SRH & HIV BULLETIN

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Communicating research news from the DFID Research Programme Consortium for Research and Capacity Building in Sexual & Reproductive Health and HIV in Developing Countries

Welcome

This is the newsletter of the DFID Research Programme Consortium for Research and Capacity Building in Sexual & Reproductive Health and HIV in Developing Countries. The RPC is a five-year research programme coordinated by the London School of Hygiene and Tropical Medicine (LSHTM) and is a collaboration with the following partner institutions:

- National Institute for Medical Research (NIMR), Mwanza, Tanzania;
- Navrongo Health Research Centre (NHRC), Ghana;
- School of Medical Sciences, Kwame Nkrumah University of Science and Technology (KNUST-SMS), Kumasi, Ghana;
- Reproductive Health and HIV Research Unit (RHRU), University of the Witwatersrand, Johannesburg, South Africa;
- Social and Public Health Sciences Unit of the Medical Research Council (MRC SPHSU), Glasgow, UK;
- International Planned Parenthood Federation (IPPF);
- Population Services International (PSI).

THIS ISSUE

We report on the XVI International AIDS Conference held in Toronto in August. An article presenting conference highlights is followed with presentations made by RPC members. Further information on presentations by RPC members and partners can be found on the RPC website: http://www.lshtm.ac.uk/dfid/aids/

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AIDS 2006: Time to deliver

Conference highlights

A major (initially hidden) theme of the recent International AIDS Conference (IAC) held in Toronto was HIV prevention, in terms of behavioural interventions as well as new prevention technologies. While the intended focus of the conference was on treatment access, it was realised that without major scaling up of existing and new prevention interventions, the epidemic would spiral out of control, despite some limited successes.

Prevention technologies

There was quite a buzz at the conference around the potential for future HIV prevention of various methods currently under trial. While vaccines remain the ultimate goal, significant challenges remain. Other prevention methods highlighted were:

- Pre-exposure prophylaxis (see report by Nagot & Mayaud below).
- Herpes suppression (see RPC Presentations below);
- Microbicides;
- Diaphragms/cervical barrier methods;
- Male circumcision.

Preliminary research on each of these has suggested that they could be effective in reducing the risk of HIV infection and results from their trials are expected in the next 3 years.

Scaling up access

As the theme of the conference was "Time to Deliver", many sessions included examination of issues in scaling up access to treatment. A satellite session on this focused on Latin America and the Caribbean. J.W. Pape from Haiti, founder and director of GHESKIO, a Haitian NGO that started as a research-oriented clinic on HIV and which now provides antiretrovirals (ARVs) to thousands of Haitians, emphasised the importance of political non-alignment to ensure sustainability and attraction of donor funds. He also showed ways to get the best from very limited human resources, e.g. by allowing nurses to carry out functions usually reserved for doctors, and laypeople (including people living with HIV, PLHIV) to carry out functions usually reserved for nurses.

In a plenary session, Kevin de Cock (WEPL02) noted that worldwide, access to ARVs has expanded massively, but still only 24% of PLWHA (persons living with AIDS) are taking ARVs, including 23% in Africa and 75% in Latin America and the Caribbean. In a session on Human Resources and HIV/AIDS, the brain drain from poorer countries of health care workers was lamented. Mark Heywood (WEBS0205) suggested a global solution was necessary: a binding legal agreement should be signed by governments not to poach health care workers by recruiting them from poorer countries.

The overall message was that massive scaling up of resources and organisation is needed to ensure that scientific advances are translated into reductions in infections, better quality of life for PLWHA and reduced mortality.

Issues of both prevention and scale-up are addressed in the presentations by RPC members that follow.

Lisa Williamson and Caroline Allen MRC Social and Public Health Sciences Unit, Glasgow

NB. The full reports by Lisa and Caroline are available on the RPC website.

Pre-exposure prophylaxis (PrEP) to prevent HIV infection

Pre-exposure prophylaxis (PrEP) to prevent HIV infection has recently faced serious criticism. Poorly conducted efficacy trials have generated a strong mobilization against this type of study, with an obvious negative impact on the strategy itself.

