CME

Data for Care (D4C) Alabama: Clinic-Wide Risk Stratification With Enhanced Personal Contacts for Retention in HIV Care via the Alabama Quality Management Group

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Background: The Alabama Quality Management Group (AQMG), a consortium of 9 Ryan White–funded part C and D clinics, distributed statewide was established in 2006 under the guidance from the Health and Resources Services Administration with a clinical quality improvement (CQI) focus.

Methods: We describe the origins and evolution of the AQMG, including requisite shifts from aggregate clinic-wide to de-identified individual-level data reporting for implementation of the Data for Care (D4C-AL) Alabama program. The D4C-AL strategy uses a clinic-wide risk stratification of all patients based on missed clinic visits in the previous 12 months. Intermediate (1–2 missed visits) and high-risk patients (>3 missed visits) receive the evidence-informed Retention through Enhanced Personal Contact intervention. We report on a pilot of the D4CAL program in 4 of 33 primary HIV care clinics at the UAB 1917 Clinic.

Results: Among 3859 patients seen between April 2018 and February 2019, the missed visit rate was not significantly different between the D4C-1917 (19.2%) and non-D4C clinics (20.5%) in a preintervention period (May 2017–April 2018). However, a significantly lower missed visit rate was observed in the D4C-1917 vs. non–D4C-1917 clinics during the intervention period (April 2018–February 2019, $P = 0.049$).

Conclusions: The AQMG has been transformed into a health service research and implementation science platform, building on a shared vision, mission, data reporting, and quality improvement focus. Moreover, CQI may be viewed as an implementation strategy that seeks to enhance uptake and sustained use of effective interventions with D4C-AL representing a prototype for future initiatives embedded within extant quality improvement consortia.

Key Words: HIV, AIDS, continuum, retention, missed visits

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INTRODUCTION

The fragmentation of the U.S. health care system is well documented, with administrative (eg, scheduling, coding, and billing) and health services delivery data captured in electronic health records serving as a unifying factor across myriad practice settings, and represents an opportunity for coordinated, concerted, system-level improvements to enhance the delivery, uptake, and quality of HIV services. Governmental departments and agencies are routinely requiring the reporting of systematic data at the individual level and in aggregate to regulate and measure the effectiveness of service delivery. Because data and access to data have improved, health care organizations, providers, and hospitals now have an opportunity to incorporate quality improvement (QI) strategies into their practices. QI, also referred to as clinical quality improvement (CQI), clinical quality management, and other similar terms and acronyms, is an approach that, according to the Health Resources and Services Administration (HRSA), an agency of the U.S. Department of Health and Human Services, involves "systematic and continuous actions that lead to measurable improvement in health care services and the health status of targeted patient groups."[1] In the discourse on implementation science (IS), CQI could be considered an implementation strategy—a set of practices that seek to enhance the uptake and sustained use of evidence-based interventions (eg, antiretroviral therapy) in

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routine care delivery.[2] In the arena of health care and supportive service delivery to persons living with HIV (PLWH), the HRSA HIV/AIDS Bureau (HAB)–administered Ryan White HIV/AIDS Program represents a federal payer of last resort, with systematic client-level data reporting and requirements for CQI for grantees.[3] In this article, we describe the development of a network of HIV service providers in Alabama collectively engaged in first quantifying and then responding to the problem of engagement in care. We use this experience as a case study in illustrating both challenges and opportunities for the spread of, and research on, CQI to improve retention in HIV care.

