

## Global HIV Prevention Programs for Long-Haul Truckers: Considerations for the U.S.

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### ***Abstract***

*In the United States, an estimated 1.2 million people are living with HIV/AIDS, and approximately 50,000 new cases of HIV are diagnosed each year. Globally, it is estimated that 33.3 million people are living with HIV/AIDS. The role of mobile populations in the spread of STIs and HIV is well-documented in many countries around the world. Long-haul truck drivers in developing countries play a key contributing role in STI/HIV disease transmission. For many global public health programs in other countries, evidence-based practices for HIV/AIDS prevention developed in North America are applied throughout the world. In this article, the researchers suggest applying a reverse approach by translating HIV prevention strategies that have proven effective in the trucker population in other countries to the 3.2 million at risk long-haul truck drivers in the United States. The authors propose implementing HIV education and outreach campaigns in the United States that have been successful in global applications. Strategies such as mobile STI clinics, condom banks and distribution, tailored testing, advertising, peer education, and education and outreach at truck stops and cargo loading areas may prove effective in HIV prevention for this population. Additionally, the utilization of innovative technology methods to provide, for example, intervention education via the Internet; satellite radio may also be beneficial.*

**Key words:** HIV, AIDS, STI, truck drivers, education, outreach, prevention

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## Introduction

In the United States, an estimated 1.2 million people are living with HIV/AIDS, and approximately 50,000 new cases of HIV are diagnosed each year.<sup>1</sup> Globally, it is estimated that 33.3 million people are living with HIV.<sup>2</sup> From an international perspective, countries greatly impacted with those infected and living with HIV/AIDS include Sub Saharan Africa (SSA) with 22.9 million people or 5% of the population, Southeast Asia at 4 million, followed by Latin America and Eastern Europe at 1.5 million.<sup>2</sup> Specific prevalence and incidence rates of HIV/AIDS among US truck drivers are currently unknown; however, one study conducted among a sample of US truck drivers in New Mexico found the incidence rate to be 0.2%.<sup>3</sup> This figure may be grossly underestimated due to undocumented or unknown cases and seropositive conversion rates.<sup>3</sup>

### *Demographics of U.S. Truckers*

According to the US Department of Labor, nearly 2 million long-haul truckers are employed in the United States.<sup>4</sup> Two-thirds of the truck drivers are white, 18.7% are Hispanic/Latino, and 13.4% are black/African American; most (over 60%) are over 35 years of age, and 5.2% are women.<sup>4</sup> As a highly mobile population, truck drivers present a special challenge for public health efforts aimed at preventing and controlling HIV infection.<sup>3,5-25</sup>

Limited U.S. and international research supports that truckers are at an increased risk for physical and psychosocial health problems. Truckers may engage in high-risk behaviors for STIs once they are “on the road” due to opportunity, loneliness, isolation, and long waits at truck inspection sites.<sup>8,10-20</sup> High-risk behaviors include unprotected sex with partners outside of marriage; engaging in anal sex; sexual relations with sex workers; substance abuse and misuse, including intravenous drug use; and gambling.<sup>8,10,20</sup> Workers far away from home may have more opportunity to readily engage in casual sexual relationships while traveling.<sup>20</sup> Moreover, the coupling of substance abuse (truckers sometimes use alcohol, prescription drugs, and marijuana to relax or sleep and cocaine and/or methamphetamine to stay awake on long hauls) and high-risk sexual behavior creates an optimal environment for STI/HIV transmission for these workers.<sup>5-9</sup> Most high-risk sexual behavior occurs at truck stops, lower-end motels, and rest areas with wooded areas or bathroom stalls. More recently such behavior has also occurred

through meeting potential partners on Internet sites such as Facebook, Craigslist, and homosexual trucker sites.<sup>8,9,27</sup>

In addition to engaging in high-risk sexual behaviors, truckers often operate under high-pressure environments filled with the stress of short or strict deadlines, road hazards, and loneliness at a rate greater than the general working population. In general, there are limited to no worksite wellness programs to address these issues. In addition, some truck drivers (at least 8%) are contractors or self-employed and lack access to preventive or wellness resources.<sup>4</sup> Furthermore, as a mobile population, truckers are exposed to and sometimes frequent high-risk establishments along their routes, including adult video stores, legal and illegal brothels, bars/nightclubs, and strip clubs.<sup>8,28-29</sup>

