



Pacific Institute
FOR RESEARCH AND EVALUATION

Prevention of Murders in Diadema, Brazil:

The Influence of New Alcohol Policies

A brief report prepared by
The Pacific Institute for Research and Evaluation

October, 2004

Background

Pacific Institute for Research and Evaluation is a private sector non-governmental organization with thirty years of research and practice experience focusing, in large part, on the prevention of alcohol related injury and death. Pacific Institute is chartered in the United States and employs 90 Ph.D. level researchers within its workforce of 430. Institute staff work collaboratively with alcohol prevention researchers, administrators, and policy makers around the globe.

The Pacific Institute collaboration with alcohol researchers from the Departamento de Psiquiatria da Universidade Federal de Sao Paulo was initiated during a May, 2002, international meeting in Valencia, Spain. To date there have been five visits by Brazilian researchers and municipal policy makers to the United States, and four visits by Pacific Institute staff to Brazil. In addition, representatives of the Universidade Federal de Sao Paulo and Pacific Institute traveled to Cambridge, United Kingdom to represent the Americas in an international conference on alcohol policy. In summary, the collaboration of U.S. and Brazilian researchers and policy makers has been positive, productive, and mutually beneficial.

Experiences in Diadema

In February, 2004, as part of a meeting with researchers at the Universidade Federal de Sao Paulo, Pacific Institute representatives were informed that the City of Diadema had implemented new policies and enforcement strategies to prohibit alcohol sales after 23.00 hours. It was reported that these actions by political leaders and municipal staff in Diadema had achieved remarkable reductions in alcohol related violence against women and murders. The initial response to this report by Pacific Institute staff was “This is too good to be true. Can we arrange a meeting with city officials in Diadema?”

Fortunately, Jose de Fillipi, Jr., the Mayor of Diadema, and Regina Miki, the Diadema Secretary for Social Defense, were willing and able to change their calendars on short notice to meet with representatives of Pacific Institute and the Universidade Federal de Sao Paulo. As a result of these discussions Pacific Institute staff were impressed and intrigued – but not yet convinced.

In May, 2004, Pacific Institute researchers returned to Diadema to request the assistance and cooperation of Diadema officials and the collaborative support of researchers at the Universidade Federal de Sao Paulo in an independent evaluation of the Diadema alcohol policy initiatives using empirical behavioral health research protocols. Diadema city officials were as interested in documenting the results of their efforts as were the researchers, and agreed to cooperate fully and openly with Pacific Institute researchers in the program evaluation. Diadema officials did not place any restrictions on the research inquiries and did not place any requirements for prior review or limitations on the release of research results by Pacific Institute. This insured that the research would be independent, scientific, and credible. During the course of the research Diadema officials provided full and timely responses to Pacific Institute requests for Diadema municipal records, materials, and data files.

Research Objectives

In July, 2002, Diadema adopted a new municipal code requiring that all alcohol retailers in the City of Diadema cease alcohol sales at 11:00 pm. City records suggested that the adoption and enforcement of this new alcohol policy was preventing assaults against women and murders in Diadema. After discussion with Diadema officials, the project researchers determined that Diadema public records for these crimes in the years prior to and after the adoption of the new policy provided an empirical basis for evaluating the effectiveness of the new alcohol policy.

In addition there were reports that adoption of this new alcohol policy was reducing police calls for service, preventing other interpersonal acts of violence, decreasing hospital admissions, and increasing citizen perception of personal safety and community order. Unfortunately, public records for these indicators prior to the adoption of the new policy were not adequate to permit evaluation of these outcomes.

It should be noted that Diadema public records were only available to document the outcomes that are usually the most difficult outcomes to assess statistically. Murder and assaults against women occur less frequently than police calls for service, general fights and civil disorder, and hospital admissions. From a research perspective, as event frequency goes down it becomes more difficult to demonstrate statistical significance of changes in data sets. However, from a policy perspective, these are the events we most want to effect.

In summary, the research protocol in Diadema evaluating the outcomes of the new alcohol policy on limitations on alcohol sales addressed two questions:

1. Does the new alcohol policy prevent murders in Diadema?
2. Does the new alcohol policy prevent assaults against women in Diadema?