Origins, Purpose, and Representative Agencies of the Alabama Quality Management Group

The Alabama Quality Management Group (AQMG) is a consortium of quality managers and front-line providers representing all 9 HRSA HAB Ryan White part C and D clinics in the State of Alabama. Member clinics include the following: THRIVE Alabama (Huntsville), Franklin Primary Clinic (Mobile), Health Services Center (Anniston), Medical Advocacy and Outreach (MAO, Montgomery), Unity Wellness Center (Opelika), University of Alabama at Birmingham 1917 Clinic/University of Alabama Center for AIDS Research (UAB CFAR, Birmingham), University of Alabama Family Clinic (Birmingham), University of South Alabama Family Specialty Clinic (Mobile), and Whatley Health Services (Tuscaloosa). This group formed in 2006 at the impetus of the Ryan White HIV/AIDS Treatment Modernization Act of 2006[4] under the guidance of HRSA's Ryan White HIV/AIDS Program Center for QI and Innovation (CQII), formerly the National Quality Center. This policy mandates all Ryan White HIV/AIDS Program recipients to establish CQI protocols addressing their HIV services in alignment with Public Health Service guidelines and strategies to improve access and quality to HIV care.[5] Meeting quarterly, the AQMG, previously developed, iteratively refines and currently implements the statewide Ryan White quality plan for part C and D clinics.

AQMG Aggregate Quality Indicators

Beginning in April 2013, with assistance from the Alabama Department of Public Health (ADPH), the AQMG began collecting and sharing aggregate clinic-level data with the purpose of measuring health outcomes for Alabama's Ryan White recipients. In April 2015, UAB CFAR proposed capturing missed visits in addition to the reported measures adopted from the National Quality Center's in+care Campaign (ie, retention in care by the HRSA's HAB indicator, viral suppression). It was noted that missed visits were uniquely captured by medical clinics and had prognostic value as a robust indicator for increased mortality among PLWH.[6–9] Furthermore, where HRSA's HAB HIV Medical Visit Frequency measures[10] required a 12-month observation period for calculation, clinics could proactively use their own readily available scheduling and administrative and electronic health record data to calculate missed visits in real-time. An aggregate indicator, clinic-wide missed visit rates are calculated by dividing the number of missed visits by the sum of arrived visits and missed visits over a specified interval of time (ie, quarterly), as illustrated below:

$$\text{Missed Visit Rate} = \frac{\text{Number of Missed Visits}}{\text{Number of Arrived Appointments} + \text{Number of Missed Visits}}$$

Data for Care (D4C) Alabama: Origins and Funding

AQMG quarterly data reporting from 2014 through 2017 showed the aggregate mean percentage of missed visit rates to be persistent at around 24% across the 9 participating sites, with little within-site variability (Fig. 1). Aligned with the CQI mission and principles, members were interested in approaches to reduce missed visits in their clinics as a means to improve retention in care, viral suppression, and clinic efficiency. In 2017, the Centers for Disease Control and Prevention (CDC) released the funding opportunity, CDC-RFA-PS18-1802, *PS18-1802: Integrated HIV Surveillance and Prevention Programs for Health Departments*.[11] Collaboratively, with UAB CFAR investigators (M.J.M., A.R., D.S.B., D.L., and E.B.L.), members of the AQMG (J.P. and A.T.) generated a proposal to improve retention in care through the novel approach of clinic-wide risk stratification based on previous missed visits to target delivery of the evidence-informed Retention through Enhanced Personal Contact (REPC) intervention.[12] This approach entitled Data for Care Alabama (D4C-AL) required shifting of data reporting from clinic-level aggregate data to individual-level missed-visit data to allow for risk stratification of PLWH at participating clinics. Individual-level monitoring of missed visits at the site level allows for earlier intervention in the retention in care process, to proactively reduce and rapidly respond to missed visits in real-time.

