

attendants is also about 10 percentage points lower in strongly partisan districts.

**Interpretation:** Strong voter attachment to political parties undermines the quality of democratic elections as a mechanism for enhancing electoral accountability. Where voters evince strong attachment to political parties, elections fail to discipline poor performance of public officials. Because strong partisan attachment is associated with weak supply and poor quality of public services, demand for essential services is also lower in these places. Initiatives that create public awareness about governments' performance on public services provision could pressure poor performers to improve. It could also spur collective action efforts to demand better services from government.

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**Abstract #:** 1.003\_GOV

### Anticipatory governance of technological innovation in global health as seen in Canadian newspapers

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**Purpose:** Newspapers are a source of knowledge for the public (1), as diffusion of knowledge through printed media is essential to the fabric of society, enabling social participation (2), and sustaining political freedom. The discussion in media may pertain to new and emerging scientific or technological development in the field of global health. Anticipatory governance strives to discuss foresight into the emergence of a given technological product in order to facilitate capacity for the society in which it is introduced(3); as such, we posit it as important for technological innovation within global health to be mentioned in a way that the reader is equipped to participate in anticipatory governance. The objective of the study was to find and analyze discourse regarding anticipatory governance of technological innovation within global health in Canadian newspapers, to compare this discourse to that which is found in existing literature on the topic, and to understand the consequences of such coverage for society.

**Methods:** We downloaded every article (1970–2015) from The Globe and Mail and National Post, and the Calgary Herald, and keyword searched the phrase “global health” in the text (n=1135 articles). We coded for “innovation” (n=70 articles) “technology” (n=346 articles) and “governance” (n=43 articles). Each article was read within context to decipher the nature of discourse, and co-accordance of certain terms to terms identified in existing literature on the topic were noted and analyzed.

**Results:** There was an evident discrepancy between the terms mentioned within existing literature on global health innovation, and the discourse presented in the media sources studied. The concepts of global health, technology, and innovation often occupied a financial context, with little regard to the social context associated. Identified issues associated with global health innovation received little visibility within the media. Non-state actors involved in global health governance(4) very rarely showed up in co-occurrence with “innovation” or “governance.”

**Outcomes:** We posit that the lack of discourse around anticipatory governance in global health and technological innovation is due to the excessive prevalence of a financial context, the lack of consideration given to the social aspect of innovation, and the narrowness of information leading to an absence of insight into different social contexts present in the global community.

**Going Forward:** Our findings show that a reader of the Canadian newspapers studied would not be equipped to participate in the anticipatory governance of technological innovation in the field of global health.

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**Abstract #:** 1.004\_GOV

### What explains the distribution of community-based health organizations in Malawi? an analysis of 15-year trends

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**Background:** In many sub-Saharan African countries, non-governmental and community-based organizations (NGOs and CBOs) deliver a significant proportion of health services. Yet, despite their importance, we know little about the dynamics of CBO formation or the determinants of their geographic distribution. To address this gap, we examine the changing geographic distribution of health-related CBOs in Malawi over a 15-year period. Our research questions are: (1) Where are health CBOs concentrated in Malawi? (2) How stable are they over time? (3) What socio-economic factors are associated with their formation and persistence?

**Method:** We recorded, categorized, and mapped 5,176 organization-locations using information collected through in-country reviews of Ministry records; web searches of district reports and NGO repositories; reviews of National AIDS Commission reports; and the compilation of data from previous mapping exercises. CBO information was then merged with district-level data on need, aid flows, social capital, and voting behavior. Data are analyzed graphically to determine trends. Negative binomial models are used to estimate factors associated with district-level CBO activity.

**Results:** There are 3,004 unique organizations in our dataset, of which 2,442 are CBOs or faith-based organizations. Almost all CBOs (89%) are primarily involved in HIV/AIDS activity although the exact nature of this work is difficult to discern. Only a small minority (8.33%) are involved in direct service provision, fewer

than those working in HIV prevention (12.12%) or orphan care (13.22%). CBOs are clustered in urban areas and the Southern region where HIV prevalence is highest. Data analysis is ongoing but initial findings suggest that foreign aid, population levels, and support for the ruling political party are positively associated with CBO placement. There is little relationship between a district's health status and CBO activity but CBOs seem to cluster in districts with fewer existing health facilities. After rapid growth in the 2000–2004 period, CBO numbers have recently stabilized.

**Implications:** We find that CBO formation in Malawi is a largely donor driven response to the HIV/AIDS epidemic that is weakly tied to community health need. However, CBOs operate in areas where few facilities exist and may, therefore, improve service coverage.