Research Results

Diadema has become a safer city.

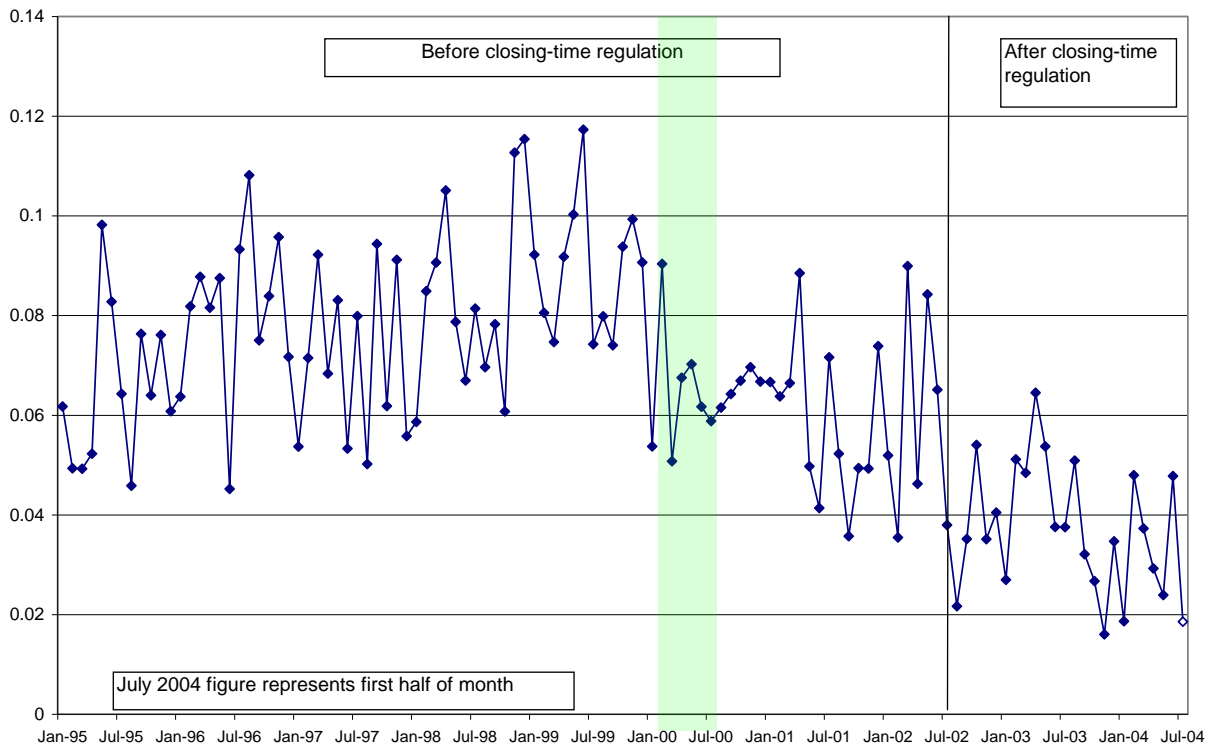
Since January 2000 there has been a steady improvement in public safety and Diadema has become a safer city. The reductions in murder and in assaults against women began before the adoption of the new alcohol policy in July 2002, and these reductions accelerated after the new policy was implemented.

Pacific Institute did not research the factors contributing to the improvements in public safety in Diadema initiated in January, 2000. City officials have reported that police enforcement actions by military and federal police were initiated in the early months of 2000, and the Diadema municipal civil guard was created and deployed in the first six months of 2000. It is not unreasonable to assume that the initial improvements in public safety result from this expanded police activity.

Diadema is preventing eleven murders each month as a direct result of its adoption and enforcement of the new alcohol policy adopted in July, 2002, prohibiting alcohol sales after 23.00 hours.