The capture and reporting of individual-level de-identified data represented a novel process for the AQMG and proved acceptable and feasible for members. Risk stratification based on the individual-level missed visit count in the previous 12 months was similar across the 7 AQMG sites participating in D4C Alabama, with roughly 50% of patients having zero missed visits, 25% with 1–2 and 15% with ≥3 (Table 1). Leveraging the extant strength of data reporting and collaborative mission centered on CQI among the AQMG, the grant was awarded by ADPH. In advance of implementation at other AQMG sites, a pilot study was conducted at 4 clinics at the UAB 1917 Clinic for the

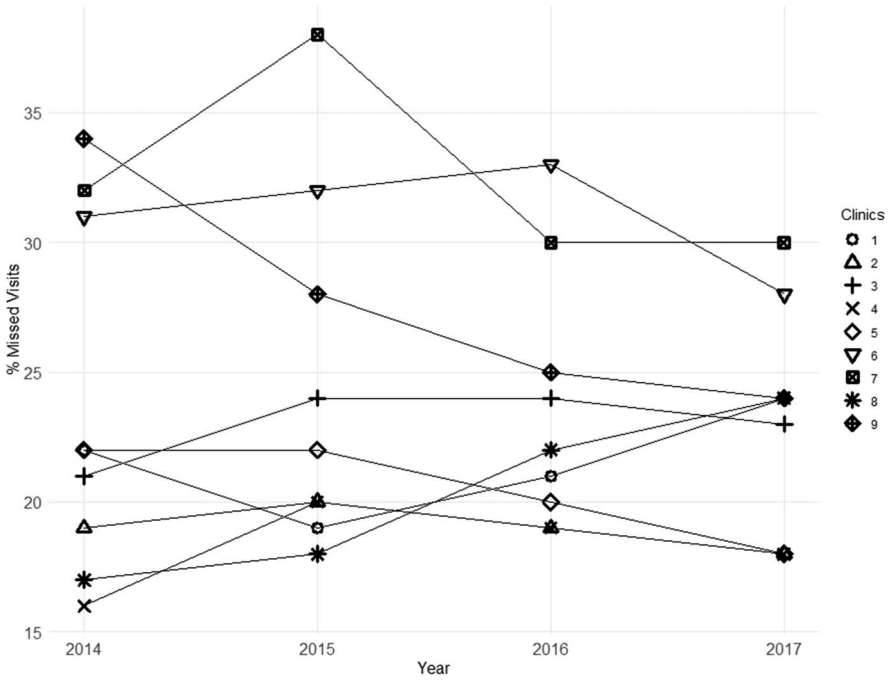

FIGURE 1. Trends in clinic-level missed-visit rates among 9 Ryan White clinics participating in the AQMG, 2014–2017.

purposes of developing and refining processes and procedures to inform more widespread implementation. As a next step, D4C will be taken to scale clinic-wide at the 1917 Clinic, followed by the sequential roll out at participating AQMG sites every 3 months, in a manner mirroring a nonrandomized step-wedge design. This approach was taken so that modifications could be made with lessons learned at a smaller scale, thus saving cost and time, and subsequently allowing for between- and within-clinic program evaluation.[13] What began as a forum for sharing aggregate clinical measures for CQI purposes pivoted to a platform for the conduct of health services and IS projects grounded in a shared vision, mission, and goals, with D4C-AL as a prototype intervention strategy.

D4C Intervention Strategy: Overall Schema

D4C begins with clinic-wide risk stratification based on the count of missed visits for each individual PLWH in the period of 12 months before the individual's next scheduled appointment. The risk categories are low (0 MV), intermediate (1–2 MV), and high risk (≥3 MV) based on empirical data demonstrating the prognostic value of this approach for predicting subsequent missed visits (c-statistic = 0.65).[14] PLWH who are new to clinic with less than 12 months accumulated in clinical care are assigned to the high-risk group. A worklist is then generated assigning each patient to their risk category and matching with the clinic scheduling system for upcoming appointments in the next month. The worklist is utilized by assigned clinic staff to deliver the REPC intervention with proactive reminder calls to the intermediate- and high-risk patients at 6–8 days and again at 1–3 days before a scheduled appointment. Low-risk individuals do not receive enhanced personal contact reminders in advance of scheduled visits. Individuals from all risk groups receive an enhanced personal contact call within 48 hours of a missed clinic visit. In addition to the REPC intervention, individuals in the high-risk group are referred for the best available retention in care resources available in each clinical setting (eg, intensive case management, peer mentoring, and outreach). D4C is designed such that existing clinic staff will serve all programmatic functions including performing the risk stratification data queries, generating a work list, and delivering the REPC intervention. This approach was informed, in part, by past experiences of AQMG representatives in hiring additional personnel for programs through grant funding that was not sustainable upon completion of the grant. The process of clinic-wide risk stratification is repeated monthly, with iterative updating of individual-level missed-visit risk level and worklist to guide intervention delivery (Fig. 2).