Moreover, because of the transient nature of truckers, linking them with healthcare initiatives is difficult, since they may lack access to healthcare services and a stable health service environment. As most truck drivers are men (94%) - their healthcare utilization can be lower than women based on gender.<sup>4,5,9</sup> In addition – some truckers are self employed (8%) and as such can be either underinsured or not insured at all.<sup>10</sup> Sexual contacts with their spouses (who also may be unfaithful while their partner is on the road) and/or secondary partners may jeopardize the health of the general population.<sup>3,5,7-9</sup>

### *Risk*

Review of the research literature found only 3 published studies examining HIV risk among US truck drivers.<sup>3,6,7</sup> Stratford and colleagues<sup>6</sup> found that nearly one-third of Florida truckers interviewed had engaged in sexual relations with prostitutes (or “lot lizards,” as they are sometimes referred to by truckers). Sexual encounters took place in motels, truck cabs, or brothels; and only 54% of the participants in Stratford’s sample used condoms stating they felt they were ineffective in preventing STIs because the condoms may “break and fall off”.<sup>4</sup> Cook et al.<sup>5</sup> examined an outbreak of syphilis among truck drivers in North Carolina. Counties located along the interstate reported higher syphilis rates than other counties in the state.<sup>5</sup> This may have been at least partially due to truck drivers and sex workers engaging in high-risk sexual behavior, although there were no data to support this correlation.<sup>5</sup>

Valway et al.<sup>3</sup> found in their sample of 652 New Mexico truck drivers that 21% reported having sex with sex workers or casual partners in the prior year, with nearly half of these drivers reporting never having used a condom. Driving solo, history of intravenous drug use, and having had an STI were independently associated with high-risk sexual behaviors.<sup>3</sup> Fourteen percent of the study participants reported drug use in the previous year, and 11% reported having ever injected drugs. It should be noted that drug testing varies per trucking company – some companies mandatory test for drug use prior to hire and/or periodically during employment. Others don't test at all.<sup>3,4</sup> Some participants tested positive for HCV antibodies (8.5%), hepatitis B (10.4%), chlamydia (1.3%), gonorrhea (0.2%), syphilis (0.2%), and HIV (0.2%).<sup>2</sup> Drivers already diagnosed as HIV positive may have self-selected out of the study.<sup>3</sup>

International research on incidence, prevalence, and high risk behaviors for STI and HIV was conducted among truck drivers in Botswana, Brazil, Eastern Europe, East and West Africa, India, Kenya, Mexico, and South Africa.<sup>10-25</sup> Recommendations from this research are highlighted further in the article.

### **HIV Risk Prevention Efforts among U.S. Truck Drivers**

Compared to other nations, few research studies have focused on HIV risk behaviors and prevalence among the 1.8 million long-haul truckers in the United States. Even less attention has been given to the development of HIV prevention programs for this important mobile workforce. Currently, no formal organized strategies for HIV prevention among truck drivers in the United States exist. In this article, we examine best practices among HIV prevention efforts for trucker populations in other countries and how these strategies may be applied to public health education and outreach for truckers in the United States.

### **Global Prevention Strategies**

Although there have been numerous prevention-related programs aimed at reducing the spread of HIV infection in the general population, HIV prevalence rates remain high in many parts of the world. The occurrence of unprotected sex between HIV-positive and HIV-negative individuals fuels the ongoing high rates of HIV infection.<sup>30,31</sup> Correspondingly, research by Crepaz and Marks<sup>30</sup> indicated that globally over 70% of HIV-positive

individuals remain sexually active after diagnosis, and a study by Kalichman<sup>31</sup> found that as many as 84% of those living with HIV/AIDS engage in unprotected sex.

Table 1 lists education and outreach strategies that have been used for STI/HIV prevention among truckers in various regions around the world. The authors suggest considering one or more of these global evidence-based strategies to apply to the at-risk U.S. trucker population.

### **Applying Prevention Strategies in the United States**

The authors propose implementing HIV education and outreach campaigns in the United States that have been successful in global applications. Strategies such as mobile STI clinics, condom banks and distribution, tailored testing, advertising, peer education, and education and outreach at truck stops and cargo loading areas may prove effective in HIV prevention for U.S. truckers. Additionally, the utilization of innovative technology methods, such as interventions via the Internet and satellite radio, may be beneficial.