"Saving the PrEP" was one of the objectives of some scientists and activists at Toronto, and the presentation of the first completed efficacy trial in humans in the Late Breaker session contributed to much media hype and attender interest. The main objective of a truncated randomized placebo-controlled trial conducted by Family Health International was to assess the efficacy of tenofovir (TDF) 300mg daily on HIV acquisition and safety among high-risk women in Ghana, Nigeria and Cameroon [THLB0103]. In total, 936 women were enrolled with a maximum follow-up of 12 months. No difference was found between tenofovir and placebo on clinical or biological adverse events (hepatic and renal functions). Only 2 cases of sero-conversion (0.86% annual incidence) were reported in the tenofovir arm, versus 6 (2.48% annual incidence) for placebo. This represents a 65% reduced risk, but there was clearly no power to detect a statistically significant difference, although this was not how some of the media reported the results!

What were the take-home messages from this study? The main positive finding was the very good safety profile of tenofovir, including the absence of renal and hepatic function alterations. No definitive conclusion regarding efficacy could be made because of the low number of sero-conversions (half of the expected 5% annual incidence). The investigators had to close 2 of the study sites: in Cameroon after a mean follow-up of 6 months because the local provision of ARVs to seroconverters could not be secured in the long run; and in Nigeria after enrolment of 136 participants, due to apparently deficient laboratory facilities. In addition, the HIV incidence in the control group in Ghana was much lower than anticipated.

The difficulties met by this trial highlight the intensity of the debate regarding HIV prevention trials, and PrEP in particular. Following the closure of the Nigeria and Cameroon sites, another trial planned in Malawi was cancelled. Another ongoing efficacy study in Thailand among injecting drug users, and those planned in Peru among men who have sex with men and among heterosexual men and women in Botswana will have to face similar issues. Most of the controversies relate to study procedures and ethical considerations, which are the direct responsibility of the study sponsors. Other concerns, regarding the development of ARV resistance among sero-converters, behaviour disinhibition among trial participants or inappropriate and dangerous use of new drugs (tenofovir alone or in association with FTC or 3TC [e.g. Truvada]) are directly linked with the PrEP strategy itself. The efficacy of this strategy remains to be established, but if proven, such issues would have to be addressed before large-scale implementation can be done.

The IAC outlined the need for new HIV prevention tools, and PrEP is a promising one.

Nicolas Nagot and Philippe Mayaud LSHTM, UK

SELECTED RPC PRESENTATIONS

HSV-2 suppressive therapy to reduce genital and plasma HIV-1 RNA: overview of the ANRS 1285 trials

Background

There is strong biological and epidemiological evidence linking herpes simplex virus type 2 (HSV-2) to HIV transmission, but an absence of rigorous intervention data to prove this hypothesis.

Methods

We conducted two proof-of-concept randomized placebocontrolled trials measuring the impact of valacyclovir (1g daily for 3 months) on plasma and genital HIV-1 RNA among HSV/HIV-infected women not needing HAART (ANRS 1285a), or taking HAART (ANRS 1285b), in Burkina Faso.

Results

The ANRS 1285a trial (n=140) showed that both the frequency and quantity of genital HIV-1 RNA shedding were significantly reduced by valacyclovir, with a 20% decrease in quantity of HIV-1 RNA from one bi-weekly measurement to the next (p<0.01). There was a rapid and sustained significant reduction in plasma HIV-1 RNA of 0.5 log copies/mL over 3 months.

The ANRS 1285b (n=60) did not show impact of valacyclovir on genital HIV-1 RNA overall, but found a borderline-significant effect on genital HIV-1 quantity in the subgroup of women shedding HIV-1 at baseline (p=0.09). There was some evidence of a reduction in plasma HIV-1 RNA (p=0.06).

Results of both trials suggest that effect on genital HIV-1 RNA is driven partly by concomitant reduction in plasma HIV-1 RNA, and partly by the facilitating role of HSV-2 on HIV-1 genital replication, although this effect was limited in women taking HAART. Plausible explanations for impact on plasma HIV-1 include immunological mechanisms, circulating soluble factors and/or HIVinfected cells, or effect on other herpes-related viruses.

Conclusions

The ANRS1285 trials are the first to demonstrate impact of HSV on HIV transmissibility in vivo. If confirmed by ongoing intervention trials, these findings support an important role of HSV-2 control in HIV prevention. Additionally, our data provide rationale for interventions evaluating the impact of (val)acyclovir on HIV immunological and virological correlates.

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Acknowledgement: This work was funded by Agence Nationale de Recherche sur le SIDA et les Hépatites (ANRS).

NB. Details of other presentations on the ANRS trials are available on the RPC website.