Independent of the general trend toward becoming a safer city, the new alcohol policy is preventing murders in Diadema. Log-linear models that control for year 2000 intervention impacts and linear time trends demonstrate that the July 2002 alcohol sale limitations prevented an estimated 273 murders over the 24 months following the new policy implementation, or an average of eleven murders per month. This analysis is statistically significant, with a 95% confidence interval ranging from 208 to 338 homicides prevented. These data are presented in the form of a rate per 1000 residents in Figure 1 below.

Figure 1. Diadema, Brazil: Homicides per 1,000 Residents

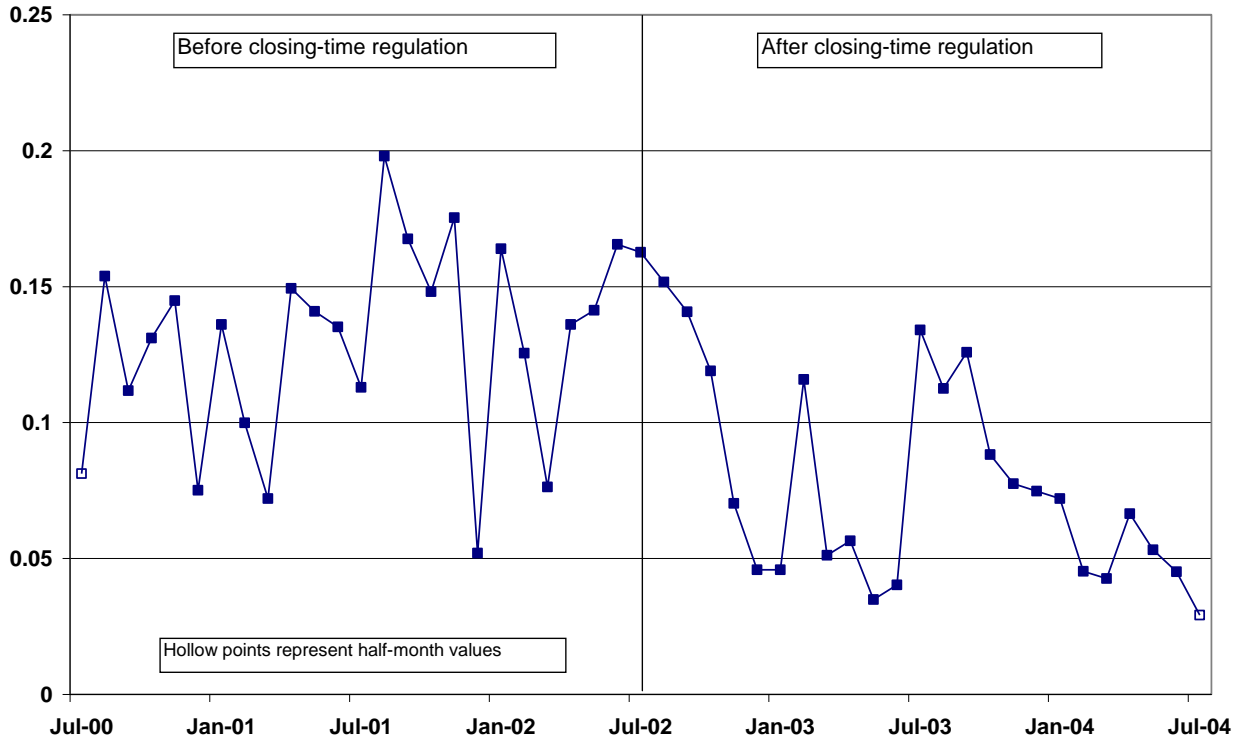


Rates of assaults against women are lower in the two years following adoption and enforcement of the new alcohol policy prohibiting alcohol sales after 23.00 hours, with an estimated average reduction of nine assaults per month. However, because this impact is not easily distinguishable from a general positive trend in increased public safety, these results are not statistically significant.

