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Program-Led Program-Science: The Public Health Impact of the CDC Category C Health Department Model for HIV Prevention

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For maximal public health impact, staff from the disciplines of program and science need to closely work together. For this commentary, we define program as work that builds and maintains a public health infrastructure with policies, plans, and capacity for the provision of essential services and interventions.[1–4] We define science as work that is based on standardized methods of information collection, data management and analysis, continuous quality improvement,[5–7] and information dissemination that includes the domains of surveillance,[8] epidemiology,[9] evaluation,[10] and economics.[11] Two recent strategies in the field of human immunodeficiency virus (HIV)/sexually transmitted infections are helping improve the integration of program and science with science-led activities.[12–15] In this commentary, we summarize results from the use of a different strategy, which integrates program and science with program-led activities.

As part of a new funding cycle that began in January 2012, the Centers for Disease Control and Prevention (CDC) established cooperative agreements with 61 health departments under Funding Opportunity Announcement (FOA) PS12-1201 to conduct comprehensive routine HIV prevention services (known as Category A), which included HIV testing, partner services, and linkage and reengagement to HIV medical care.[1] In March 2012 under this same FOA, CDC awarded 30 of the 61 health departments competitive funding to conduct their own high-impact HIV prevention[16] nonresearch demonstration projects (known as Category C) that had to be consistent with the 2010–2015 National HIV/AIDS Strategy (NHAS).[17] Category C projects were funded for four years through December 2015 and conducted by health departments (24 state, 2 county, and 4 city) in all U.S. Census Bureau regions.

Main outcomes desired from Category C projects included high-impact work and successful work transferred to routine public health practice after the end of Category C funding. Projects involved program and science experts who worked closely together at the local and national levels. Of the 30 health departments, 21 collaborated with universities and 21 collaborated with community-based organizations.

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Primary sources of information used for this commentary included health department applications; semiannual progress reports; final reports; and records from conference calls, e-mails, and site visits. Health departments were required to conduct project activities in at least one of 5 focus areas. The 30 funded health departments conducted activities in the following focus areas: HIV testing (19 health departments), engagement in HIV care (25 health departments), use of HIV surveillance data for programmatic purposes (25 health departments), structural, behavioral, or biomedical interventions (10 health departments), and use of advanced technology (8 health departments). Because each intervention and advanced technology activity was unique, aggregating results from these projects was not possible. Thus, results from these 2 focus areas are not included in this commentary.

To help determine whether the projects were successful in aggregate from a CDC perspective, CDC scientists with expertise in research, evaluation, and program implementation were consulted. Because Category C projects were not research and did not benefit from controlled comparison groups, standardized methodologies across health departments, pre-/postmethodological designs, or the ability to confirm new HIV diagnoses for all testing, alternative approaches to determine success were discussed. Two types of comparisons of quantitative results were used: 1) compare Category C results with Category A results and 2) compare Category C results with a relevant standard (e.g., CDC guidelines for HIV testing in healthcare settings[18]), NHAS goal, or FOA standard, and when no such comparisons were available, then findings from the published scientific literature.

HIV Testing

Of the 19 health departments funded to conduct HIV testing, 9 tested in health care sites and 10 tested in non–health care sites (Table). During 2012–2015, the newly diagnosed HIV positivity at the 9 health care sites was 0.4% (155/34 605) (range, 0.0%–4.5%) compared with a 0.1% minimum of newly diagnosed persons screened in health care sites,[18] which is the threshold recommended by CDC to conduct HIV testing in health care sites and 0.5%, which was the aggregate percentage of all 61 FOA PS12-1201 health departments that conducted routine testing in health care sites as part of Category A funding during the same time period. During 2012–2015, the newly diagnosed HIV positivity at the 10 non–health care sites was 0.9% (185/19 824) (range, 0.0%–4.7%) compared with the 1.0% Category A FOA standard and 0.8% Category A performance of all 61 FOA PS12-1201 health departments that conducted routine testing in non–health care sites during the same time period.

Of these 19 health departments, the most commonly reported example of how health departments benefited from HIV testing activities was improved collaborations and coordination between program and treatment staff (n = 4), and 16 have sustained activities since Category C ended by using alternative funding sources.