Episodic treatment for genital herpes in Malawi

Background

Current syndromic management of genital ulcer disease (GUD) in Malawi covers treatment for syphilis and chancroid, but not genital herpes. Predominantly, *H. ducreyi, T. pallidum* or *K. granulomatis* were the main causes of GUD in developing countries, with HSV-2 the cause in western countries. Evidence suggests that a shift has occurred in the last decade, showing HSV-2 as a common cause of GUD in most developing countries. HIV-1 has been shown to impact on the natural history of HSV-2, while HSV-2 may increase the efficiency of HIV-1 acquisition and transmission.

Methods

A randomized placebo-controlled trial evaluating the impact of additional acyclovir as episodic treatment for HSV-2 on ulcer healing and HIV-1 genital shedding is underway in Lilongwe, Malawi. Patients are treated with single injection of benzathine penicillin 2.4 MU intramuscularly and single dose ciprofloxacin 500mg orally before receiving either 20 tablets of 400mg acyclovir or matching placebo to be taken 2 tablets twice a day for 5 days.

Results

By November 2005, 250 patients (204 men, 46 women) were enrolled and randomized. 60% were HIV-1 sero-positive, 74% were HSV-2 sero-positive and 4% had a positive syphilis serology. Ulcer aetiology among 177 patients showed: HSV-2 58%, *H. ducreyi* 19%, LGV 7%, *T. pallidum* 5% and no aetiology 11%. Patients who were HSV-2 sero-positive were more likely to be HIV sero-positive (69% vs. 35%, p<0.0001), as were patients with lesional HSV-2 compared with patients with other aetiologies (67% vs. 51%, p=0.03). Among HIV+ patients with CD4 count <200, 72% of ulcers were due to HSV-2.

Conclusions

HIV-1 and HSV-2 are highly prevalent infections in patients with GUD in Lilongwe and are closely associated. HSV-2 dominates GUD aetiologies in this population, while bacterial aetiologies covered by the current management algorithm persist. There is growing evidence to revise GUD guidelines to add acyclovir episodic treatment for genital herpes in Malawi.

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Acknowledgements: This research is supported by the National AIDS Commission (NAC) of Malawi and the University of North Carolina (UNC) at Chapel Hill. This trial is part of Sam Phiri's PhD project from LSHTM. Sam Phiri is supported by the International Fogarty Centre of UNC at Chapel Hill. The study operations are done by UNC – Lilongwe staff.

HIVTools Research Group

Costs of scaling-up STI treatment: systematic review and cost projections

Background

With growing recognition of the burden of STIs, and evidence of links between STIs and HIV transmission, calls have been made for increased investment in STI treatment and prevention services. Information on costs of providing different types of services forms an important contribution to discussions about the relative efficiency and equity of projects. We present findings from a systematic review of the unit costs of STI treatment in developing countries and use this to explore key factors influencing unit costs and scaling up.

Methods

An extensive PubMed search and review of the grey literature identified 53 primary studies. Costs were analysed by pathogen and syndrome, and by outcome measure. Regression analysis was used to estimate the impact of service delivery mode and syndromic management (SM) on unit costs, adjusting for costing method.

Results

Variation in treatment costs (including the cost of providing the service) was 10 times greater than variation in drug costs, reflecting differences in costing methodologies and service delivery. The median cost for drugs only was \$2.62, and for treatment was \$17.80.

Outreach services had significantly higher costs relative to clinics serving symptomatic patients, and SM had significantly lower costs relative to other approaches. Unit costs in Africa were 3.34 times the costs elsewhere. Cost per case cured was twice as high as cost per treatment. Scale was negative and significant.

Exploratory projections

The model predicts that the full economic costs per person treated in a clinic serving 1000 symptomatic patients using SM, in 2001, in an African country with a per capita income of \$600, would be \$54 per patient. Predicted unit costs by variations to this scenario are: *incremental cost*: \$16 per patient; *outside Africa*: \$16 per patient; *per STI cured*: \$112; *100 and 10,000 patients*: \$75 and \$39 per patient, respectively; *outreach treatment intervention*: \$82 per patient; *not SM*: \$110 per patient.

Conclusions

The analysis of empirical costs estimates suggests that unit costs will decrease as projects grow – though the above predictions should be seen as indicative rather than firmly predictive. It also highlights the important impact of different costing methodologies and service delivery modes on unit costs. Further refinement of such models can contribute towards evidence-based projections of the costs of scaling-up STI treatment services.

