

OPEN

# Health Communication and the HIV Continuum of Care

Sten H. Vermund, MD, PhD,\* Elizabeth C. Mallalieu, MPH,† Lynn M. Van Lith, MPA,‡  
and Helen E. Struthers, PhD‡

**Abstract:** Health communication is a broad term that applies to the fundamental need for practitioners, policy makers, patients, and community members to understand one another around health promotion and health care issues. Whether in a consultation between nurse and patient, a health clinic director's engagement with the health ministry, or a community campaign for encouraging HIV testing, all have critical health communication elements. When people's needs are not perceived by them to be addressed or clients/patients do not understand what is being communicated, they are unmotivated to engage. Health communication may be deployed at multiple levels to encourage positive behavior change and affect HIV treatment outcomes. As countries move to treatment for all as soon as possible after testing, health communication can help address significant losses at each stage of the HIV continuum of care, thereby contributing to achieving the 90-90-90 global treatment goals. This *JAIDS* supplement presents compelling studies that are anchored on the health communication exigencies in highly diverse HIV and AIDS contexts in low and middle income settings. Our special focus is health communication needs and challenges within the HIV continuum of care. We introduce the supplement with thumbnails summaries of the work presented by an experienced array of public health, behavioral, and clinical scientists.

**Key Words:** health communication, HIV testing, HIV continuum of care, treatment, retention, Africa

(*J Acquir Immune Defic Syndr* 2017;74:S1–S4)

This supplement of *JAIDS* provides a compilation of health promoters and their professional allies' experiences in the field of HIV care and prevention. It is an extension and follow-up to the 2014 *JAIDS* Supplement entitled "Health Communication Strategies in Combination HIV Prevention and Care Programs."<sup>1</sup> Both supplements have been inspired by

efforts of the Health Communication Capacity Collaborative.<sup>2</sup> Every element in the prevention or care of HIV depends on health communication success. Most of its focus is on work across the HIV continuum of care, or care cascade, from HIV testing to linkage to care and further to commencement of antiretroviral therapy (ART) and lifelong retention in care with high adherence to medications with the goal of viral suppression. Given changes in World Health Organization guidance to focus on treatment for all, social and behavioral interventions play an important role in addressing the significant losses at each stage of the continuum of care, which constitute a key barrier to achieving the 90-90-90 global treatment goals.

Behavior, such as going for an HIV test, is influenced by multiple factors or social determinants, often simultaneously. These include knowledge and attitudes about testing, perceived risk of HIV infection, self-efficacy to protect oneself from HIV, emotional reactions such as fear of transmitting HIV to an unborn child, and perceived social and gender norms around testing, among others. Understanding these behavioral drivers helps influence them and appreciates the complexities underpinning human decision making.

In the context of HIV, communication can motivate people to get tested, obtain their results, promote access to treatment, link people living with HIV to care, support retention in care, and help reduce stigma. Reducing barriers to action and making the long-term benefits of a behavior, adherence to ART, eg, salient in the short term, can enable people to take action and seek much-needed HIV-related services. Health communication may be deployed at multiple levels to increase the frequency and quality of interpersonal communication in clinical settings and in homes and communities.

The primary goal of this supplement is to highlight the evidence and build momentum around the impact of health communication and behavioral interventions on treatment outcomes in low and middle income countries. Researchers representing multiple sectors, countries, and perspectives have contributed their examples of how communication has improved HIV treatment outcomes in an effort to foster a multidisciplinary dialogue, advance global knowledge, and provide guidance to the field. By examining clinical interventions through a behavioral lens, a more complete picture of the multiple factors that yield impact may be obtained. This supplement also emphasizes results of President's Emergency Plan for AIDS Relief investments in implementation science that have encouraged studies that address HIV technical area-specific program areas and demonstrate how to strengthen the integration of programs across the prevention, care, and treatment continuum.<sup>3</sup>

In the opening article of the series, Babalola et al<sup>4</sup> present "*A framework for health communication across the*

From the \*Vanderbilt Institute for Global Health and Department of Pediatrics, Vanderbilt University School of Medicine, Nashville, TN; †Johns Hopkins Center for Communication Programs, Baltimore, MD; and ‡Department of Medicine, Anova Health Institute, Johannesburg, South Africa and Division of Infectious Diseases and HIV Medicine, University of Cape Town, Cape Town, South Africa.

The authors have no funding or conflicts of interest to disclose.

Correspondence to: Sten H. Vermund, MD, PhD, Vanderbilt Institute for Global Health, 2525 West End Avenue, Suite 750, Nashville, TN 37203 (e-mail: sten.vermund@vanderbilt.edu).

Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

*HIV treatment continuum.*” Behavioral determinants are presented at several levels of the social–ecological model: intrapersonal, interpersonal, health services, community, and policy. Highlighted are the most common health communication interventional approaches, including mHealth, interpersonal communication through service providers and peers, community support groups, and treatment supporters. The authors present a strong rationale for why health communication is an essential element of HIV care continuum success and provide a conceptual foundation with which to ground the supplement and guide future programming efforts. The remaining articles share data on the communication agenda for different elements of the care cascade.

Morton et al present an innovated “*Counseling framework for HIV-serodiscordant couples on the integrated use of antiretroviral therapy and pre-exposure prophylaxis for HIV prevention.*”<sup>5</sup> The goal was to offer HIV-serodiscordant couples an integrated delivery of ART for HIV-infected partners and 6 months of pre-exposure prophylaxis (PrEP) for HIV-uninfected partners, long enough for the infected partner to become noninfectious. The Partners Demonstration Project offered this intervention to 1013 serodiscordant couples in Kenya and Uganda, ART to eligible HIV-positive partners, and PrEP to HIV-negative partners before ART initiation and through the HIV-positive partner’s first 6 months of ART use. Counseling sessions were comprehensive and focused on the specific demands of lifelong ART and of 6 months of PrEP, emphasizing joint counseling for serodiscordant couples. The authors conclude that the counseling agenda was all important for programmatic success in the treatment-as-prevention arena, even as infected persons are nurtured to reduce HIV pathogenesis with the use of ART.

Mabuto et al<sup>6</sup> described “*Effective interpersonal health communication for linkage to care following HIV diagnosis in South Africa.*” Their strategy was to develop a style of interpersonal “precision health communication,” which they evaluated through qualitative analyses of transcripts from 28 clients from a communication strategy arm of a randomized trial to accelerate care initiation in South Africa. The authors identified key themes of interpersonal communication between client and counselor specific to the client’s background, including healthy pregnancy issues, potential barriers to entry into care, and partnering with the client to consider how to overcome challenges in accessing and continuing in care. The authors highlight how this alliance, reminiscent of the information–motivation–behavioral skills model,<sup>7</sup> can increase receptiveness to messages by focusing on individual client concerns.

Sutton et al<sup>8</sup> reported on the “*Feasibility and acceptability of health communication interventions within a combination intervention strategy for improving linkage and retention in HIV care in Mozambique.*” A communication intervention embedded in a combination intervention strategy to increase linkage to and retention in care among newly diagnosed persons was developed and evaluated within the Engage4Health study. The 2 health communication interventions included a modified delivery approach for pre-ART counseling sessions and SMS reminders. These were combined with 3 structural interventions: point-of-care

CD4<sup>+</sup> cell count testing, prompt ART initiation, and noncash incentives. The authors used a process evaluation framework to report the success of delivering pre-ART counseling and SMS reminder dissemination, with somewhat lower success in coverage with the structural intervention elements. Participants reported pre-ART counseling and CD4 testing as the most useful and noncash incentives as the least useful for linkage and retention.

Hirsch-Moverman et al<sup>9</sup> described “*Using m-Health for HIV/TB treatment support in Lesotho: Enhancing patient-provider communication in the START Study.*” The START study used real-time adherence support by means of SMS text messaging and trained village health workers to maximize ART initiation and retention. The authors evaluated the use of mHealth tools from process data, including assessing acceptability via monthly follow-up interviews with all participants, and qualitative interviews with a subset of patients and health care providers. Over 28 months, the automated SMS system delivered 39,528 messages to 633 patients and 202 treatment supporters. Uptake was 92.1% among 713 eligible patients. The authors perceived this low-technology user-friendly mHealth intervention for HIV/TB treatment support to be highly acceptable to both patients and health care providers.

Lippman et al<sup>10</sup> have described “*Community mobilization for HIV testing uptake: results from a community randomized trial of a theory-based intervention in rural South Africa.*” The 22 communities were randomized into a theory-driven multifaceted 2-year community mobilization intervention or into standard activities (control). Testing improved with time in all communities, and the intervention did not seem to matter. However, within the intervention communities and not the control communities, testing was more common among persons exposed to the community mobilization intervention. These results illustrated the difficulty in diffusing impact within communities beyond the individuals actually exposed to the intervention.

Lyons et al<sup>11</sup> described “*The potential impact of integrated stigma mitigation interventions in improving HIV/AIDS service delivery and uptake for key populations in Senegal.*” Men who have sex with men (MSM) and female sex workers (FSW) in Senegal were the target populations for the HIV Prevention 2.0 study that assessed the impact of an integrated stigma mitigation intervention to optimize HIV service delivery in Senegal. Over 24 months, 758 FSW and 724 MSM participated in the baseline assessment. Among MSM, fear of seeking health services declined with time, though biased retention may have contributed to this. Similarly, this fear declined among FSW over time, though loss to follow-up again may have biased this finding, ie, more willing persons persisting in the study. Most MSM (63.9% of 97) and FSW (82.5% of 143) reported that the intervention helped in mitigating stigma.

