



HEALTH

*CDC-RAND Study:
Evaluation of the Use of Rapid HIV
Testing in the United States*

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Background

- **2006 CDC guidelines for HIV testing of adults, adolescents, and pregnant women recommend universal and routine HIV screening in all public and private healthcare settings, including hospitals and community clinics.**
- **2001 CDC guidelines recommend HIV testing of all at-risk clients of community-based organizations (CBOs) and in outreach settings.**
- **Use of rapid HIV testing is a feasible and acceptable way to:**
 - **increase the number of people screened for HIV.**
 - **increase rates of post-test counseling.**
- **Little is known about the scope of use of rapid HIV tests across different types of health care settings.**

Background

- **Diffusion of Innovation (DOI) theory provides a useful framework to examine the use of rapid testing in the U.S.**
- **An innovation is likely to be adopted to the extent that it:**
 - appears advantageous over existing methods
 - is compatible with existing infrastructure, resources, and norms
 - is relatively easy to use
- **An organization is more likely to adopt an innovation if it has**
 - greater resources (e.g., more staff) to overcome obstacles
 - greater need (e.g., high HIV prevalence)

Goals of the Present Study

- **To determine the scope of rapid HIV testing in the U.S. across private hospitals and private nonprofit community health settings (clinics, CBOs).**
- **To determine barriers to rapid HIV test use among private providers.**

Sampling Overview: PMSAs

- **12 Primary Metropolitan Statistical Areas (PMSAs) randomly selected from each U.S. region (3 per region; West, Northeast, South, Midwest)**
- **Sampling probabilities proportional to each PMSAs AIDS prevalence**
 - **West:** Los Angeles-Long Beach, Oakland, Riverside-San Bernardino
 - **Northeast:** New York, Boston, Newark
 - **South:** Miami, Atlanta, Washington, DC
 - **Midwest:** Chicago, Indianapolis, St. Louis

Sampling Overview: Hospital Survey

- **Universal sample of eligible non-rehabilitation hospitals in selected PMSAs**
 - American Hospital Association Database (n = 649)
 - 22 additional subsidiary hospitals identified that were not on AHA list
- **584 hospitals were interviewed (87% completion rate)**
 - Laboratory staff at all 584 hospitals given brief screener survey to determine scope of rapid testing in U.S.

Procedure: Hospital Survey

- Items assessed rapid HIV test use in hospital
 - Using hospitals were asked:
 - When rapid testing program was implemented
 - Specific departments using rapid testing