TABLE 1. Clinic-Wide Risk Stratification Based on Individual-Level Missed-Visit Count in the Previous 12 Months Among 8314 Patients From AQMG Sites Participating in D4C Alabama, January 2017–March 31, 2019

AQMG Site	0 MV (4273, 51%)	1–2 MV (2882, 35%)	≥3 MV (1159, 14%)
1	2164, 55%	1231, 31%	553, 14%
2	130, 52%	82, 33%	37, 15%
3	613, 59%	354, 34%	78, 7%
4	266, 44%	246, 40%	97, 16%
5	790, 43%	722, 40%	307, 17%
6	93, 50%	68, 36%	26, 14%
7	217, 47%	179, 39%	61, 13%

Data presented as n, row %.

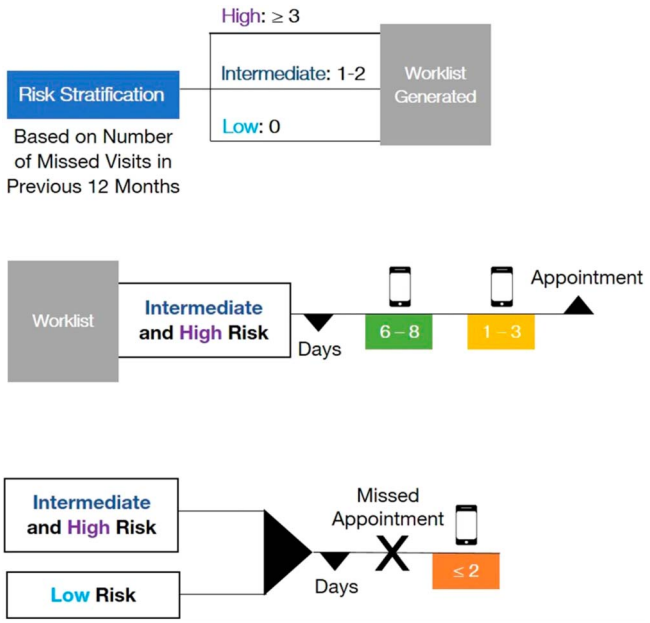

FIGURE 2. D4C schema of clinic-wide risk stratification based on individual-level missed visits in the previous 12 months to develop a worklist for REPC intervention delivery.

Stay Connected and REPC: Evidence-Informed Interventions Utilized for the D4C Strategy

Retention in care, which is directly associated with achieving viral suppression, remains a major challenge for PLWH and health care providers.[15] A CDC/HRSA-sponsored study generated 2 evidence-informed approaches to enhance clinic-level and individual-level retention in care among PLWH through enhanced personal contacts.[12,16] In REPC, interventionists form and maintain a personal relationship with the PLWH in clinical care, which has shown to improve retention in care outcomes.[12] REPC includes enhanced personal face-to-face and phone contact among the patient and the interventionists between appointments. The intention of these interactions is to deliver positive and motivating messages, along with identifying and assisting with any unmet needs and barriers to attending clinic appointments.[12] Stay Connected is a complementary approach that also proved successful in improving clinic-wide retention in care. The Stay Connected intervention is characterized by delivery of messages to all clinic patients during their visit about the importance of staying in care through motivating verbal messages and signage throughout the clinic.[16]