Many strategies listed in Table 1 could be applied in the United States. For example, education and outreach regarding safe sex practices among sex workers in brothels and truck stops are strategies that have proven to be successful in other countries that perhaps could be effectively applied in the United States. Additionally, radio messages and billboards that are used in other countries could easily be translated or used as a template and targeted toward U.S. truckers, since a considerable amount of time is spent driving (listening to the radio and passing roadside billboards). Furthermore, having staff at roadside clinics could be achievable in the United States, as there are roadside trucker sites and health education specialists available in most all states.

Partnering with local health departments, community-based organizations (CBOs), or health-based HIV/AIDS prevention nonprofits to implement this approach would be important strategy. This strategy proved effective with the Spokane Regional Health Department.<sup>43</sup> Moreover, condom vending machines are currently available in several bars, public bathrooms and subway stations in the United States, making their roadside presence seem feasible for the trucker population. Education and outreach strategies could also be designed for the wives/steady partners of the truckers, since they are at high risk of

HIV. The education could include instilling preventive behavioral patterns of condom use and fidelity within the relationship. Family or partner traveling could also be encouraged, as it could potentially help reduce loneliness/driving solo and the temptation to seek extramarital relationships, which increases risk for U.S. truckers. Peer education programs could be useful at roadside stops or between truckers while they are waiting for their loads; these programs could include information regarding safe sex practices, as well as the reduction of other risk factors for U.S. truckers, such as substance abuse/misuse and gambling. Partnering with health departments, CBOs, and HIV/AIDS nonprofits will again be instrumental in the success of a peer-based program. Specific prevention strategies that could be applied to US population are described below.

### *Special Populations*

It is estimated that close to 6% of truckers are women who often are traveling as part of husband and wife truck driving teams.<sup>5</sup> As shown in India and Brazil, inclusion of women in the outreach efforts through tailored programs that appeal to them will be important in obtaining their participation.<sup>17,19,20,25,36,41</sup> For example, women may be interested in listening to radio dramas on satellite radio like those found in other countries. In addition, peer education, which was proven effective in other countries and highlighted in Table 1, may be an effective outreach mechanism for this population. Additionally, husband/wife teams could pair up with other husband/wife teams for peer education efforts.

Hispanic/Latino men and women are also an important subpopulation of truckers to consider for HIV prevention strategies.<sup>6,7</sup> Key chains, like those used in Mexico with a toll-free hotline public health resources, may be effective in places with high populations of Latino truckers such as Texas, Southern California, and Arizona that provide shipments to and from Mexico and the U.S. Moreover, telenovelas (short, dramatic television programming) are popular among Latino populations; perhaps these could be converted into radio dramas to appeal to this population. Working with a trusted gatekeeper, providing condoms, and ensuring Spanish-speaking health educators as part of the team will be important considerations.

### *Proactivity*

According to the CDC, HIV prevention strategies should be more proactive than reactive.<sup>41</sup> That is, preventive strategies should focus on both the HIV-positive and HIV-negative groups in decreasing HIV transmission.<sup>42</sup> However, it has been challenging to try to develop effective and persuasive messages for HIV prevention in the United States among some highly mobile worksite populations, such as truckers. Targeted prevention strategies based on social marketing techniques, such as those being used in Social Security Administration and elsewhere, would inform and strengthen efficacy among the targeted groups in the United States. Billboards conveying positive health promotion messaging, such as safe sex practices, may also be effective on highways. These billboards could be funded through health promotion organizations, nonprofit HIV/AIDS organizations and local health departments,

### *Community-Based Participatory Research (CBPR)*

We suggest approaching the trucking community collaboratively, using the fundamentals of community-based participatory research (CBPR), involving truckers to identify what will work best for STI/HIV prevention in this population and applying global evidence-based prevention and intervention strategies. For example, the Spokane Health Department in their Trucker Health project found that Citizen Band (CB) radios were actually not an effective medium for this population, with digital radio such as Sirius or XM radio providing a more private medium for health education efforts.<sup>43</sup> Additionally, as found effective for target populations abroad in Botswana, Ghana and India, humorous or lighthearted health messaging or radio mini-dramas may be better received than a bland, informative, lecture-based service announcement. It will also be important for public health researchers and educators to collaborate with trusted gatekeepers to ensure that communication efforts include trucker lingo and jargon. Likewise, the radio messages could be culturally competent to appeal to different populations; separate messages could be targeted toward men, blacks and Men Who Have Sex With Men (MSMs), which are three groupings in the United States with high new HIV infection rates.<sup>1</sup>

