Contact Investigation in the Prevention of Mother-to-Child Transmission of HIV Comparing Urban and Rural Outcomes in Jamaica

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ABSTRACT

Background and Purpose: *The contact investigators played a significant role in the decline of infectious syphilis in Jamaica and are likely important players in the prevention of mother-to-child transmission (PMTCT) in the HIV programme. A brief evaluation was done comparing the outcomes of contact investigation in Kingston and St Andrew (KSA) with that of the contact investigation in two rural parishes.*

Methods: *The interview and field records for the seropositive antenatal clinic attendees for the period October 2004 to September 2005, in urban KSA, were compared with those for rural Clarendon and Portland.*

Results: *HIV seropositive pregnant women (n = 88) were notified and/or referred to the parish contact investigators: 36 in KSA, 9 in Portland and 43 in Clarendon. The time from test date to interview date was almost twice as long for KSA (mean 27 days) than Portland (mean 15.7 days) and thrice that of Clarendon (mean 9 days). Mean disposition (case closure) times were for KSA: 19 days; Portland: 28 days and Clarendon: 15 days. Only 40% of the contacts were located for KSA and 48% of these tested positive for HIV. For Portland, 73% were located and 8% tested positive. For Clarendon, 45% were located and 35% of these tested positive.*

Conclusions*: On site same day HIV rapid testing is not always available so the contact investigator is an essential member of the pMTCT team in Jamaica. One of the programme outcomes (time to interview) was longer in the urban than the rural parishes while others (time to resolution of the case and percentage of contacts located and tested) had no consistent urban-rural differences.*

Investigación de Contactos en la Prevención de la Transmisión del VIH de Madre a Hijo Comparando los Resultados Urbanos y Rurales en Jamaica

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RESUMEN

Antecedentes y Propósito: *Los investigadores de contactos desempeñaron un papel significativo en el disminución de la sífilis infecciosa en Jamaica, y son probablemente agentes importantes en la prevención de la transmisión del VIH de madre a hijo dentro del programa de VIH. Se realizó una breve evaluación comparando los resultados de las investigaciones de contactos en Kingston y Saint Andrew (KSA) con los de la investigación de contactos en dos provincias rurales.*

Métodos: *Los datos de entrevistas y de campo de los asistentes seropositivas a la clínica de atención prenatal para el período comprendido desde octubre de 2004 a septiembre de 2005 en el perímetro urbano KSA, fueron comparados con los de las rurales Clarendon y Pórtland.*

Resultados: *Las mujeres embarazadas VIH seropositivas (n = 88) fueron notificadas y/o referidas a los investigadores de contactos de las provincias: 36 en KSA, 9 en Portland y 43 en Clarendon. El tiempo de la fecha de prueba a la fecha de la entrevista fue casi el doble para KSA (promedio 27 días) en comparación con Pórtland (promedio 15.7 días) y tres veces mayor que el de Clarendon (promedio*

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9 días). Los tiempos de disposición promedio (cierre de caso) fueron como sigue: KSA, 19 días; Portland, 28 días; y Clarendon, 15 días. Sólo el 40% de los contactos fueron localizados para KSA y el 48% de estos resultaron VIH positivos a las pruebas. Para Pórtland, 73% fueron localizados y 8% resultaron positivos. Para Clarendon, 45% fueron localizados y 35% de estos resultaron positivos.
Conclusiones: *No siempre hay pruebas de VIH rápidas disponibles para su realización en el mismo lugar el mismo día, de manera que el investigador de contactos es un miembro esencial del team PMTCT en Jamaica. Uno de los resultados del programa (tiempo de entrevista) tuvo mayor duración en las provincias urbanas que en las rurales, en tanto que otros (tiempo de solución del caso y porcentaje de contactos localizados y sometidos a prueba) no mostraron diferencias consistentes urbano-rurales.*

INTRODUCTION

The role of the contact investigators/disease intervention specialists in the declining incidence of infectious syphilis in Jamaica (1) and the United States of America [USA] (2) has been documented. With the increasing burden of HIV in Jamaica (3), there has been a change in caseload and associated complexity from syphilis to HIV. The sense of urgency that the contact investigators had in the prevention of infectious syphilis and mother to child transmission of syphilis continued and also prevailed in the prevention of mother-to-child transmission (pMTCT) of HIV.

The widespread use of the rapid serological test for syphilis was a contributing factor to the success story of syphilis. The rapid test for HIV was also a component of the 'roll-out' of the Jamaican Ministry of Health's pMTCT programme in 2004. As with the rapid test for the syphilis control programme, in the rapid test for HIV, due to lack of human resources at some sites, it was not always possible for clients to obtain results on the same day as in most instances phlebotomy was performed on site but the rapid test was done off site with results returned to the site usually within a week or two. This then translated into more time on field work for the contact investigators locating index cases and possibly contributed to decreased outcomes.