The UAB 1917 Clinic served as one of the 6 study sites for the REPC and Stay Connected trials. Building on these successful interventions, we developed the D4C strategy, incorporating clinic-wide risk stratification and adopting features from both the REPC and Stay Connected interventions. D4C is intended to be a flexible, sustainable, and evidence-based strategy useable in a variety of different HIV clinic settings, with the national Ryan White network of clinics providing an extant infrastructure for implementation and dissemination. Demonstrating the effectiveness of retention in care interventions, such as D4C, and the upstream determinants of successful implementation and sustainability in the South is particularly important because of the disproportionate burden of HIV, the significant health disparities experienced, and the systematic barriers to health care in rural communities compared with other regions of the United States. We will begin to generate evidence on the D4C strategy in collaboration with 7 Ryan White clinics from the AQMG participating in D4C-AL. Next, we report on the pilot D4C intervention conducted at the UAB 1917 Clinic, which henceforth shall be referred to as D4C-1917.

D4C-1917 Pilot Study Methods

D4C-1917 Pilot Design

We sought to evaluate the impact of the D4C pilot intervention on the proportion of missed visits in 4 pilot HIV primary care clinics within the UAB 1917 Clinic (D4C-1917 clinics) compared with the rest of the HIV primary care clinics where D4C-1917 was not implemented (non–D4C-1917 clinics, n = 33). The D4C protocol (Fig. 2) was implemented in the 4 pilot clinics in April 2018 and was subsequently rolled out clinic-wide to the other 33 primary HIV care clinics in February 2019.

D4C-1917 Pilot Intervention Delivery

At the 1917 Clinic, enhanced personal reminder phone calls were made for individuals in the intermediate and high-risk categories by the front desk staff at 6–8 days before and again by the patient's social worker at 1–3 days before the next scheduled appointment. Consistent with REPC, the intention of these calls was to remind the individuals of their upcoming appointment, to ask about any barriers that were limiting these individuals from attending the appointment, and to assist these individuals with overcoming barriers by providing resources such as transportation, food assistance, and housing through communications requisite to building supportive relationships between clinic staff and patients. Front desk staff conducted the 6- to 8-day calls because they have access to the scheduling system, streamlining the process for individuals who need to reschedule an appointment. Social workers conducted the 1- to 3-day reminder calls (closer to the appointment) because of their expertise in identifying not only readily apparent but also hidden barriers that may exist for PLWH under their care. Missed visit follow-up calls were made by the linkage and retention coordinator within 48 hours of missed visit, regardless of risk category. The purpose of these calls was to inquire about reasons for the missed visit, to link to resources to assist with clinic attendance barriers, and to reschedule the appointment.

D4C-1917 Pilot Statistical Analyses

Data were abstracted from the electronic medical record and visit scheduling system between May 2017 and February 2019, when the D4C-1917 was implemented in all 33 HIV primary care clinics within the UAB 1917 Clinic. The study period was divided into 2 periods, preintervention (May 2017–Mar 2018) and intervention (April 2018–February

2019). Individuals with at least one scheduled visit during the study period were included in the analyses.

We used frequency and percentages and medians and interquartile ranges to describe patient characteristics of the D4C-1917 and the non–D4C-1917 clinic populations. Gender, race/ethnicity, primary HIV risk factor, insurance status, marital status, housing status, and monthly income as categorical and age at the time of D4C-1917 implementation as a continuous variable were reported. Gender was categorized as male, female, and transgender. Owing to a small number of individuals reporting race/ethnicity as Hispanic, Asian, Multiracial, Native Hawaiian or Pacific Islander, and American Indian or Alaska Native, they were categorized into one category called "other," with non-Hispanic white and non-Hispanic black as their own separate category. Primary HIV risk factors included heterosexual sex, intravenous drug use, homosexual (men who have sex with men), and vertical (mother to child during pregnancy). Insurance status was the insurance reported at the first 1917 Clinic visit and was categorized as private, public, and uninsured. Marital status was categorized into single, married, and divorced/widowed. Housing status was categorized into permanent and non-permanent, with the inclusion of institutionalized individuals in the latter. Any reported monthly income of >$15,000 was considered incorrect and was labeled as "unknown." The known monthly income was then categorized into ≤$800, $801–$1200, $1201–$2000, and >$2000. The age was reported in years and was calculated exactly at the time of the D4C-1917 implementation (April 1, 2018).

