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Electoral incentives to combat mosquito-borne illnesses: Experimental evidence from Brazil ☆

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ABSTRACT

Mosquito-borne illnesses present significant health challenges to the developing world. If citizens are informed about their government's efforts to combat these diseases, will they reward incumbents who have performed well and punish those who have done poorly at this task? Electoral sanctioning requires that combatting disease be a sufficiently salient concern, which, in turn, is likely to depend upon subjective perceptions of the risks posed by particular illnesses. Epidemics typically prompt stronger risk perceptions than endemic diseases, but where both types circulate jointly, the more familiar endemic disease may determine public reactions. The salience of health threats also varies among individuals; those with a self-interest in prevention or a personal connection to the effects of mosquito-borne illnesses may react more strongly.

This study presents the results of a face-to-face survey experiment in Pernambuco, Brazil, informing subjects about their mayor's use of federal funds to combat mosquito-borne illnesses such as dengue (an endemic disease) and Zika and chikungunya (both epidemics). We examine the effect of this information on intended vote for the mayor's reelection. For the full sample, the treatment has no significant effect. However, we find a large and significant punishment effect among voters who know someone affected by microcephaly or the Zika virus. Drawing on survey and focus group evidence, we argue that most voters fail to act upon our treatment information because mosquito control is a low-salience concern primarily associated with endemic rather than epidemic diseases.

Our study constitutes the first experimental evidence as to whether informing citizens about government public health efforts affects voting behavior. Our results suggests that, where similar epidemic and endemic diseases circulate together, informational campaigns aiming to induce electoral accountability should also seek to boost the salience of the information by educating the public about the difference between familiar and newer threats.

1. Introduction

Mosquito-borne illnesses present significant health challenges to the developing world. Vectors for diseases such as malaria, dengue, chikungunya, and Zika thrive in wet, tropical climates. Countries closer to the equator tend to be poorer, producing living conditions—pools of standing water, open windows and fans rather than air conditioning—that facilitate mosquito reproduction and infection of humans (Gallup & Sachs, 2001). Lower levels of education in society mean fewer medical personnel and public health workers available to fight disease (Frenk et al., 2010). State capacity tends to be more limited as well, complicating efforts to mount large-scale public education campaigns or carry out household-level mosquito control efforts (Burkle, 2006).

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An additional challenge in combatting mosquito-borne illnesses in the developing world is distinctly political: inducing elected officials to prioritize the public good of disease control in contexts where clientelism and corruption may be common. The difficulties are often compounded when multiple levels of government are involved. Making funds available to local authorities for the purpose of fighting disease can potentially improve eradication efforts, since municipal officials tend to have better knowledge of their communities and may be more trusted by the population. Yet their political incentives may lead them to focus scarce resources on other priorities, such as infrastructure investment, that carry better expected electoral returns.

In democracies, vertical accountability offers a potential solution to the political challenges of combating disease. If voters are informed about the extent and effectiveness of their government's efforts, they can potentially reward incumbents who have performed well at this task and punish those who have done poorly. Yet effective electoral sanctioning requires that combatting disease be a sufficiently salient concern to influence voting behavior. In turn, the salience of government efforts in this area are likely to depend upon individuals' subjective perception of the risks posed by particular illnesses.

In this paper, we examine the electoral effect of informing citizens about their local government's efforts at combatting mosquito-borne illnesses such Zika, dengue, and chikungunya. Our study takes place in the state of Pernambuco, Brazil—the epicenter of the 2015–16 outbreak of congenital Zika syndrome, or the series of birth defects associated with the Zika virus. We conducted a face-to-face survey experiment in July 2016, informing the treatment group about the mayor's use of federal funds to hire public health workers for the purpose of controlling mosquito-borne illnesses. We examine the effect of this information on intended vote for the mayor's reelection, measured via a secret ballot simulation at the end of the survey.

For the full sample, information about the local government's record in combatting mosquito-borne illnesses has no significant effect on intention to vote for the mayor's reelection. Yet we do find a large and significant punishment effect among a subgroup for whom information about mosquito control should be particularly salient: those who personally know someone affected by microcephaly or the Zika virus. Drawing on our survey as well as focus groups, we argue that most voters fail to act upon our treatment information because they primarily associate mosquito control with dengue, an endemic disease that has existed in Brazil for decades and is much more prevalent than Zika. Inducing behavioral changes in response to endemic diseases is much more difficult than in the case of epidemics because people have a tendency to discounts risks that are familiar and well-understood. While international media coverage focused extensively on the Zika epidemic, both citizens and politicians in Pernambuco are much more concerned with the quality of basic health services, such as the staffing of local medical centers.