Contact investigation consists of contact interviewing and contact (field) tracing. Contact interviewing was performed the same day for sites with same day rapid testing or later when index cases were found (on return visit or after field tracing). For HIV, the aims of contact interviewing were to a) identify infected contacts who were unaware of their status so that with counselling and treatment they could prevent transmission to others (pMTCT in the case of a pregnant case), b) identify uninfected contacts at high risk who could be counselled to avoid infection (primary PMTCT in the case of both genders), c) identify infected contacts who were counselled and treated to improve the quality of their lives (pMTCT plus). The direct interview approach (4) is usually applied during the contact interview. This approach seeks to elicit all contacts/suspects by asking general questions *re* lifestyle (sexual) history and dispelling general myths/misconceptions to identify more contacts before specific contact locating information is obtained. It is done before any counselling, specific disease education or data collection was performed. The contact investigator experienced in this approach usually solicits more contacts per case than the clinician attempting partner notification.

In addition to contact investigation, the contact investigators at the outset played and continued to play a significant role in the pre- and post-test counselling of pregnant women and the referral of HIV seropositive pregnant women to other services such as the high risk antenatal clinic, social worker and the nutrition personnel (5). As occurred with the other sexually transmitted infections, the contact investigators were involved in other activities (6) that facilitated case finding, management and augmented prevention efforts for HIV.

Contact investigation for HIV is far from straightforward and there is a paucity of meaningful evaluations on this (7). It is hoped that some lessons learnt in the control of syphilis in Jamaica namely: decentralized rapid (with same day result) testing by trained laboratory technician assistants and prompt contact investigation of new cases, active surveillance of cases from MTCT, training of healthcare staff at all levels will be applied and contribute to the control of HIV/AIDS in Jamaica. A review of the outcomes of contact investigation locally would yield a better appreciation of the benefits and the limitations for the control and prevention of HIV/AIDS.

This study aimed to compare the outcomes of contact investigation from the urban area, Kingston and St Andrew (KSA) part of the collaborative initiative aimed at pMTCT HIV in two maternity hospitals (8), over ten antenatal clinics and three paediatric centres with that of the contact investigation in two rural parishes implementing the pMTCT- HIV programme as per the Ministry of Health pMTCT protocol (9).

SUBJECTS AND METHODS

For each parish involved, a list of HIV seropositive pregnant women during the period October 1, 2004 to September 30, 2005 was obtained from the appropriate registers. The Interview and Field records for each index case were reviewed in a confidential manner and the aggregate data compiled. The information garnered from these forms included

demographics, test and interview dates, number of contacts named and if locatable (had a name and reasonable address or directions), disposition code (work/completed, worked/no progress or not worked) and outcome (test results of contacts or reasons for worked/no progress or not worked). In KSA, the data were compiled by the principal investigator and the contact investigators involved clarified any queries. The contact investigators from Clarendon and Portland reviewed and compiled the data in a similar format for their respective parishes. These were tabulated and compared. It should be noted that other contact investigators and other healthcare workers such as midwives and public health nurses were consulted for any queries or gaps in the data.

RESULTS

For the specified 12-month period, 36 seropositive pregnant women ranging in ages from 15–41 years (mean 26 years) were notified and/or referred to the contact investigators in KSA. For the same period, 9 seropositive pregnant women with an age range 17–35 years (mean 24 years 10 months) and 43 seropositive pregnant women with an age range 15–39 years were notified and/or referred to the contact investigators in Portland and Clarendon respectively. A comparison of the length of time from test date to interview date and disposition times among parishes are presented in Table 1.

Table 2 shows a detailed comparison of the outcome of contact investigation among the specified parishes. Reasons for not locating contacts included: contacts were out of parish (most common reason): KSA 24%, Portland 12% and Clarendon 27%, or lived in a volatile, violent area, had migrated to the USA/UK, had died and, in KSA, two cases did not disclose location of contacts as there was a real threat of domestic violence if the positive HIV status of the pregnant women was suspected.

DISCUSSION

The outcomes of contact investigation (proportion of contacts located and tested) in the pMTCT of HIV in the metropolitan area were less than that of the two rural parishes in Jamaica. The ratio of named contacts to index case was greater in Portland and Clarendon than in KSA. This outcome may be a reflection of the differences in the AIDS caseload and HIV prevalence in pregnant women in these parishes (10) [Table 3]. The total workload per contact investigator for each parish would help in the explanation of the differing outcomes but this information was not available for this review.