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### Determinants of health among the border population in three neighborhoods of Tijuana, Mexico

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**Background:** The public health needs of the border neighborhoods in Tijuana, Mexico are poorly understood. In order to identify disease burden, inaccessible health services and areas for intervention, a needs-assessment was performed in three separate low-income neighborhoods in Tijuana.

**Methods:** Using an original survey based on basic needs-assessment models, bilingual volunteers interviewed household representatives who presented to a visiting free clinic in three separate low-income neighborhoods in Tijuana. These free clinics are run by a non-for-profit organization that provides primary and urgent care clinic in these neighborhoods every three months.

**Findings:** There were a total of 116 households captured by the survey (51 at Site A, 50 at Site B, and 15 at site C). There were common themes among the three sites as well as unique opportunities for intervention at Sites B and C. We found that education and employment were low in all sites, that the majority of residents (excepting Site C) have health insurance that may cover doctor visits but does not allow for medication purchases or purchasing of ancillary studies. Diabetes mellitus and hypertension accounts for the majority of health problems. Medical care during pregnancy and for childbirth is relatively accessible to all for low cost.<sup>1</sup> Finally, none of the sites had access to the hospital via EMS in the case of an emergency. In terms of unique needs, Site B had a high incidence of asthma, possibly due to toxic air pollution as the area was formerly a city dump.<sup>2</sup> Site C had the lowest rate of education and employment and had minimal access to doctors, medications, sufficient clean water, and basic medical care.

**Interpretation:** This needs assessment evaluated three separate neighborhoods in Tijuana, Mexico and has provided valuable information regarding determinants of health in these populations including health care access, prevalence of medical problems, and environmental exposures. This survey has also highlighted several areas for public health intervention in the future.

**Funding:** None.

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- 2 Al-Delaimy, W.K.; Larsen, C.W.; Pezzoli, K. Differences in Health Symptoms among Residents Living Near Illegal Dump Sites in Los Laureles Canyon, Tijuana, Mexico: A Cross Sectional Survey. *Int. J. Environ. Res. Public Health* 2014, 11, 9532–9552.

**Abstract #:** 1.006\_GOV

### Trends of comorbidities in taiwanese patients infected with multi-drug resistant tuberculosis in seeking favorable treatment outcomes

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**Background:** Multi-drug resistant tuberculosis (MDRTB) accounts for 3.5% of new tuberculosis (TB) cases globally and is a major public health problem with potential global threats. Patients with comorbidities further complicate the complex treatment of MDRTB. Studies have shown that MDRTB patients with comorbidities have poorer treatment outcomes. The aim of this study is to evaluate clinical characteristics in MDRTB patients at TIHTC Taipei Hospital, Taiwan and raise awareness to help establish effective treatment regimens among comorbid patients infected with MDRTB.

**Methods:** As a retrospective study, data for 26 patients with MDRTB from the years 2009 to 2014 was gathered from the TIHTC Taipei Hospital. The independent variables in the data included age, drug treatment regimen, drug sensitivities, and type as well as number of comorbidities. Trends were observed on the variables of age and the various comorbidities with the MDRTB patients.

**Findings:** The sample (N=26) consisted of 16 males (61.5%) and 10 females (38.5%) and the mean age ( $\pm$ SD) of the patients with MDRTB was  $58.3 \pm 19.4$  years. Patients with at least one comorbidity was 50.0% (N=13) and at least two comorbidities was 25.9% (N=7). 68.8% (N=11) of the males and 20.0% (N=2) of the females had at least one comorbidity in addition to the MDRTB infection. There were higher percentages of MDRTB patients presenting with hypertension, 23.1% (N=6), and cancer, 15.4% (N=4). Other comorbidities included diabetes mellitus, 11.5% (N=3), hepatitis B, 7.7% (N=2), anemia, 7.7% (N=2), and miscellaneous-grouped diseases, 38.5% (N=10). Out of the 13 patients with comorbidities, hypertension counts 46.2% (N=6).

**Interpretation:** This study suggests that patients infected with MDRTB at Taipei Hospital tend to be male (68.8%) over female (20.0%) and altogether have a higher probability of having comorbidities (38.5%). Among the MDRTB patients with comorbidities, hypertension counts 46.2%, suggesting that hypertension is the most likely comorbidity in MDRTB patients received at Taipei Hospital. Because many anti-hypertension drugs are associated with serious toxicities, which can complicate the management of MDRTB, it