2. Principals, agents, citizens, and health services

As with many public goods, the delivery of government-provided health services involves a relationship among a principal in charge of the state, agents who act on the principal's behalf, and citizens who consume or are the targets of the services provided. Prior experimental studies of health service provision, primarily in the field of economics, have focused on the inherent principal-agent problem in this relationship. Assuming that poor health indicators or service delivery statistics are primarily attributable to a lack of effort on the part of frontline providers, these studies have examined whether different forms of recruitment attract better health workers or whether performance incentives and monitoring can improve service provision for a given set of employees (Ashraf, Oriana, & Jack, 2014; Ashraf, Scott, & Lee, 2014; Ashraf, Scott, & Lee, 2016; Banerjee, Duflo, & Glennerster, 2008; Basinga et al., 2011; Callen, Gulzar, Hasanain, Khan, & Rezaee, 2018; Deserranno, 2017; Dhaliwal & Hanna, 2017; Gertler & Vermeersch, 2012; Mignozzetti, 2018; Miller et al., 2012). Such studies implicitly or explicitly assume that principals desire better health service provision. In a review of the literature, Finan, Olken, and Pande (2017, 492) argue that in the case of "frontline government service providers," including health workers, "the government and the citizen's incentives are aligned: both would like the agent. . .to provide more or better services".

Yet politicians may not always have an interest in reforms that improve health outcomes. Increasing the quality of agents' service delivery through monitoring, performance incentives, or new recruitment methods can reduce opportunities for corruption and undermine existing clientelistic practices involving the distribution of both health worker jobs and medical services (Avelino, Barberia, & Biderman, 2014; Nichter, 2018; Sugiyama, 2012). Managing health programs may consume scarce resources that elected officials would prefer to spend in high-visibility areas with more potential for credit claiming, such as infrastructure investment. Even among politicians who prioritize health, there may be greater will to focus on emergency or specialty care than on public health and preventative services that contribute more to the overall well-being of the population.

Given that politicians' incentives may not be aligned with the goal of improved service delivery, several studies over the past decade have investigated the potential for social accountability: conveying information about government service delivery directly to citizens in the hopes that they will demand better performance from frontline providers (Fox, 2015; World Bank, 2016). Conclusions from this research program have been mixed; one study shows that efforts to facilitate citizen monitoring improve service delivery and health outcomes (Björkman & Svensson, 2009; Björkman Nyqvist, de Walque, & Svensson, 2017), whereas other studies in the area of education have found null effects on citizen engagement, learning outcomes, and teacher effort (Banerjee, Banerji, Duflo, Glennerster, & Khemani, 2010; Lieberman, Posner, & Tsai, 2014). A general conclusion is that the effective exercise of social accountability is often inhibited by barriers to collective action, a low sense of efficacy, and a lack of knowledge of concrete steps that citizens can take to act upon information (Banerjee et al., 2010; Buntaine, Daniels, & Devlin, 2018; Fox, 2015; Lieberman et al., 2014).[1]

Yet direct citizen monitoring of agents is not the only way that information can potentially foster improved health outcomes. Rather than bypassing politicians with misaligned incentives, citizens can potentially change those incentives by conditioning their voting behavior on the quality of service provision (World Bank, 2016). While pressuring frontline providers for better service may require collective action, a strong sense of efficacy, and knowledge of how to participate in new ways, the simple, individual, and routine act of voting faces few barriers of this sort. Fox (2015) thus issues a call to scholars to "bring vertical accountability back in" to the study of social accountability in the developing world. Sanctioning good performers and punishing bad performers at the ballot box can, in theory, be a powerful tool for development.

As with the literature on social accountability, field experiments that provide information in an effort to induce electoral sanction-

[1] In recognition of these barriers, scholars have begun to examine how providing information to citizens might advance public health by improving the consumption of health services rather than the quality supplied by frontline providers (Chicoine & Guzman, 2017)