The good news is that the rates of assaults against women are lower in the two years following the intervention than in the preceding two years, and the analysis coefficients are negative (meaning better) in all interventions. This is consistent with the expectation that control on alcohol sales is related to assaults against women. If Diadema had not been making such commendable progress in improving public safety before adoption of

the new alcohol policy it is highly likely that the results of the new alcohol policy would be statistically significant in preventing assaults against women. However, given the influence of prior trend data on log-linear models, the specific contribution of the new alcohol policy in the further reduction of assaults does not satisfy requirements for statistical significance. In summary, while the evidence suggests that the new alcohol policy prevents assaults against women, this statement cannot be proven scientifically. Figure 2 presents these data as rates of assaults per 1000 residents over time.

Figure 2. Diadema, Brazil: Assaults against Women per 1,000 Residents



Policy Development and Implementation

In addition to its quantitative investigations, Pacific Institute staff conducted a qualitative analysis of policy development and implementation in Diadema. This analysis addressed the basic question of “What lessons can we learn from Diadema that might be of assistance to other cities seeking similar public safety improvements?” The results of this analysis reveal that Diadema provides a textbook example of alcohol policy development and implementation.

Problem Analysis

In response to questions from the Mayor, the Diadema Secretary for Social Defense asked the municipal civil guard to develop a map of criminality in Diadema. The data demonstrated that about 60% of murders in the city occurred between 23.00 hours and 06.00 hours, most frequently in the city neighborhoods with a high concentration of bars.

Murder investigations further revealed that the majority of these crimes were not planned but were “crimes of passion” in response to spontaneous confrontations. Additionally, the data revealed that 45% of complaints about violence against women occurred during these same hours, and these violent acts were highly associated with alcohol consumption. The data analysis demonstrated that violent crime was closely connected to alcohol consumption, most especially during late evening hours.

Problem Response

Public officials in Diadema demonstrated political courage in addressing the nexus of alcohol and violence and creativity in “thinking outside the box” in designing an effective policy based intervention to prevent alcohol-related violence. The international alcohol prevention research literature provides compelling evidence that policy based interventions impacting directly on the context and structure of drinking environments are efficient and effective. Diadema officials developed an intervention strategy consistent with this research evidence. This prevention strategy required that Diadema create new legal precedents through adoption of pioneering municipal law to limit the hours for permitted alcohol retail sales - (Municipal Ordinary Law #2.107 adopted July 15, 2002). As the research evidence now demonstrates, this was an effective policy decision.

Public Education and Support

Political leaders in Diadema developed an active strategy to ascertain and develop public support for the new alcohol policy both prior to and after adoption of the policy. After the problem analysis was completed, Diadema’s Mayor consulted with other political leaders in the community on the findings of the analysis and utilized public opinion polling to confirm community approval (83%) of the proposed alcohol policy prior to its adoption. Following adoption of the municipal law, a colorful and attractive brochure describing the need for and the content of the new law was distributed to all households in Diadema. The public education campaign included use of local news and radio announcements, as well as meetings with community leaders. Recent surveys reveal that 98% of Diadema residents know about the law, and 93% support the new alcohol policy.

Alcohol Retailer Education

Six months prior to scheduled adoption of the new alcohol policy the municipal civil guard visited most alcohol retailers and discussed with the owners the proposed new law and its application to alcohol sales. A second visit was held with retailers three months prior to policy adoption and the owners were asked to sign a declaration that they were aware of the law and the legal consequences of violations.

Active, Equitable, and Honest Enforcement

Recognizing that no policy is effective unless it is enforced, Diadema implemented a program for active daily enforcement of the new law with design elements to thwart opportunities for bribery and corruption. In summary, on a daily basis, the Secretary of Social Defense selects a dedicated enforcement unit comprised of staff selected from

various city departments to assist the municipal civil guard conduct an evening enforcement operation in a specific section of the community. The location of the enforcement action is not announced until the enforcement unit is ready to initiate its evening patrol activities. In addition, special enforcement actions are organized to respond to complaints of illegal alcohol sales received from citizens. An important component of the enforcement strategy includes regular meetings and reports to officers of the municipal civil guard on the effectiveness of enforcement in reducing community violence and informing officers directly of the survey data documenting citizen support for their enforcement efforts.