### *Trust*

According to Stratford et al.<sup>6</sup>, one of the most important aspects that must be addressed in developing these public health strategies is trust, as mistrust for the government, researchers, and

government-funded projects can be an issue among this population. Testing sites for HIV most likely will not be well attended; however, including screenings for other less-stigmatized health conditions, such as hypertension and diabetes or an overall health risk assessment, may be more effective.<sup>43</sup> For example, Spokane Regional Health District discovered that if HIV/STI screenings are included with general health screenings and ongoing wellness interventions, 93% of drivers would participate, and nearly the same number advised they would try to route back to the same clinic for ongoing follow-up and progress reports.<sup>43</sup> Efforts that include partnering with truck stop churches and other trucker organizations may help to elicit participation in prevention programs by providing connections to the truckers' values and norms. As with outreach strategies in India and Brazil, approaching truck drivers to not only receive information, but also to serve as trained lay health educators who could provide education and outreach to other truckers, may be more effective than providing information through clinicians or public health personnel.

### *Access to Healthcare*

Based on informal interviews with gatekeepers (former truck drivers working with this population for prevention and outreach), access to healthcare was identified as a major concern for truck drivers.<sup>6,26</sup> Even if drivers have health insurance, they reported barriers to access due to job mobility, cost, and scheduling. Initial studies showed that one-third of truckers have no health insurance and of those who do, the majority have found that their insurance does not cover them while they are on the road. With many drivers spending the majority of their time on the road—if not living in their trucks full time—lack of health insurance or inadequate coverage is a significant issue.<sup>3,43</sup> Public health efforts aimed at establishing networks of medical or dental clinics with flexible hours and locations near truck stops may provide improved access to healthcare and health education for this population. Mobile clinics such as Health to Go (SHRD) can be expensive, but—as illustrated in India—may be cost-effectively implemented with education, free condom distribution, and existing resources for free confidential rapid testing at truck stops. Additionally, as seen in Brazil, Indonesia, Kenya, and Namibia, more cost effective versions of mobile clinics could be used to provide free condoms at truck stop restrooms and short educational posters/brochures, coupled with health educators working for 1 day at various truck stop locations. With over 1,000 truck stop plazas located throughout the United States,

truck stops serve as one of the most important physical settings and built environments for providing health-related resources to truckers.<sup>3,9,44</sup> This is also important since many high-risk behaviors occur at truck stops.

### *Access to Health-Related Resources*

In addition to not accessing healthcare, truckers experience barriers related to accessing health-related resources. For example, job mobility and scheduling can provide barriers for truckers. They may not be able to find the resources needed in their travel areas, or the healthcare provider's or clinic's hours may not be flexible with the truckers' varying schedules. On the other hand, due to the mobility of this population, there are some support mechanisms for providing health-related resources. For example, some media, such as radio and Internet, provide portable resources that can reach truckers in nearly every location. Additionally, the abundant availability of roadside truck stops provides potential locations for health-related resources.

### *Technology*

Though not yet implemented in other countries, applications of current technology should also be considered for this hard-to-reach transient workforce. Internet-based resources such as health promotion and health coaching sites, social networking sites (e.g., Facebook), and trucker-specific sites (e.g., eTrucker and Trucknet) offer opportunities for connecting with truckers through their own mobile devices or at Internet kiosks located in truck stops. "Smart phone" applications, such as text messaging and Twitter, and satellite radio networks, such as Sirius and XM, can also be used to distribute and share information about health issues affecting the trucker population. These electronic communications media can be used as effective outreach mechanisms to encourage risk reduction and promote healthy lifestyles. Furthermore, as it was noted that Internet sites such as Facebook, Craigslist, and homosexual trucker sites are sometimes used as vehicles to meet potential partners, these same sites could possibly be used as prevention forums.

### *Conclusion*

HIV prevention and outreach for highly mobile workforce populations calls for translational research utilizing proven best practices and lessons learned in

other countries that can be applied to the 3 million at-risk long-distance truck drivers and loaders in the United States. Given the potential importance and cost-effectiveness of STI/HIV prevention efforts targeted at high-risk groups in contexts where the general prevalence of HIV is generally low, it is important to implement effective assessment strategies for an accurate understanding of the prevalence of STI/HIV.<sup>45</sup> A multifaceted public health education approach, based on evidence-based effective strategies, can be important factors of success for providing STI/HIV prevention for this mobile, often hard-to-reach population. Early screening and rapid testing efforts will also be key among this transient population.

