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Assisted Partner Services for HIV: Ready to Go Global

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Partner notification has been a part of efforts to control sexually transmitted infections (STI) since the 18th century, when Danish priests sought to notify the sex partners of persons with syphilis[1]. But despite this long history, the intervention has been neglected as a means to control HIV. That is now changing. In December 2016 the World Health Organization (WHO) issued new guidelines recommending that “assisted partner notification services be offered as part of a comprehensive package of testing and care offered to persons with HIV. [2]” This change was prompted by the global consensus that case-finding and treatment are central to HIV control efforts, and by a recent series of randomized trials and program evaluations from sub-Saharan Africa[3–6]. In this issue of *AIDS*, Dalal and colleagues present a systematic review and meta-analysis undertaken as part of the development of the new WHO guidelines. Based on results of three individual-level randomized controlled trials, they found that assisted partner services (APS) increased partner notification and new HIV diagnoses among the sex partners of persons with new diagnosed HIV by approximately 50%. A Kenyan cluster randomized trial found that APS increased HIV diagnoses 5-fold. Adverse events (i.e. partnership dissolution, intimate partner violence) were not significantly associated with receipt of APS and were rare. Given the new data and guidelines, where do we stand and what needs to be done?

Although additional data - particularly from Latin American, the Caribbean, and Asia - would be ideal, in low- and middle-income nations, now is the time for action. We have consistent data from two individual-level randomized trials from Malawi[3, 4], a large cluster randomized trial from Kenya[5], a controlled program evaluation from Mozambique[6] and a large, uncontrolled program evaluation from Cameroon[7]. Cameroonian Baptist Convention Health Services has provided APS to over 24,000 persons since 2007, demonstrating that the intervention can be brought to scale and sustained, while analyses from Malawi and Kenya suggest that APS is cost-effective[8, 9]. As emphasized in the WHO guidelines, APS should be voluntary and confidential, and efforts to prevent and monitor adverse events are critical. Although existing data support the conclusion that the intervention is safe, many public health officials and clinic directors are likely to require some experience with APS before endorsing its widespread implementation. In such

instances, pilot projects will be needed to establish the acceptability, safety and effectiveness of APS, and to build consensus for change.

From a research perspective, we need rigorous program evaluations to define effective and efficient models of APS scale-up. Programs evaluated in published studies have varied substantially, variously relying on medical professionals and religious pastors (Cameroon), trained study staff (Kenya and Malawi), HIV testing counselors (Tanzania)[10] and community health workers (Mozambique). Some APS models have emphasized resource-intensive field investigation (Kenya and Cameroon), others have relied almost entirely on cellphone contact (Mozambique), and some have focused primarily on disclosure counseling (Tanzania). Future studies will need to address the following: 1) what workforce should provide APS, how should we train and supervise that workforce and, insofar as APS fosters the development of a new or more robust cadre of outreach workers, what other tasks should that workforce undertake (e.g. relinkage to care)?; 2) what procedures strike the best balance between intervention intensity and efficiency (e.g. how critical are field investigations [going to patients homes or workplaces]?); 3) how should we monitor programs to ensure the safe provision of the intervention and maximize its impact?; and 4) what, if anything, can and should be done to increase APS effectiveness in testing partners with whom interviewed patients no longer have ongoing relationships?

The value of APS in high-income nations is somewhat less certain. The sole randomized controlled trial of APS conducted in the U.S. occurred in the late 1980s in North Carolina and enrolled only 74 persons[11]. While that study showed that APS significantly increased partner testing, only 24% of persons with HIV notified any partners themselves. More recent studies from the U.S. suggest that most persons diagnosed with HIV notify at least one partner in the absence of any intervention[12, 13]. A 2015 randomized controlled trial from Taiwan[14], as well as non-randomized comparative studies from the U.S. and Australia provide additional, more contemporary support for the role of APS in high income nations[15, 16]. However, other data suggest current programs may not be highly effective. U.S. and U.K. partner services program evaluations have found that approximately one new case of HIV is diagnosed in sex partners for every 9–14 persons receiving APS[17–19]; however, in at least one program, most of these new diagnoses occurred in partners notified and tested prior to the initiation of APS[13], meaning they were not a result of the intervention. In many U.S. health departments, a fulltime partner notification worker investigates fewer than 50 new HIV cases per year; their annual work likely results in only 1–3 new HIV diagnoses (unpublished data). APS finds case, but not a lot of cases and the cost is high. This reality should prompt reconsideration of how the intervention is organized and the priority places on time-consuming field investigations. Public health programs should experiment with more efficient approaches to partner services (e.g. telephone, internet and social networking-based investigations[20]), and place greater emphasis on outcomes beyond case-finding, such as linkage to HIV care and promotion of HIV pre-exposure prophylaxis[21].

WHO's new partner notification guidelines and the data that support them herald a new era for partner services. Bringing APS to scale will pose significant challenges in implementation. But at last, this intervention, which was initially deployed to control STIs

for more than a century before the advent of modern antimicrobials, is ready for global adoption in the fight against the most important STI, HIV.

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