SURE Supporting the Use of Research Evidence

SURE Rapid Response – May 2010

What should be included in an optimal package of interventions to prevent the spread of HIV and manage HIV/AIDS?

Background

HIV/AIDS prevention and management requires a multi-pronged approach. A comprehensive package for HIV/AIDS management requires clinical and public health interventions for HIV prevention and treatment.

Key messages

The following should be considered for inclusion in an optimal package of interventions to prevent and manage HIV/AIDS:

Prevention

- Information campaigns to promote behaviours that prevent sexual transmission, such as correct and consistent condom use, reduction in the number of sexual partners, and delaying sexual debut
- Provision of safe and accessible male circumcision
- Voluntary HIV testing and counselling with emphasis for high risk groups and pregnant women
- Control of sexually transmitted infections
- Partner notification
- Improve coverage for high risk populations
- Support for people living with HIV/AIDS
- Post Exposure Prophylaxis (PEP)- occupational and non occupational
- Blood safety

REACH Regional East African Community Health Policy Initiative

EVIPNet Evidence-Informed Policy Network

Who requested this rapid response?

Dr. Zainab Akol

! This summary includes:

- **Key findings** from research
- **Considerations about the relevance of this research** for health system decisions in Uganda

X Not included:

- Recommendations
- Detailed descriptions

What is a SURE Rapid Response?

SURE Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing health systems, and strategies for implementing changes.

SURE – Supporting the Use of Research Evidence (SURE) for policy in African health systems - is a collaborative project that builds on and supports the Evidence-Informed Policy Network (**EVIPNet**) in Africa and the Regional East African Community Health (**REACH**) Policy Initiative (see back page). SURE is funded by the European Commission's 7th Framework Programme.

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Glossary of terms used in this report:
www.evipnet.org/sure/rr/glossary

- ART to prevent mother-to-child transmission (MTCT) of HIV (PMTCT)

Treatment

- ART with adherence support
- TB-HIV co-infection
- Opportunistic Infections treatment
- Opportunistic Infection prophylaxis
- Nutritional support
- Psychosocial support
- Palliative care: symptom management and end of life care
- Additional components of an optimal package of interventions to prevent the spread of HIV and manage HIV/AIDS

Summary of findings

Prevention

Interventions to prevent sexual transmission

A combination of approaches to prevent the transmission of HIV are needed, including:

- Interventions to prevent sexual transmission (e.g. correct and consistent condom use, reduction in the number of sexual partners, and delaying sexual debut). Several studies have shows that male latex condoms have a protective effect of 80% and more, against the sexual transmission of HIV and other Sexually Transmitted Infections (STIs), when used correctly and consistently.
- Messages that advocate for behavior change (e.g. in Uganda messages have called for abstinence, remaining faithful to one's partner (s), and avoiding cross-generational sex). A systematic review has shown that many abstinence-plus programs appear to reduce short-term and long-term HIV risk behavior among youth. Evaluations further consistently show no adverse program effects for any outcomes, including the incidence and frequency of sexual activity.
- Male circumcision. A systematic review showed strong evidence for the fact that medical male circumcision reduces the acquisition of HIV by heterosexual men by between 38% and 66% over 24 months. With the incidence of adverse events being very low, it indicated that male circumcision was a generally safe procedure. Including circumcision into current HIV prevention measures guidelines is justified; however consideration should be given to the acceptability and feasibility of providing safe services for male circumcision in areas of Africa where men are not traditionally circumcised.

Voluntary HIV testing and counseling

Voluntary counseling and testing (VCT) has been shown to provide behavior change and access to emotional support for those who test positive for HIV. Furthermore VCT, supported with pre- and postnatal antiretroviral therapy (ART) of HIV positive women and their infants, and appropriate infant feeding are effective in reducing Mother to Child Transmission (MTCT) of HIV.

Home-based testing and/or delivery of HIV test results at home, rather than in clinics, has been shown to lead to higher uptake in testing. And in addition, when provided free, VCT enhances both the number of clients testing per day and its cost-effectiveness in resource-limited settings. However, acceptance of VCT is usually conditionally based on benefits such as availability of antiretroviral drugs and infant feeding counseling. Furthermore, despite several systematic reviews, there still isn't sufficient evidence to recommend large-scale implementation of the home-based testing model.

Sexually Transmitted Infection (STI) detection and treatment

Reducing STI prevalence makes HIV transmission less efficient. Countries with poor STI control have been shown to be most vulnerable to HIV epidemics, while improvements in STI control have been shown to precede declines in HIV incidence and prevalence. There is evidence that countries that control STIs are more likely to halt and reverse their HIV epidemics than those that do not. This observation builds on extensive observational and historical evidence which has documented strong associations between several individual STIs and HIV and susceptibility of countries with poor STI control to developing sizable HIV epidemics.

Partner notification

A systematic review of partner notification suggests that: (1) many, if not most, HIV-infected individuals will cooperate in notifying at least some of their sex partners of the fact that they are exposed to HIV; (2) sex partners in turn are generally receptive to being notified and will promptly seek HIV testing; (3) patient referral is, however, probably not as effective as provider referral in reaching sex partners; (4) sex partners often are unaware of or misunderstand their HIV risks; and (5) sex partners frequently have high rates of HIV infection. Means for enhancing partner notification include social network interventions, coupling partner notification with behavioral interventions, reaching persons earlier in their HIV infection, using data collected from partner notification as a source of program evaluation information, and addressing important community concerns about partner notification.