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Using simulated clients to investigate challenges to ART roll-out

Background

The increasing focus on comprehensive HIV prevention and care programmes requires innovative ways to provide services in resource-poor settings and robust tools to assess quality of care. The Bridging Gaps Project (BG) was a 40-month intervention project designed to assess whether improved collaboration and communication between biomedical health practitioners (BHP) and traditional health practitioners (THP) could improve the quality of HIV and STI care in Zambia and Uganda. We report the first known use of the simulated client method (SCM) to assess quality of HIV/AIDS care and support, and the first known use of SCM among THP. Using SCM data, we reveal some of the challenges and opportunities faced when attempting to scale-up ART in urban Zambia and rural Uganda.

Methods

SCM uses research assistants trained to act as patients with standardized disease scenarios. These SC visit health care providers as normal patients would, and their experiences are recorded and analyzed.

534 SC visits were conducted among BHP and THP in urban Zambia and rural Uganda in 2005. SC visits followed 1 of 4 standardized scenarios, seeking counselling and advice for voluntary counselling and testing (VCT), STIs, ART, or prevention of mother to child transmission of HIV.

Training of SCs (school leavers recruited from outside the study areas) included, amongst others, expectations of care, introduction and development of scenarios, colloquialisms, dealing with tricky questions/situations, data capture tools and field safety. SC were debriefed by field supervisors as soon after their consultations as possible. Data were recorded qualitatively in short narratives and quantitatively through a structured questionnaire.

Results

In Zambia 2 of 12 (17%) and in Uganda 2 of 31 (6%) female SC who consulted male clinic staff (BHP) were sexually harassed. None of the SC who consulted a THP reported sexual harassment.

Some THP were found to tell their patients dangerous myths and misconceptions.

However, THP can play an important counselling and educational role in their communities.

Discussion

Barriers to ART roll-out exist among both BHP and THP. Sexual harassment is an extreme example of the generally poor interpersonal quality of care provided by BHP. This creates very tangible treatment-seeking behaviour barriers. The most significant barriers created by THP for ART rollout are the misconceptions and misleading advice that some provide to their patients on condoms and HIV treatments. Still more worrying was the widespread claim by THP that they could cure HIV/AIDS.

THP can play an important role in comprehensive HIV care and support programmes. No THP in Uganda who participated in the BG intervention claimed to be able to cure HIV/AIDS, while 29% of THP in the control district claimed they could. This illustrates that misconceptions held by THP can be overcome by engaging with them in

collaborative interventions. THP can refer patients to BHP if THP are engaged in a way that builds trust with BHP, as illustrated by the high number of referral forms from THP which were recovered from clinics.

Strengths of SCM

SCM data from THP visits was less predictable than from BHP but was easier to analyze because THP typically operate individually. Data from BHP could be more complicated as they often involve multiple care providers, each provider giving a different quality of care.

SCs can be trained to raise a particular topic if that topic does not arise in the consultation. Here if the THP/BHP did not discuss condoms, the SCs were trained to raise the issue. We could then assess not only what information the THP/BHP offers but also their knowledge and attitude towards condoms.

One unexpected benefit of SCM was increased confidence of THPs. After one round of SCM in Uganda, THPs told the intervention leaders how excited they were about some recent STI/HIV patients whom they had referred to the clinics. The patients they described were SCs.

Weaknesses of SCM

BHP have Ministry of Health guidelines. THP have no defined standards of care, making it difficult to define and assess their quality of care. We therefore designed the SCM scenarios to assess key aims of the BG intervention.

For the safety and privacy of the SC, it is important to recruit SC from outside the study area. Occasionally rural THP were very suspicious of unfamiliar SC. This could alter the course of the consultation and the quality of care.

SC themselves can alter the course of a consultation, e.g. SC were told they did not have to undergo spiritual examinations since they made many SC feel uncomfortable.

It was impossible to identify who the SC consulted when they visited a clinic, making it difficult to assess whether the intervention was successful among individual participating BHP. This was not a major problem since the intervention was designed to influence the quality of care of all clinic staff through peer-influenced networks.

Conclusions

- The interpersonal quality of BHP care needs improving.
- THP are influencing ART roll-out programmes.
- Local differences in THP views and practices must be accounted for when initiating ART roll-out programmes.
- THP can be engaged in collaborative interventions to overcome misconceptions and improve counselling, education, condom promotion and referral practices.
- SCM is well suited to assessing quality of care among THP, and can be used to explore specific themes even when they are not raised by the care provider.

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NB: A second presentation comparing SCM with direct observation is available on the RPC website.

