

Analytics: Unpacking AIDS Policy in the Black Community

Fay Cobb Payton

North Carolina State University, USA

INTRODUCTION

With advances in information technology analytics applications, society stands to benefit greatly from health care innovation. The ability to link physicians, hospitals, pharmacies, clinics, and patients to health information networks and clinical and financial data management and analyses can prove to be invaluable in the diagnosis and treatment of chronic episodes of illnesses such as AIDS/HIV.

This access to data is a necessity in order for hospitals and physicians to provide the highest level of safety and quality of care. Providing the correct diagnosis and procedures is critical for the patient's utmost care. With the high costs associated with AIDS/HIV procedures, medications, and physician consultants, the integration of IT can offset these costs and improve the efficiency of the organizations. Factors such as cost of care and length of stay continue to drive health service delivery, resource availability, and quality of care.

Business analytics (BA), often termed business intelligence (BI), applications can carefully provide insight into the (in)significance of these factors in health care systems' abilities to treat AIDS/HIV in general. In particular, demographic variables that relate to cultural, socioeconomic status and community dimensions of those most impacted (namely, Black Americans in the United States, which is the focus of this writing) by the AIDS/HIV epidemic are often disregarded. For the broader community, the questions to address are diverse. What can business analytics inform us about Black Americans infected by AIDS/HIV? What are the broader cultural issues that often are not modeled by analytical tools? How do these findings stand to impact public policy and how the health care community can better assist those living with the disease? In this chapter, I take on these questions by first reviewing major issues and trends in AIDS/HIV and IT literatures by focusing on health disparities in one historically underserved group; namely, Black Americans. Next, I present public health conceptual framework that augments

this discourse by depicting those factors uncovered in traditional information technology/systems works. This chapter concludes with recommendations for future research opportunities for examining AIDS/HIV public policy issues.

BACKGROUND

According to *Data Bulletin* (2003), between 1991 and 2003, per capita spending on health care in the United States rose almost 95%, with little improvement in national health metrics. Among policymakers, well-regarded media outlets, and others (Kovak, 2005), there is widespread disagreement about a final solution to the problem of rising health care costs. Moreover, there is equally widespread agreement that one element must be a large-scale, systemic change in the uses of information technology for health care management and delivery.

Comprehensive IT systems have improved efficiency and productivity in virtually every major industry, with the conspicuous exception of health care, based on recent RAND reports (Fonkych & Taylor, 2005). Used primarily for administrative tasks such as billing and scheduling, IT offers great promise for use in Electronic Medical Record Systems (EMR-S) or as a clinical diagnostic aid.

The AIDS/HIV epidemic continues to have a riveting impact on the United States. In order to slow the epidemic, analytics enables the field to improve upon its understanding of the dynamics behind the disease. There are an estimated 800,000 to 900,000 people currently living with AIDS/HIV in the United States, with approximately 40,000 new AIDS/HIV infections occurring in the United States every year. More recently, gender has become a significant factor to pay attention to when identifying new cases each year. For several years, men dominated the estimates of new infections; women, in general, are now also significantly affected, and Black women, in particular. Adopted from the

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Centers for Disease Control and Prevention (CDC), Figure 1 shows that 70% of new HIV infections each year occur among men, although women are also significantly affected and hold the other 30%.

With regard to race, more than half of newly affected AIDS/HIV cases occur among Black Americans, although this subpopulation only represents 13% of the total population of the United States. Hispanics, who make up about 12% of the United States population, are also disproportionately affected. Figure 2 shows the estimates of annual new infections according to race. Blacks lead with more than 50%, while White and Hispanics trail behind with significantly lower percentages.

An even more astounding statistic shows that Black women accounted for 72% of all new diagnosed AIDS/HIV cases in the United States. The AIDS diagnosis rate for Black men was nearly 11 times greater than their white male peers, and this rate is 23 times greater for Black women in comparison to white women (CDC, 2005; LaVeist, 2005).

Business analytics (BA) focuses on effective use of these data and information to drive positive business actions such as those already noted. The body of knowledge for this area includes both business and technical topics, including concepts of performance management; definition and delivery of business metrics; data visualization; and deployment and use of technology solutions such as OLAP, dashboards, scorecards, analytic applications, and data mining (<http://www.tdwi.org/>). Analytics technologies reduce uncertainty, predict with precision, and optimize performance, and can be inclusive of forecasting, text and data mining, and statistical methods, just to name a few. These technologies can enable health care organizations to effectively use:

- **Electronic medical records (EMR).** Stores all patient information in a centralized location and allows physicians, nurses, patients, and other clinical staff to access clinical and financial data spontaneously.

Figure 1. Estimate of annual new infections by gender (N = 40,000)

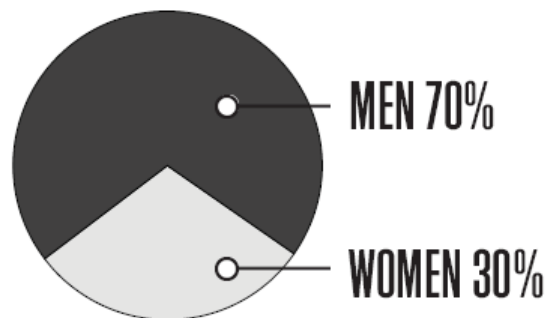
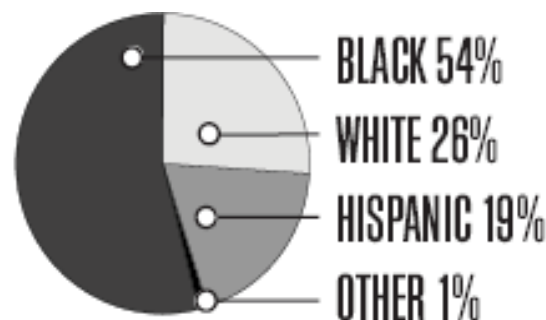


Figure 2. Estimate of annual new infections by race



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