Kerrigan et al<sup>12</sup> present their “*Project Shikamana: Community empowerment based combination HIV prevention among female sex workers in Iringa, Tanzania.*” Project Shikamana is an ongoing phase II community randomized controlled trial conducted in Iringa, Tanzania, to evaluate the effectiveness of a community empowerment-based

combination HIV prevention approach among FSW. Study outcomes are viral suppression among the HIV-infected and remaining free of HIV among HIV-uninfected women. A cohort of 496 FSW is being followed. Despite very high (40.9%) baseline HIV prevalence, only 30.5% of 203 HIV-infected women were previously aware of their HIV status, 21.2% were on ART, and only 14.8% were virally suppressed. Among the many factors predicting infection and/or coverage within the continuum of care, social cohesion was beneficial for viral suppression, suggesting a novel avenue for peer-based health communication among FSW themselves.

Orr et al<sup>13</sup> describe the “Development of a national campaign addressing South African men’s fears about HIV counselling and testing and antiretroviral treatment.” In their qualitative interviews, avoidance of both HIV testing and, if HIV infected, initiation of ART were strongly anchored in fear of compromised masculinity, the potential for rejection within their communities, and the stress of knowing that they had a stigmatizing and potentially fatal infectious disease. The urgency to engage men as to the benefits of knowing one’s status and life-saving qualities of ART will be anchored on better health communication strategies.

Health communication is such a fundamental part of public health, nursing, and medicine that is often overlooked as a distinct research priority resulting in a lack of evidence-based models to use in interventions to improve the HIV prevention and care cascades. Many programs are promulgated without a strong evidence base, but needed research in this field is being published to assess program efficacy or effectiveness.<sup>14–26</sup> As evidenced in these articles, combinations of effective health communication with skill building and structural interventions are immensely promising lines for implementation science research and ultimate service delivery.<sup>27–32</sup> This *JAIDS* supplement underscores the need for studies with coherent counterfactual comparisons to be published to move the health communication field forward toward greater impact and potential for scale-up.

## ACKNOWLEDGMENTS

The preparation of this article was facilitated by US Agency for International Development Cooperative Agreement AID-OAA-A-12-00058 to the Johns Hopkins Center for Communication Programs. The team also acknowledges Kim Seifert Ahanda and Emily Harris from the US Agency for International Development for their contributions in supporting the development of the supplement.