Mwanza GFATM studies

Five poster presentations were made by the Global Fund for AIDS, TB & Malaria project in Mwanza, Tanzania: 1) ART need among rural adults in Kisesa, Tanzania; 2) sociodemographic determinants of VCT uptake in the context of ART in adults in rural Tanzania; 3) survival following HIV infection in the pre-ART era in rural Tanzania; 4) pregnancy as a risk factor for HIV infection in rural Tanzania; 5) comparing HIV incidence in different populations: the Life Time Risk approach. Details from all presentations are available on the RPC's website.

Here we present the final study:

Comparing HIV incidence in different populations: the Life Time Risk approach

Introduction

Comparisons of HIV incidence levels between different populations, or over time in the same population, are complicated by differences in the age structure of the uninfected, and differences in incidence-rate age patterns, making standardization and other linear adjustments inappropriate. Alternative measures based on lifetime cumulated probability of infection constructed using survival analysis techniques are proposed, illustrated using data from the Kisesa open cohort study in Tanzania.

Methods

The study has accumulated 38,592 person-years of observation of HIV-negative adults (aged 15+, but 15–46 in surveys prior to 1997), who participated in 2 or more of the 4 serological surveys between 1994 and 2004.

Approximate infection dates were established for individual sero-converters by randomly allocating a date between last negative and first positive test if these tests were up to 3 years apart. Kaplan-Meier methods were used to cumulate risk of infection after age 15 in different sub-populations, allowing for left and right censoring. Age 65 was chosen as a cut-off point, so life-time risk was defined as cumulated risk up to age 65: LTR(65).

Smoothed age-specific hazard rates were obtained to find the location of the peak age for infection and spread of the incidence curve.

Results

For the population as a whole, the lifetime risk of HIV infection by age 65 reaches 39% [CI 35–44%]. LTR(65) was about 5 times the level of HIV prevalence, which rose from 6% to 8% between 1994 and 2004. Males experienced a higher LTR(65) than females (42% vs. 37%), their mean age at infection was older (males = 41, females = 37) and spread of risk ages were wider (standard deviation 14 and 13 respectively). Roadside areas had a much higher LTR(65)

(44%) with a more concentrated infection schedule than remote rural areas (37%).

LTR(65) increased over time but with little change in the overall age pattern. There is no evidence that higher levels of infection are associated with a particular age pattern of incidence.

Discussion and conclusion

Lifetime risk of infection is a useful metric for comparing overall incidence level in different populations, and survival analysis can also show whether age patterns of infection have a transient or lasting effect on lifetime risk.

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'Two steps forward, one step back'

IPPF were involved in a number of presentations and events at AIDS 2006. Details of some are presented below; further details are available on IPPF's website: <u>http://www.ippf.org</u>.

One event organised by IPPF was a satellite session on the status and impact of current HIV prevention messages and strategies. A main focus was 'revising the ABC to meet the demands of today's epidemic'.

'ABC' (Abstinence, Be faithful, use a Condom) has been a dominant approach recently, largely through the support it receives from the U.S. government. Originally offering three equal protective options, there is now an overemphasis on abstinence and fidelity to the detriment of other prevention options. It fails to meet the needs of the most vulnerable and does not necessarily ensure protection.

The session was chaired by Nono Simelela (IPPF), with presentations from Jodi Jacobson (CHANGE), Lynn Collins (UNFPA), Raoul Fransen (Young Positives), Juan Jacobo Hernandez (Coletivo Sol) and Kevin Osborne (IPPF). To highlight but two, Lynn Collins discussed prevention frameworks and their gaps – who they fail to reach. Regarding ABC, she explained how the model has no basis in the reality of the main drivers of the epidemic. In particular, she recalled Peter Piot's idea that all HIV strategies should pass the test "Does it work for women?".

Kevin Osborne critiqued ABC for being an overly simplistic response to the complex challenge of HIV prevention; likewise the proposed correction through CNN (Condoms, Needles and Negotiation), or SAVE (Safer sex, Access, VCT and Empowerment). He recommended abandoning such simple catchphrases for a comprehensive HIV prevention checklist that includes policy, programme and population elements.

New approaches to HIV prevention

'HIV prevention: current issues and new technologies', issue no. 182 of *Contact* by the World Council of Churches, was launched at AIDS 2006. It was produced with the support of UNAIDS. Kevin Osborne and Nono Simelela individually penned 2 of its 13 articles.