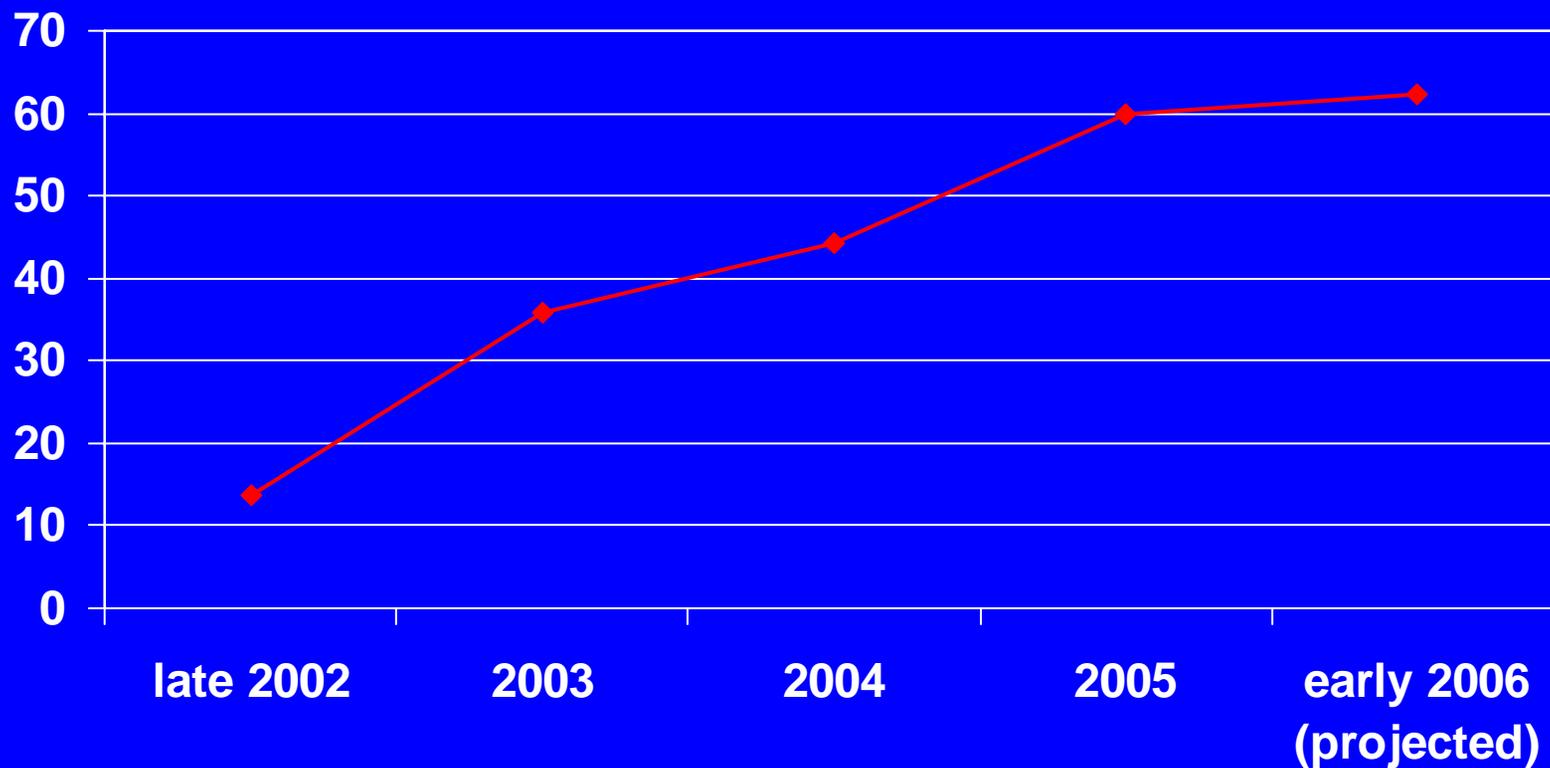
Procedure: Hospital and Community Characteristics

- **Hospital size and resources**
 - **2004 American Hospital Association Database**
 - **Average daily census**
 - **Annual number of births**
 - **Annual number of emergency department visits**
- **Hospital need**
 - **AIDS prevalence of PMSA**
 - **Hospital service area (census data from zip codes)**
 - **Race/ethnicity (% Black/African American and Hispanic/Latino)**
 - **Poverty**

Results

- **52% reported current rapid HIV test availability**
 - **Of those not using, an additional 21% had implementation plans.**
- **50% in occupational health**
- **29% in labor and delivery**
- **13% in the emergency department/urgent care**
- **86% of using hospitals processed rapid tests in the laboratory, versus at point-of-service**

Cumulative Prevalence of U.S. Hospitals Offering Rapid HIV Tests from 2003-2006 (N = 584)



Multivariate Predictors of Rapid HIV Test Availability in U.S. Hospitals (N = 584)

	Hospital	Occupational Hlth
Region		
Northeast	1.45 (0.95, 2.22)+	1.54 (1.01, 2.35)*
South	5.83 (3.75, 9.06)***	6.36 (4.10, 9.88)***
Midwest	3.87 (2.62, 5.72)***	2.70 (1.84, 3.97)***
Service Area		
% Black/Afr Amer.	0.99 (0.98, 1.00)*	0.99 (0.98, 1.00)
% Hispanic/Latino	0.97 (0.96, 0.98)***	0.98 (0.97, 0.99)***
% poverty	1.04 (1.01, 1.08)*	1.03 (1.00, 1.06)+
AIDS prevalence	1.29 (1.08, 1.55)**	1.01 (0.84, 1.20)
Avg. daily census	2.47 (2.16, 2.82)***	2.41 (2.11, 2.75)***

OR = odds ratio; CI = confidence interval + p < .10; * p < .05; ** p < .01; *** p < .001