To assess the impact of the D4C-1917 intervention, we examined trends in the proportion of missed visits stratified by D4C-1917 and non–D4C-1917 clinics for the preintervention and the intervention period. Generalized estimating equations, clustering by individuals, with modified Poisson regression with D4C-1917 implementation period, intervention status (D4C-1917 vs. non–D4C-1917 clinics), and D4C-1917 implementation period by intervention status interaction were used to compare the difference in rate of missed visits in the preintervention and the intervention period. All analyses were conducted in SAS 9.4.

D4C-1917 Pilot Study Results

During the study period, 3859 unique individuals who had at least one scheduled visit were included in the analysis. The median (IQR) age of the study population was 47 (35, 56) years, with 76% men, 65% non-Hispanic blacks, 52% reporting homosexual sex as their primary HIV risk factor, and approximately 90% reporting their housing status as permanent. The average number of visits per month was 95 for D4C-1917 and 782 for non–D4C-1917 clinics for the study period (Table 2). The median age of individuals at the time of D4C-1917 implementation among the 2 clinic types was similar. However, more individuals in the D4C-1917 vs. non–D4C-1917 clinics reported non-Hispanic white as their race, homosexual sex as their primary HIV risk factor, and >$2000 as their monthly income. More individuals in the non–D4C-1917 vs. D4C-1917 clinics reported non-Hispanic black as their race, heterosexual sex as their primary HIV risk factor, having private insurance, and having ≤$800 as their monthly income.

TABLE 2. Descriptive Statistics for the 3859 PLWH in the D4C-1917 vs. Non–D4C-1917 Clinics for the Pilot Study, April 2018–February 2019

	D4C-1917	Non-D4C-1917
Age*	45.9 (34.6, 55.3)	47.1 (35.1, 55.7)
Gender†		
Male	308 (78.0)	2622 (75.7)
Female	84 (21.3)	802 (23.2)
Transgender	3 (0.8)	40 (1.2)
Race/ethnicity†		
Non-Hispanic white	143 (36.2)	1087 (31.4)
Non-Hispanic black	235 (59.5)	2273 (65.6)
Other	17 (4.3)	96 (2.8)
Unknown	0 (0.0)	8 (0.2)
HIV risk factor†		
Heterosexual sex	129 (32.7)	1305 (37.67)
IVDU	28 (7.1)	250 (7.22)
Homosexual sex	221 (56.0)	1776 (51.3)
Vertical	0 (0.0)	3 (0.1)
Unknown	17 (4.3)	130 (3.8)
Insurance†		
Private	147 (37.2)	1383 (39.9)
Public	83 (21.0)	882 (25.5)
Uninsured	44 (11.1)	384 (11.1)
Unknown	121 (30.6)	815 (23.5)
Housing status†		
Permanent	342 (86.6)	3073 (88.7)
Non-permanent	47 (11.9)	372 (10.7)
Unknown	6 (1.5)	19 (0.6)
Monthly income†		
≤$800	82 (20.8)	875 (25.3)
$801–$1200	65 (16.5)	607 (17.5)
$1201–$2000	80 (20.3)	711 (20.5)
>$2000	93 (23.5)	655 (18.9)
Unknown	75 (19.0)	616 (17.8)
Marital status†		
Single	295 (74.7)	2464 (71.1)
Married	53 (13.4)	500 (14.4)
Divorced/widowed	19 (4.8)	282 (8.1)
Unknown	28 (7.1)	218 (6.3)

*Median (Interquartile range).
†N (%).
IVDU, intravenous drug user.