## REFERENCES

- Vermund SH, Van Lith LM, Holtgrave D. Strategic roles for health communication in combination HIV prevention and care programs. *J Acquir Immune Defic Syndr*. 2014;66(suppl 3):S237–S240.
- Health Communication Capacity Collaborative. 2016. Available at: <http://healthcommcapacity.org/>. Accessed September 15, 2016.
- USAID. *USAID’s Implementation Science Investment: Improving HIV and AIDS Programming Through the Translation of Research to Practice*. Washington, DC: USAID; 2016.
- Babalola S, Van Lith LM, Mallalieu EC, et al. A framework for health communication across the HIV treatment continuum. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S5–S14.
- Morton J, Celum C, Njoroge J, et al. Counseling framework for HIV-serodiscordant couples on the integrated use of antiretroviral therapy and pre-exposure prophylaxis for HIV prevention. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S15–S22.
- Mabuto T, Charalambous S, Hoffmann C. Effective interpersonal health communication for linkage to care following HIV diagnosis in South Africa. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S23–S28.
- Fisher J, Amico K, Fisher W, et al. The information-motivation-behavioural skills model of antiretroviral adherence and its applications. *Curr HIV/AIDS Rep*. 2008;5:193–203.
- Sutton R, Lahuerta M, Abacassamo F, et al. Feasibility and acceptability of health communication interventions within a combination intervention strategy for improving linkage and retention in HIV care in Mozambique. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S29–S36.
- Hirsch-Moverman Y, Daftary A, Yuengling KA, et al. Using mHealth for HIV/TB treatment support in Lesotho: enhancing patient-provider communication in the START study. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S37–S43.
- Lippman SA, Neilands TB, MacPhail C, et al. Community mobilization for HIV testing uptake: results from a community randomized trial of a theory-based intervention in rural South Africa. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S44–S51.
- Lyons C, Ketende S, Diouf D, et al. The potential impact of integrated stigma mitigation interventions in improving HIV/AIDS service delivery and uptake for key populations in Senegal. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S52–S59.
- Kerrigan D, Mbwambo J, Likindikoki S, et al. Project Shikamana: baseline findings from a community empowerment based combination HIV prevention trial among female sex workers in Iringa, Tanzania. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S60–S68.
- Orr N, Hajjiyannis H, Myers L, et al. Development of a national campaign addressing South African men’s fears about HIV counselling and testing and antiretroviral treatment. *J Acquir Immune Defic Syndr*. 2017;74(suppl 1):S69–S73.
- Brashers DE, Basinger ED, Rintamaki LS, et al. Taking control: the efficacy and durability of a peer-led uncertainty management intervention for people recently diagnosed with HIV. *Health Commun*. 2017;32:11–21.
- LaCroix JM, Snyder LB, Huedo-Medina TB, et al. Effectiveness of mass media interventions for HIV prevention, 1986–2013. *J Acquir Immune Defic Syndr*. 2014;66(suppl 3):S329–S340.
- MacLachlan E, Potter K, Hamunime N, et al. “We are now free to speak”: qualitative evaluation of an education and empowerment training for HIV patients in Namibia. *PLoS One*. 2016;11:e0153042.
- Castro-Sánchez E, Chang P, Vila-Candel R, et al. Health literacy and infectious diseases: why does it matter? *Int J Infect Dis*. 2016;43:103–110.
- Widman L, Noar S, Choukas-Bradley S, et al. Adolescent sexual health communication and condom use: a meta-analysis. *Health Psychol*. 2014;33:1113–1124.
- Tomori C, Risher K, Limaye RJ, et al. A role for health communication in the continuum of HIV care, treatment, and prevention. *J Acquir Immune Defic Syndr*. 2014;66(suppl 3):S306–S310.
- Lettenmaier C, Kraft J, Raisanen K, et al. HIV communication capacity strengthening: a critical review. *J Acquir Immune Defic Syndr*. 2014;66(suppl 3):S300–S305.
- Gurman TA, Rubin SE, Roess AA. Effectiveness of mHealth behavior change communication interventions in developing countries: a systematic review of the literature. *J Health Commun*. 2012;17(suppl 1):82–104.
- Rochon D, Ross MW, Looney C, et al. Communication strategies to improve HIV treatment adherence. *Health Commun*. 2011;26:461–467.
- Helme DW, Noar SM, Allard S, et al. In-depth investigation of interpersonal discussions in response to a safer sex mass media campaign. *Health Commun*. 2011;26:366–378.
- Noar S, Crosby R, Benac C, et al. Application of the attitude-social influence-efficacy model to condom use among African-American STD clinic patients: implications for tailored health communication. *AIDS Behav*. 2011;15:1045–1057.
- Lwin M, Stanaland A, Chan D. Using protection motivation theory to predict condom usage and assess HIV health communication efficacy in Singapore. *Health Commun*. 2010;25:69–79.

26. Lapinski M, Randall L, Peterson M, et al. Prevention options for positives: the effects of a health communication intervention for men who have sex with men living with HIV/AIDS. *Health Commun.* 2009; 24:562–571.
27. Hugo J, Stall R, Rebe K, et al. Anti-retroviral therapy based HIV prevention among a sample of men who have sex with men in Cape Town, South Africa: use of post-exposure prophylaxis and knowledge on pre-exposure prophylaxis. *AIDS Behav.* 2016; doi:10.1007/s10461-016-1536-1.
28. Aliyu MH, Blevins M, Audet CM, et al. Integrated prevention of mother-to-child HIV transmission services, antiretroviral therapy initiation, and maternal and infant retention in care in rural north-central Nigeria: a cluster-randomised controlled trial. *Lancet HIV.* 2016;3:e202–e211.
29. Boehmer A, Audet CM, Blevins M, et al. Patient and provider satisfaction with a comprehensive strategy to improve prevention of mother-to-child HIV transmission services in rural Nigeria. *J Acquir Immune Defic Syndr.* 2016;72(suppl 2):S117–S123.
30. Myburgh H, Murphy JP, van Huyssteen M, et al. Implementation of an electronic monitoring and evaluation system for the antiretroviral treatment programme in the Cape Winelands district, South Africa: a qualitative evaluation. *PLoS One.* 2015;10:e0127223.
31. Howard LM, Tique JA, Gaveta S, et al. Health literacy predicts pediatric dosing accuracy for liquid zidovudine. *AIDS.* 2014;28:1041–1048.
32. Ciampa PJ, Tique JA, Juma N, et al. Addressing poor retention of infants exposed to HIV: a quality improvement study in rural Mozambique. *J Acquir Immune Defic Syndr.* 2012;60:e46–e52.