Engagement in HIV Care

Eighteen health departments conducted linkage to HIV care (Table), which was defined as a patient who attended an appointment with an HIV medical provider within 90 days of an

HIV diagnosis. Linkage for these health departments during 2012–2015 was 87% (1987/2271) compared with the 85% NHAS goal, 80% Category A FOA standard, and 63%, which was the aggregate percentage of all 61 FOA PS12-1201 health departments that conducted linkage as part of Category A funding during 2013–2015 (only time period comparison data available). Twenty health departments conducted reengagement to HIV care for persons living with HIV who were never in care or who had fallen out of care.[17] Reengagement for these health departments during 2012–2015 was 75% (1485/1987) compared with 69%, which was the aggregate percentage of all 61 FOA PS12-1201 health departments that conducted reengagement activities as part of Category A funding during 2015 (only time period comparison data available). Both NHAS and the FOA did not have a goal or standard for reengagement.

Of the 25 health departments funded for engagement in care, the most commonly reported example of how health departments benefited from these activities was improved collaborations and coordination between program and treatment staff (n = 14), and 20 have sustained activities since Category C funding ended by using alternative funding sources.

HIV Surveillance

The 25 health departments that were funded to use HIV surveillance data for programmatic purposes conducted 54 activities: monitoring and evaluation (n = 18), engagement in care (n = 13) (for which results are included earlier), partner services (n = 6), geo-mapping (n = 6), database merging/warehousing (n =5), interventions (n =4), and improving HIV case reporting (n = 2). Of the 6 health departments that used HIV surveillance data to document outcomes of HIV partner services, 14% (179/1294) of the partners of HIV-infected persons were newly diagnosed with HIV compared with 6% to 14% from other studies that conducted partner services.[19–23] Of these 6 health departments, 2 focused their Category C activities on the statewide use of HIV surveillance data for partner services and achieved a confirmed newly diagnosed HIV positivity of 18% (78/427).

Of these 25 health departments, the 2 most commonly reported examples of how health departments benefited from the use of HIV surveillance data were improved collaborations and coordination among surveillance, program, and treatment staff (n = 12) and more accurate HIV surveillance data due to updates (eg, current locating information and risk factors of the persons who were reported to the HIV surveillance system) provided by program and treatment staff (n = 11). Twenty-one health departments have sustained activities since Category C funding ended by using alternative funding sources.

Conclusion and Implications

We consider many of the methods and results of these program-led program-science demonstration projects successful, primarily because of the multidisciplinary collaboration among surveillance, program, and treatment staff. For example, Category C activities that linked newly diagnosed persons to HIV care and used HIV surveillance data for partner services exceeded results of routine work that was conducted by health departments,[24] national standards and goals,[1,17,18] and results from the literature.[19–23] In addition to the

aforementioned high-impact quantitative results, health departments benefited by having enhanced local collaborations and improved surveillance data, and nearly all health departments have sustained part or all of their Category C activities since the ending of Category C funding.

Too often, health departments wait years for a successful research study to be completed and published and then hope that the methods are suitable for program implementation, which does not always occur.[25] The Category C health department HIV prevention model has an important advantage compared with research. For findings that a health department considers successful or promising, policy and day-to-day practice can be readily changed. This occurred with most of the Category C activities because program-led program-science projects are focused on providing services to clients in a "real-world" setting and because the program staff funding the projects are usually the staff responsible for policy and practice. In sum, quicker and more relevant public health impact is obtained with the Category C health department HIV prevention model. The responsibility for the program staff is to stay engaged with scientists and a continuous quality improvement mind-set, because there will always be opportunities to further enhance public health impact from research and continuous quality improvement activities.[5–7]

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TABLE

Outcomes From HIV Testing and Engagement in Care Activities, CDC-Funded US Health Departments, 2012–2015

PS12-1201 Funding Opportunity Announcement		New HIV Diagnoses From Testing[a]				Linked to HIV Medical Care		Reengaged to HIV Medical Care	
		Health Care Sites		Non–Health Care Sites					
Category	Time Period	# of Health Departments	% (n/N)	# of Health Departments	% (n/N)	# of Health Departments	% (n/N)	# of Health Departments	% (n/N)
C	2012–2015	9	0.4 (155/34 605)	10	0.9 (185/19 824)	18	87 (1987/2271)	20	75 (1485/1987)
A	2012–2015	61	0.5 (22 366/4 666 885)	61	0.8 (16 685/2 220 578)	61[b]	63 (17 965/28 446)	61[c]	69 (4446/6473)

Abbreviations: CDC, Centers for Disease Control and Prevention; HIV, human immunodeficiency virus.

[a] An unknown proportion of positive testing results that were reported as newly diagnosed may represent positive results newly known to the health department but not necessarily confirmed new diagnoses.

[b] 2013–2015 only time period comparable data were available.

[c] 2015 only time period comparable data were available.