Progressive Administrative Penalties

There are two features of the Diadema municipal law on alcohol sales which make it particularly effective. First, penalties for violation of the law are adjudicated administratively, not criminally. Second, the penalties are progressive in nature and clearly established in the law. The first violation results in a warning, the second violation in a fine, the third violation is a fine and a temporary license suspension, and the fourth violation in a license revocation. These policies, along with the knowledge that the law is being equitably and honestly enforced, provide honest alcohol retailers with the assurances that they are not being placed at an economic disadvantage by retailers engaged in illegal behavior. This knowledge encourages voluntary compliance with the law.

Accurate Public Records

Diadema's investment and commitment to the complete and accurate collection, inventory, and analysis of public records is vital to the success of the new policy limiting alcohol sales. While the historical records were critical to problem assessment and the design of an effective intervention, these records are also critical to demonstrating to policy makers, city officials and enforcement personnel, and most importantly to the citizens of Diadema, that these prevention initiatives are effective. These social indicator records are also essential to researchers who seek to independently verify the results of city initiatives, to develop new knowledge on the interaction of alcohol policies and alcohol problems, and to generate evidence of effective prevention strategies.

Significance of Findings

The research evidence that Diadema's alcohol policy to prohibit alcohol sales after 23.00 hours prevents approximately eleven murders a month in a city of 350,000 people is, quite frankly, unexpected and very important. The research evidence further suggests that this policy also prevents approximately nine assaults against women each month.

For the citizens of Diadema, its policy makers, and its civil servants, this research will hopefully justify the political leadership, excellent public administration, retailer compliance, and citizen trust required to achieve these documented outcomes. There is strong research evidence that these efforts have made important improvement in public safety and health by preventing significant loss of life and multiple injuries.

It does not require any stretch of the imagination to understand that the experiences of Diadema provide hope and guidance to other communities in Brazil who desire to prevent acts of violence. International research demonstrates that alcohol and violence are inextricably linked. The results of Diadema's efforts provide important evidence that this relationship need not be accepted as immutable. Local communities have it within their power to prevent alcohol-related violence, and the Diadema implementation experience provides an inventory of factors to be considered in such efforts.

The Diadema experience, however, has implications that extend far beyond the borders of Brazil. The Diadema experience provides lessons globally. Within the international research there are a number of published articles on the effects of policies limiting the hours of alcohol sales – but there are no such articles documenting the strength of effects demonstrated in Diadema. In a collaborative effort, researchers at Pacific Institute and at the Universidade Federal de Sao Paulo are preparing a research report on the Diadema experience for publication by a scholarly journal.

Publication of this article will create a research anomaly – why are the results of the Diadema prevention initiative so much more robust than previous published reports of similar interventions? It is possible, of course, that Diadema is unique and replication of these results in other cities cannot be achieved. This is, however, not likely.

Unfortunately, the alcohol prevention research literature preponderantly represents experiences in countries with complex and expansive alcohol control systems. In such contexts, the results of prevention interventions are 'masked' by the presence of multiple intervening variables and the interactions of many, often competing, alcohol policies. The current research in Diadema was not complicated by multiple alcohol control policies. While speculative, it is more likely that the Diadema results will be replicated by further studies conducted in countries with less complicated alcohol control systems than in countries with highly developed alcohol control policies.

The most important significance of the collaborative research completed in Diadema might well be the beginning understanding that the most exciting, the most productive, and the most rewarding opportunities to develop understanding of societal alcohol problems lie, not in highly developed countries, but in communities in the developing countries of the world.

Next Steps

There is nothing that rewards effort better than the taste of success! From the perspective of Pacific Institute, this collaboration has been productive and rewarding. Our colleagues in Diadema and at the Universidade Federal de Sao Paulo have been a joy to work with, personally as well as professionally. We look forward to new opportunities for collaboration.

Acknowledgements and Credits

The following individuals contributed to the development of this report.

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The authors would like to extend their sincere thanks and appreciation to the many public officials and members of the municipal civil guard in Diadema who graciously responded to the many inquiries of the research team. In particular, this project would not have been possible without the encouragement, support and cooperation of the Mayor of Diadema, Jose de Fillipi, Jr., and the Diadema Secretary of Social Defense, Regina Miki.