The missed visit rate between the clinics (D4C-1917 vs. non–D4C-1917) was not significantly different in the preintervention period (D4C-1917: 19.2%, non–D4C-1917: 20.5%) before D4C-1917 implementation at the 4 pilot clinics. However, a significantly lower rate of missed visit was observed for the D4C-1917 clinics when compared with the non–D4C-1917 clinics (D4C-1917: 18.5%, non–D4C-1917: 23.0%, $P = 0.049$) in the intervention period (Fig. 3). The observed difference in missed visits in the D4C-1917 provides initial evidence to the support this approach, with scale up of the D4C approach clinic-wide at the UAB 1917 as the immediate step in anticipation of subsequent dissemination at other participating D4C-AL sites.

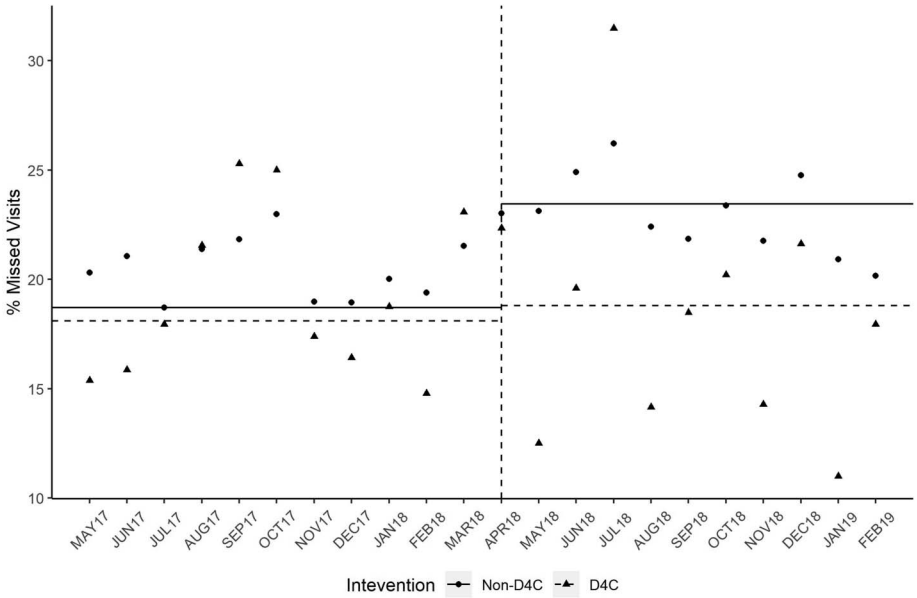

FIGURE 3. Trends in the rate of missed visits (D4C-1917 vs. non–D4C-1917) in the preintervention and intervention period. *Preintervention period: May 2017–March 2018; intervention period: April 2018–February 2019. *The points represent the monthly average missed visits for the D4C-1917 (triangle) and non–D4C-1917 (round) clinics. *The lines represent the percentage missed visits for each time periods (preintervention and intervention) for D4C-1917 (dashed) and non–D4C-1917 (solid) based on the fitted model.

DISCUSSION

D4C Alabama: Next Steps

All AQMG clinics participating in D4C-AL convene quarterly coinciding with the standing AQMG meetings, in addition to scheduled and ad hoc communication including emails, webinars, and conference calls. D4C programmatic materials such as the intervention training manual, the data management protocol, and the data codebook were developed in tandem between investigators housed at UAB CFAR and stakeholders and data managers representing the other sites. All data elements, except for the appointment reminder data and appointment disposition data (eg, arrived, no show), are mapped to client-level Ryan White reporting measures for ease of data reporting. Each site uploads their de-identified client-level data quarterly to UAB through a secure site. For appointment reminder calls, a REDCap instance was created by UAB for use at AQMG sites to both generate D4C worklists and also to document reminder calls, essential for program evaluation. Stay Connected trainings were conducted at all 6 participating AQMG clinic sites between August and October 2019. Subsequently, the UAB CFAR team will conduct on-sites trainings for the D4C strategy and REPC intervention at 2 sites per quarter, with the subsequent roll out of the D4C program at 3-month intervals.

