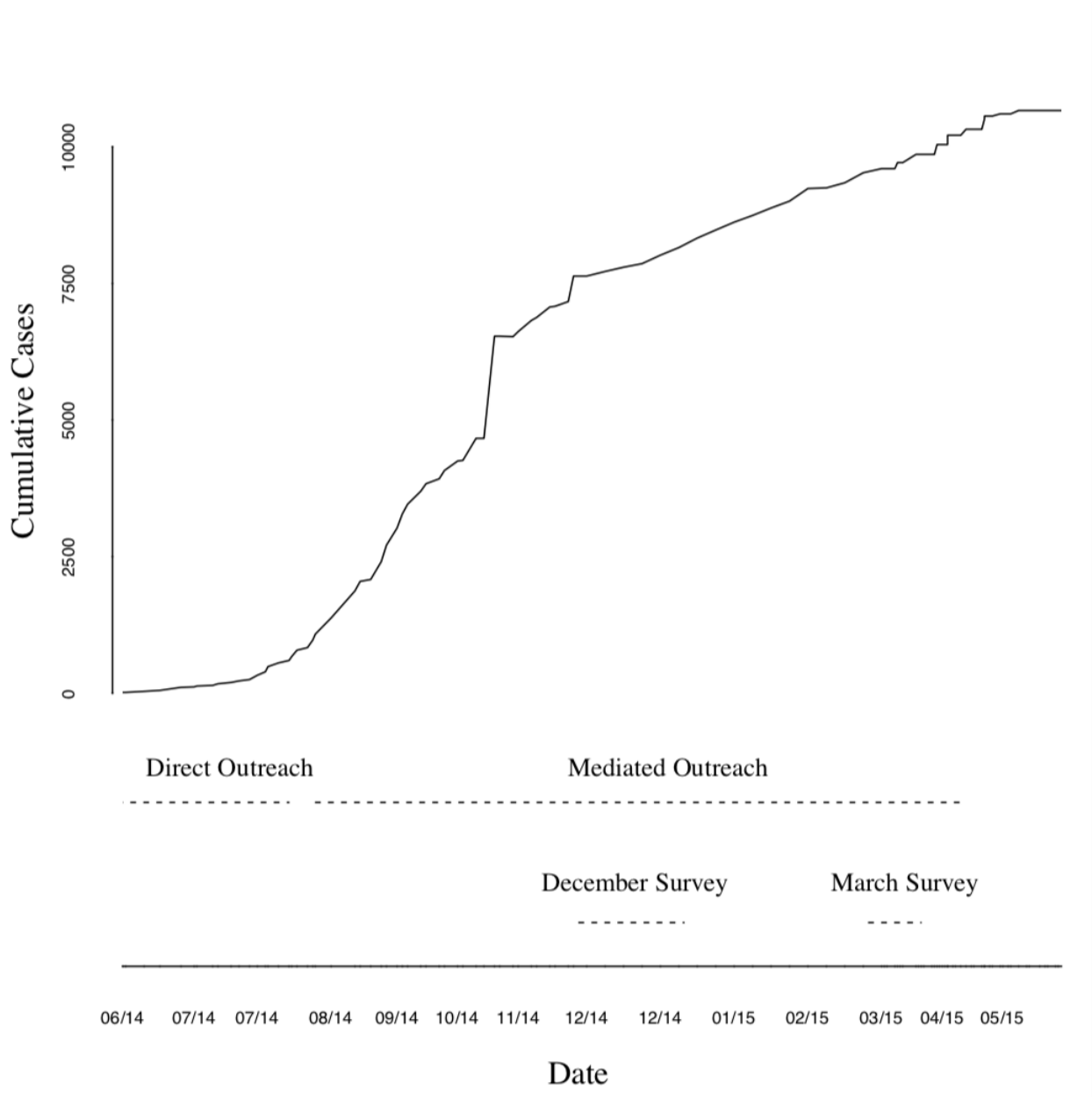
Overcoming resistance to mediated outreach from community members

- How did people in your community feel about the MoH and government during the epidemic, and how did these feelings change overtime?.
- Did community members have positive or negative feelings about MoH or government when outreach began? Did these feelings change overtime? If so, why did they change? Did people doing outreach help to change these feelings over time? If so, how?
- Were there any cases of resistance to your work? If yes, how did you overcome this

resistance? Please describe in general. Please also describe a memorable case, in detail.

- Were there any instances of people hiding from you? Were there any cases of resistance to your work? If yes, how did you overcome this resistance? Please describe in general. Please also describe a memorable case, in detail.

Appendix 9 – Epidemic and study timeline



The above timeline shows the cumulative number of confirmed EVD cases in Liberia, as reported by the WHO, from June 2014 through May 2015. Also depicted are the approximate dates of direct versus mediated outreach by the government, as determined by our field research. Lastly, the timeline shows the start and end dates of our December 2014 and March 2015 surveys.