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## Notes

<sup>1</sup>Estimates of World Health Organization (WHO) and the UNAIDS often differ from individual country estimates. This is usually due to incomplete reporting, under diagnosing, and delays in reporting.<sup>45</sup>

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Table 1: Global STI/HIV Education and Outreach Strategies

Author	Type(s) of Outreach	Country (ies)	Explanation of strategy
Family Health International <sup>32</sup>	Comprehensive public health campaign for outreach and care	Burundi, Democratic Republic of the Congo, Djibouti, Ethiopia, Kenya, Mozambique, Rwanda, Southern Sudan, Tanzania, Uganda, and Zambia	Campaign links vulnerable underserved communities along transport corridors in east and central Africa with critical health services. It includes provision of home-based care for people living with HIV/AIDS (PLHA), outreach to vulnerable children, peer-based family planning, health education, and referrals. An example specific to HIV/AIDS outreach: <a href="#">SafeTStop</a> recreation and resource centers offer educational outreach, confidential HIV counseling and testing, and a secure place to relax for truck drivers and other transient workers.
International Marketing Council of South Africa <sup>33</sup>	Primary care, testing, peer education, condom distribution, and outreach	South Africa	Staff at each roadside clinic (nurse, health educator and trained peer educators) provides truck drivers and their partners with after-hours primary healthcare, condom distribution, and education and treatment on HIV/AIDS, tuberculosis and STIs.
Cameron KA, Witte K, Lapinski MK, Nzyuko <sup>12</sup>	Motivational campaigns and condom banks	Kenya	Radio messages and posters were used for the campaigns. Easy access to free condoms at truck stops was provided 24 hours a day, 7 days a week.
Lovell, Pappas-Deluca, Kuhlmann, et al. <sup>34</sup>	Radio serial drama	Botswana	This strategy involved entertainment education via radio serial dramas.
Bosompra <sup>34</sup>	Drama and song	Ghana	Skits and songs with HIV/AIDS themes were written and performed.
Passador, Guirao, Pinto, Barreiros, Feitosa <sup>36</sup>	Peer education	Brazil	Truck drivers as peer health workers distribute condoms, information and counseling to truck drivers as they wait for their loads.
Wilson <sup>37</sup>	Music, educational materials, condoms, and first aid kits	Namibia	Materials included Namibia Alive II: Compact Disc (musical CD) and toolkit with condoms, pamphlets, and first aid supplies. 500 were distributed to truck drivers.
Bronfman M, Leyva R, Negroni <sup>10</sup>	Health communications	Mexico	Campaign uses border crossings for strategic outreach and education efforts.  1. Key chains provided with health

			<p>information hotline numbers.</p> <p>2. Small-group discussions in boarding houses and eating places facilitated by flipcharts and brochures containing information on HIV transmission and condom use.</p> <p>3. Posters on how to use condoms were placed in bars and brothels and HIV awareness stickers were provided to the drivers to place on trucks.</p>
Gupta, Barge <sup>16</sup>	Condom banks and visible STI clinic	India	<p>1. Condom banks were located on the national highway, which included distribution via gas refueling stations.</p> <p>2. STI clinic for truckers was located on the national highway in India.</p>
Muliawan, Wirawan, Sutakertya <sup>38</sup>	Public health education and STI/HIV management	Indonesia	Education, condom promotion/ distribution and STI management was provided at ports.
Bryan, Fisher, Benzinger <sup>39</sup>	Participatory approach	India	Wives and steady partners of truck drivers are included in the development of educational campaigns due to the extreme risk of contracting STIs/HIV.
Joint United Nations Programme on HIV/AIDS (UNAIDS) <sup>40</sup>	Popular media	India	Media involved Bollywood short informational films for bus and rickshaw messaging (in addition to peer education and testing).
Lippman, Pulerwitz, Chinaglia, Hubbard, Reingold, Diaz <sup>20</sup>	Family-friendly interventions	Brazil	Health education efforts aimed at encouraging family travel and family contacts, which may provide a more stable travel environment for truckers, and thus reinforce home-based social norms and reduce the risk associated with travel.