D4C Alabama: Implementation Framework, Strategy, and Outcomes

The D4C implementation strategy uses a clinic-wide risk stratification to tailor the delivery of the evidence-based REPC intervention to patients at greatest risk of missing visits and subsequently becoming disengaged from medical care with nonsustained viral suppression. A RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) evaluation framework will be used to assess vital implementation outcomes to further inform critical determinants of successful dissemination of the D4C strategy in Ryan White clinics in other localities. In terms of Reach, 7 of the 9 AQMG sites agreed to participate in the D4C-AL program. We will further assess reach of the D4C program to PLWH at participating sites to determine the penetration, characteristics and representativeness of those engaged in this intended clinic-wide initiative. Effectiveness will be assessed for missed visits, retention in care, and viral suppression, with planned subgroup analyses (eg, by age, race/ethnicity) to assess overall and subgroup effects. Adoption of D4C at participating sites will include assessment of staff participation in engaging in D4C programmatic activities. Although a distributed approach to making enhanced personal contact phone calls was implemented at the UAB 1917 Clinic (eg, front desk staff, social workers, and linkage and retention coordinators), each site will have the flexibility in assigning clinic staff for these functions at their site according to roles, responsibilities, expectations, and reporting. Some clinics may similarly choose to distribute these responsibilities across numerous clinic staff, whereas others may assign a single individual or more limited number of persons to implement D4C-AL at their site. Implementation evaluation will include assessment of sites' capability to generate risk stratification and work lists, fidelity of risk stratification in assigning appropriate risk group, and fidelity of staff in making enhanced personal contact calls, as well as the disposition of these calls. These implementation measures are vital to the interpretation of overall effectiveness outcomes for missed visits, retention in care, and viral suppression and will allow us to unpack findings—whether the D4C strategy is effective or not. Maintenance will be iteratively assessed longitudinally to determine on-going D4C program activity, adaptation, and drift at participating sites. Finally, qualitative methods will be used to better understand adoption, implementation, and maintenance from multiple stakeholder perspectives at sites, to identify elements of success as well as unintended negative outcomes.

Looking to the Future: CQI and AQMG as an IS Strategy and Platform, Respectively

Building on the successful collaboration of D4C-AL in transforming the AQMG into a platform for health services and IS studies, new opportunities will emerge. Administrative supplement funding from the NIH in support of the federal Ending the HIV Epidemic initiative has provided a next opportunity to leverage the AQMG to advance science.[17] Under the "Prevent" pillar of Ending the HIV Epidemic initiative, UAB CFAR investigators will support the AQMG in developing a client-level reporting structure for PrEP, analogous to the data reporting for PLWH established through D4C-AL. This will allow for new collaborative opportunities not only to monitor PrEP uptake and delivery statewide but also to develop, deploy, and evaluate programs aimed at increasing PrEP initiation and persistence. In the discourse on IS, this speaks to an expanded paradigm of CQI as an implementation strategy aimed at increasing the uptake and sustained use of effective interventions (eg, PrEP), leveraging extant QI initiatives and consortia to expand reach, and increasing external validity.

Going forward, building on a foundation of shared data, as well as alignment of vision, mission, and goals, the engagement of nontraditional research partners via the AQMG has allowed the UAB CFAR to engage and collaborate on IS protocols and programs. This partnership allows for new opportunities for implementation and evaluation of innovative initiatives, essential to our success in dramatically curbing the domestic HIV epidemic in the coming decade, and may serve as a prototype for HIV CQI consortia in other jurisdictions and states in the United States.

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