Multivariate Predictors of Rapid HIV Test Availability in U.S. Hospitals

	ED/UC (N = 498)	L&D (N = 360)
Region		
Northeast	1.47 (0.72, 2.98)	3.05 (1.52, 6.15)**
South	1.84 (0.91, 3.72)+	1.80 (0.89, 3.62)
Midwest	3.49 (1.87, 6.50)***	23.91(12.17,46.98)***
Service Area		
% Black/Afr Amer.	1.01 (1.00, 1.02)	1.01 (0.98, 1.03)
% Hispanic/Latino	1.00 (0.97, 1.01)	0.98 (0.98, 1.02)
% poverty	0.99 (0.95, 1.04)	1.00 (0.96, 1.05)
AIDS prevalence	1.34 (1.04, 1.73)*	2.93 (2.26, 3.81)***
Avg. daily census	1.13 (0.87, 1.46)	1.19 (0.88, 1.60)
ED visits/year	1.59 (1.20, 2.12)**	---
Births/year	---	1.35 (1.02, 1.78)*

RAND + p < .10; * p < .05; ** p < .01; *** p < .001
OR = odds ratio; CI = confidence interval

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Discussion: Hospital Survey

- **Rapid HIV testing increasing in hospitals, but primarily for occupational exposure.**
- **Consistent with DOI, resources and need predicted test use.**
- **High use of rapid testing in lab, despite availability of CLIA-waived rapid test.**
 - **Lab directors may be reluctant for department staff to process test**
- **Hospitals in CA were less likely to use rapid tests, most likely due to regulatory barriers.**

Methods: Clinic/CBO Survey

- **Random sample of clinics and CBOs in PMSAs drawn from:**
 - **List of HIV-related organizations (Infectious Disease Directory) (N = 626)**
 - **Web searches of community clinics (e.g., free clinic list, HRSA list, city-specific lists) (N = 427)**
 - **After de-duplication, 980 sites listed, of which 738 sampled**
- **Eligible if**
 - **Nonprofit**
 - **Direct provider of medical or social services**
 - **Direct or indirect (i.e., referral) provider of HIV tests**
- **Ineligible if for-profit, hospital, public facility, research setting, hospice care, oral care, in-patient only, university clinic, or CDC-funded rapid test demonstration project.**

Methods: Clinic/CBO Survey

- Staff at 586 of 738 sampled sites were contacted between November, 2005 and March, 2006 (79% completion rate)
- 375 eligible (56% community clinics, 44% CBOs)

Methods: Clinic/CBO Survey

- **Using community clinics/CBOs were asked:**
 - **When rapid testing program was implemented**
 - **Specific setting of rapid testing**
 - **Which rapid tests were used**