Table 1: Time to interview index case and time to complete contact investigation (disposition)

Parish	Time from test date to interview date: range of time	Mean time to interview, days	Time from interview to disposition: range of time, days	Mean time to disposition, days
KSA	0–105	27.0	0–76	19
Clarendon	5–36	9.0	5–60	15
Portland	0–45	15.7	0–50	28

KSA = Kingston and St Andrew

Table 2: Contacts located and tested in the three parishes

Parish	# cases	# contacts named (c)	# contacts locatable (%)	# contacts out of parish	# located of the locatable (%)	# contacts tested (t) (% t/c)	# of those tested and HIV positive (%)
KSA	36	72 (ratio 2:1)	n/a	17 (24)	29 (n/a)	21 (29)	10 (48)
Clarendon	43	107 (ratio 2.4:1)	68 (64)	13 (19)	48 (71)	40 (37)	14 (35)
Portland	9	22 (ratio 2.4:1)	17 (77)	2 (9)	15 (73)	12 (55)	1 (8)

n/a = not available

Table 3: Comparison of AIDS caseload and antenatal clinic HIV seroprevalence among the specified parishes and Jamaica.

Geographic location	AIDS cases per 100 000 population	HIV seroprevalence rate (%) in pregnant women
KSA	572.4	1.73
Clarendon	138.4	Not determined
Portland	198.8	Not determined
Jamaica	354.2	1.25

This outcome may also be dependent on each contact investigator's skill in interview techniques including use of the direct interview approach as presented to all during their training.

The complexities of urban life often lead to less contacts and index cases (if no same day result testing) being locatable. For example, a home address given by a client often is manifested as a large tenement yard with many homes and sparse locatable information. To compound this, most persons especially in the urban areas were not willing to offer information to outsiders. The contact investigator also has to be prudent in obtaining information because of the risk of informants labelling the client as HIV-positive especially in communities where the contact investigator is known. In addition, contact tracing is sometimes deferred or suspended because of localized violence in some inner city communities. While Clarendon is considered rural, there are increasing settlements that approximate to the urban setting with similar complexities.

Proportionately, more contacts were from out of parish in the urban setting than the rural setting and thus impede the yield of contacts. The inter parish mobility especially during pregnancy was a reality that must be considered. Contact investigators referred the out of parish contacts to their colleagues in the respective parishes but determining the yield of this was beyond the scope of this report as the mechanism for monitoring this was no longer in place. However, if the contact was known to be pregnant, greater inter parish communication and effort among contact investigators was usually extended to locate and test her even if it meant using personal expenses.

Though most pregnant women would have been interviewed before their next antenatal clinic appointment, attention was given to the time from test to interview. This ranged from zero days (for same day result testing) to more than three months and with the pMTCT-HIV, this probably meant no or little time for antiretroviral medications for the mother before delivery as some of these mothers (especially in urban areas) presented to the antenatal clinic in the second or third trimester. The initial system of notifying the contact investigator of test results in KSA was revamped to a more efficient one when this undue delay was reported at the regular pMTCT programme meetings. The rural parishes were less likely to have same day result testing but their system of notifying the contact investigator seemed more efficient than in the urban setting. Reliable rapid tests with same day results and access to a contact investigator would decrease valuable time on the field locating index cases which could be channeled into locating contacts and thus have a greater impact on controlling the epidemic. Prompt and ongoing communication between the other pMTCT team members and the contact investigators was a key factor in the success of contact investigation. An increase in the number of clients seeking early prenatal care would also facilitate the success of pMTCT services, including contact investigation.

The time to disposition of the case was greatest in Portland and it may have contributed to the higher proportion of contacts located. This could be a reflection of the caseload per contact investigator, less index cases, so more time to spend locating contacts. The terrain and transportation within parishes could affect the time to disposition of cases; the contact investigators in Portland would spend more time travelling to locate cases and/or contacts thus lengthening the disposition time for some cases.

The extent of the HIV epidemic in each parish impacted on the pMTCT programme. If the proportion of contacts that were tested and found to be HIV-positive was greater, then there were likely to be more pregnant women who became infected and were unaware of their HIV status. The magnitude of the problem was far greater in KSA and Clarendon than Portland and more effort and resources should be put into contact investigation and other control efforts there. Also the effort in reaching more HIV-positive contacts to enrol in the HIV treatment and care programme (pMTCT plus) must be intensified and should in fact have a positive impact on the future pMTCT programme – the more persons living with HIV/AIDs that are adherent to medications and positive prevention, the less the extent of MTCT of HIV. The extent of contact investigation in the pMTCT programme will impact on the overall HIV control programme. Parishes like Portland with a relatively low HIV prevalence must seize the opportunity to employ contact investigation as an important strategy to control the spread of HIV.

This study described the important role the contact investigator played in pMTCT programme. It highlighted the importance of monitoring all aspects of the pMTCT programme such as the accessibility and availability of rapid tests, the level of communication among the team, staffing, supervision, transportation and social vulnerabilities of clients. This small sample of three out of thirteen parishes provides a limited comparison and a more detailed evaluation of the contact investigation services could reveal more useful information to enhance the monitoring of the service, the pMTCT and overall HIV control programme.

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