Kevin Osborne advocates '**Positive prevention**' – a set of actions that help people living with HIV (PLHIV) to "protect their sexual health; avoid other STI; delay HIV and AIDS disease progression; and avoid transmitting HIV to others". It is based on the realities and perspectives of PLHIV and acknowledges that every person has a right to a productive, satisfying and enjoyable sexual (and reproductive) life. In order for PLHIV, and their sexual and recreational partners, to make informed choices, they need readily available explicit information – around issues such as safer sex, becoming pregnant and, in areas with high prevalence rates of HSV, information on how this increases the risk of HIV transmission.

Post-exposure prophylaxis (PEP) is the subject of Nono Simelela's article. As yet, no randomized placebocontrolled clinical trials have been carried out on PEP, so current recommendations are based on best practice evidence and expert opinion. The following factors should be considered by clinicians when deciding whether to recommend PEP: 1) the circumstances that led to HIV exposure; 2) the degree of transmission risk based on type of exposure – through needle-stick injuries, through bites, or following sexual assault.

If decided on, PEP should be initiated ideally within 2 hours, and no later than 72 hours following exposure. The recommended protocol is ziduvodine plus lamivudine together with a protease inhibitor, all taken orally. The risks and benefits of PEP should be carefully explained and ongoing counselling and support provided to patients.

Making the connection

Nono Simelela made a key speech on connecting HIV/ AIDS and SRH&R, in the pre-conference workshop 'Making the connection: vulnerable populations, HIV/ AIDS and sexual and reproductive health and rights (SRH&R)'. While HIV/AIDS and SRH&R practitioners both confront similar issues of poverty, gender inequality and varying social norms, they approach these issues from different directions, she said. SRH&R typically focuses on fertility and procreation, within a traditional "norm" of human sexuality. Conversely, HIV/AIDS workers have had to adopt non-traditional approaches that celebrate diversity and challenge the status quo as they tackle the effects of stigmatization. Work on HIV/AIDS tends to be sexpositive, to focus on the treatment of HIV-positive persons, and can lack recognition of broader sexual health issues. SRH is more concerned with preventing disease, protecting those who are healthy, and may have difficulty embracing those beyond its traditional client group.

The approach to human rights also differs, particularly where individual rights may conflict with the goals of public health, such as notifying partners of those HIV-positive. "The important thing is to acknowledge these differences and address them," she said.

Integrating HIV care into a RH clinic in Santo Domingo, Dominican Republic

Background

The Dominican Republic has one of the highest rates of HIV infection in the Americas. The Ministry of Health (MOH) began providing treatment in 2003 but access remains

limited. PROFAMILIA* therefore initiated a model treatment programme for PLHIV, integrated with other health care services.

Description

In 2004, an interdisciplinary team composed of an internist, nurse and educator was trained in HIV/AIDS care. Participants were evaluated by the team and laboratory data obtained. Patients with CD4 <200/mm³ or clinical AIDS were enrolled in an adherence programme and received ART, as did pregnant women beginning at 28 weeks gestation. The care was integrated into existing services, assuring confidentiality and minimizing stigmatization. Medications and costs of lab tests, other necessary procedures and transport were covered.

Patient outcomes

Total patients enrolled		Remain on	DC ART	Died or lost	Viral load *		
NAIVE	Prior ART	treatment	post- partum	to follow up	<400	>400	Pending
71	3	62	4	8	49/50 98%	1/50 2%	12

* Obtained on 50 of 62 patients now in treatment.

Discussion

Barriers to success included poverty; lack of social support; lack of education; certain religious beliefs; stigma and discrimination; restrictive costs of diagnostic studies, hospitalization, and emergency care; limited and uncertain drug supply; and bureaucracy: difficulty in obtaining timely lab tests and questionable reliability of results

Keys to successful ART treatment were:

- Initial patient evaluation identifying potential barriers to adherence.
- Close monitoring, including initial weekly visits to pick up pre-filled pillboxes and assess for adverse reactions or adherence problems.
- A committed and prepared team, with full-time availability to address patient needs, including medication reactions.
- Continuous emotional support, education and counselling, which includes a support group.
- Regular interdisciplinary meetings to review patient progress, identify adherence problems, address other patient care issues, and find solutions.

Conclusions

HIV/AIDS care can be successfully integrated into a RH clinic in a limited-resource setting, utilizing resources from both the public and private sectors. A strong adherence programme with an interdisciplinary approach to care positively influences patient outcome.

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*PROFAMILIA, an NGO providing RH services in Santo Domingo, is the Member Association of IPPF in the Dominican Republic.