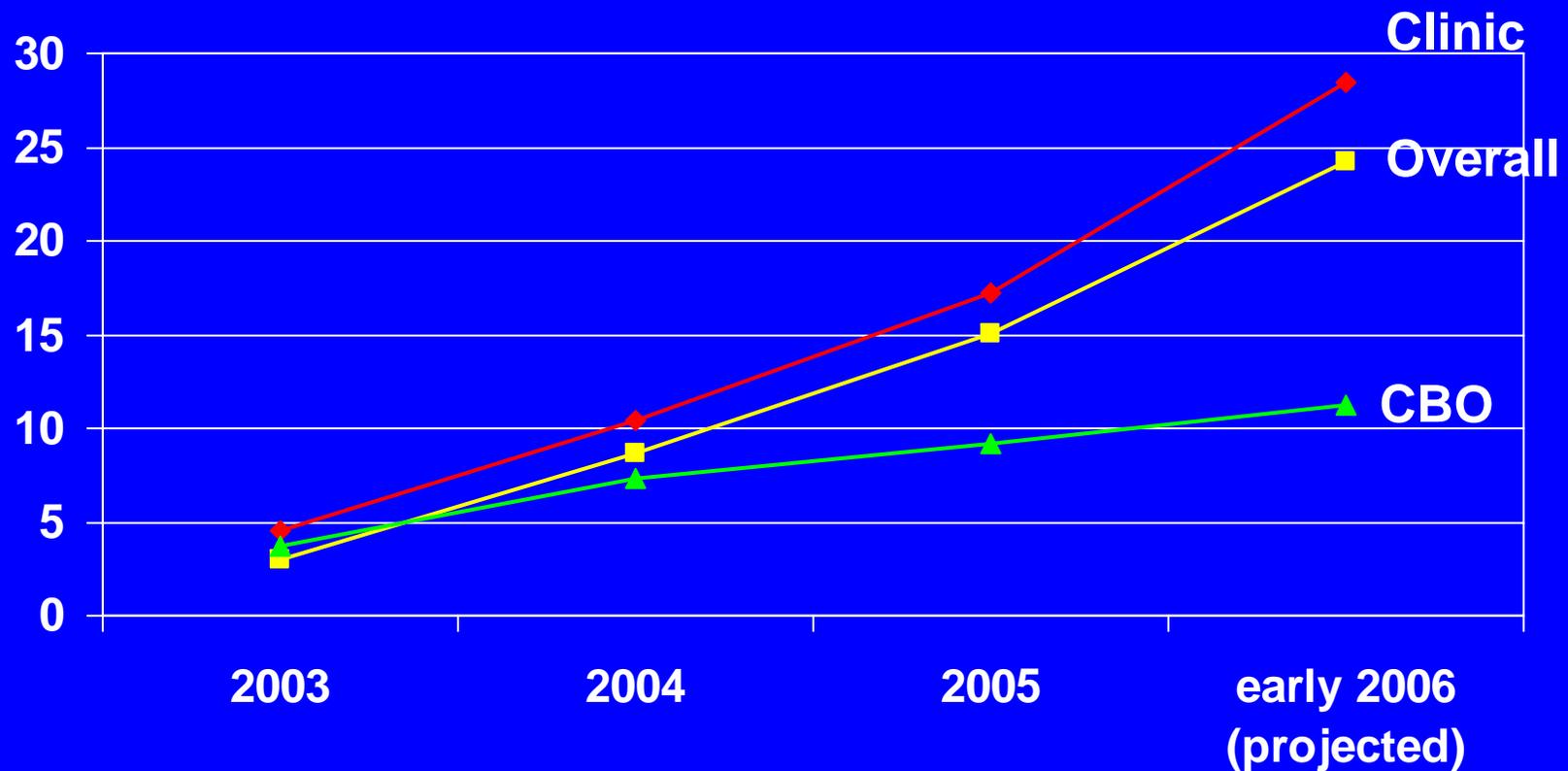
Methods: Organizational and Community Characteristics

- **Organization size and resources**
 - **Survey questions on:**
 - **Number of unique clients served**
 - **Onsite laboratory**
 - **Mobile sites**
 - **Other branches, locations, offices**
 - **Other diagnostic tests provided (in addition to HIV tests)**
- **Need**
 - **AIDS prevalence of PMSA**
 - **Zip codes census data**
 - **Race/ethnicity (% African American/Latino)**
 - **Poverty**

Results: Community Survey

- **17% of community health organizations were using rapid HIV tests.**
 - **Of those not currently using, 30% had plans to start.**
- **Of users:**
 - **92% used rapid tests onsite, 43% offsite.**
 - **42% used rapid test for occupational health.**
 - **All facilities were using OraQuick ADVANCE.**

Cumulative Prevalence of U.S. Community Health Settings Offering Rapid HIV Tests from 2003-2006 (N = 373)



Multivariate Predictors of Rapid HIV Test Availability in 227 U.S. Community Clinics

	Adjusted Odds Ratio (95%CI)
Region	
Northeast	1.98 (0.84-4.62)
South	2.87 (1.22-6.78)*
Midwest	0.63 (0.24-1.67)
Community Characteristics	
% Black/African Amer.	1.00 (0.98-1.01)
% Hispanics/Latino	1.00 (0.98-1.01)
% poverty	1.02 (0.99-1.05)
AIDS prevalence	1.66 (1.17-2.34)**
Site Characteristics	
Large client base (> 2500)	0.96 (0.56-1.64)
Onsite lab	3.10 (1.78-5.42)***
Mobile sites	1.60 (0.92-2.79)+
Multiple locations	1.93 (1.05-3.52)*
Other diagnostic tests	13.35 (1.76-101-01)*

Discussion: Community Health Setting Survey

- **Rapid HIV tests are infrequently used in community health settings, especially CBOs**
- **Many organizations refer clients elsewhere for testing**
 - **Clients may not actually get tested.**
- **Consistent with DOI, capacity for testing was a strong predictor of rapid test use.**

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- **Contributors**
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