Improve coverage for high risk populations

Groups most at risk of HIV infection include sex workers and their clients, injecting drug users (IDU), men who have sex with men and prisoners. These groups are discriminated against, face social marginalization and legislation that poses barriers to accessing health services. For example, it has been documented that one out of every ten new HIV infections is caused by injecting drug use and yet a recent systematic review revealed that worldwide coverage of HIV prevention, treatment, and care services in IDU populations is very low and that there is an urgent need to improve coverage of these services in this at-risk population.

Support for people living with HIV/AIDS

Promoting healthy relationships between people living with HIV/AIDS and their sexual partners and strengthening their overall well-being may reduce the likelihood of new HIV cases. Evidence from a

recent systematic review suggests that interventions targeting PLWHA in developing countries increase condom use, especially among HIV sero-discordant couples. Comprehensive positive prevention interventions targeting diverse populations and covering a range of intervention modalities are needed to keep HIV positive individuals physically and mentally healthy, prevent transmission of HIV infection and increase the agency and involvement of people living with HIV.

Post Exposure Prophylaxis (PEP)- occupational and non occupational

The use of PEP is based on limited direct evidence of effect. However, it is highly unlikely that a randomised trial will be conducted. Based on the results of case-control studies, a four-week regimen of PEP initiated as soon as possible after exposure, depending on the risk of sero-conversion, appears likely to reduce the risk of HIV infection.

Blood safety

Ensuring the availability of safe blood for transfusions reduces the risk of HIV infection amongst those needing transfusions. A systematic review showed infectivity estimates for infected blood transfusions are larger than for other modes of HIV transmission although very few studies on transmission risk per contaminated injection were found. A well-organized national blood transfusion service requiring training and retaining good staff, as well as effective blood-testing strategies, procurement, purchasing, quality assurance, and forward planning would be a big step in preventing a portion of HIV transmission. Another systematic review shows that a case of HIV/AIDS can be prevented for $11, and a DALY gained for $1, by an intervention which includes selective blood safety measures.

ART to prevent mother-to-child transmission (MTCT) of HIV

A systematic review assessing the treatment of HIV infection in pregnant women who are clinically or immunologically eligible for ART, found that ART is a safe and effective means of providing maternal virologic suppression, decreasing infant mortality, and reducing MTCT. Complementary measures that may also be used in addition to ART regimens include caesarian section and formula feeding; in some settings, the combination of providing all these measures has succeeded in reducing the risk of infection from 25% to about 1%.

Treatment

ART adherence support

Antiretroviral drugs are the main stay in the treatment of HIV. There is evidence to support the effectiveness of patient support and education interventions intended to improve adherence to antiretroviral therapy. Interventions targeting practical medication management skills, those interventions administered to individuals versus groups, and those interventions delivered over 12 weeks or more have been associated with improved adherence outcomes. Because of the complexity of selecting and following a regimen, the severity of the side-effects and the importance of compliance to, there is need for emphasis on the importance of involving patients in therapy choices, and recommend analysis of the risks and the potential benefits to patients and especially those without symptoms.

TB-HIV co-infection

Anti-tuberculosis treatment is necessary for patients with HIV-TB co-infection. Benefit in terms of prevention of TB has been demonstrated in Sub-saharan African countries and outcomes of patients with HIV-TB co-infection has improved over the years, attributable to improvements in antiretroviral and anti-tuberculosis treatment.

Opportunistic Infections treatment

Prevention and treatment of opportunistic infections has been shown to increase the lifespan of people with AIDS, a shift away from the early stages of the epidemic when most people died within two years of developing AIDS; often patients died because of un-managed opportunistic infections. Aggressive prevention, treatment, and suppression of opportunistic infections have improved both the quality and quantity of life of people living with AIDS.

Opportunistic Infection prophylaxis

Prophylaxis against opportunistic infections (OIs) is treatment given to HIV-infected individuals to prevent either a first episode of an OI (primary prophylaxis) or the recurrence of infection (secondary prophylaxis). Prophylaxis can prevent *Pneumocystis jiroveci* pneumonia, *Mycobacterium avium* complex (MAC), and toxoplasmosis, and tuberculosis in patients with latent *Mycobacterium tuberculosis* infection. A systematic review showed that the majority of children with HIV infection live in low-income countries without access to antiretroviral drugs and that the prevention and early treatment of opportunistic infections are the mainstay of their medical management. Cotrimoxazole, which is the main drug used for this prophylaxis, is cheap and effective against a wide range of organisms, and it is safe with relatively few side effects.

Nutritional support

Good nutrition may help prevent or delay the loss of muscle tissue or "wasting", strengthen the immune system, reduce viral mutations, decrease the incidence and severity of opportunistic infections and hospitalizations, and lessen the debilitating symptoms of HIV/AIDS. Furthermore the increased caloric requirements for HIV-positive individuals, undesirable side effects of treatment that may be worsened by malnutrition (and potentially alleviated by nutritional support), and the consequent threats of declines in adherence and increased drug resistance, are all reasons for developing more and better nutrition interventions for individuals on ARV treatment. A study done in 2006 found that moderate to severely malnourished people starting HAART experienced a six-fold higher hazard ratio for death. Those starting Antiretroviral Therapy (ART) who were moderately to severely malnourished were twice as likely to die as those who were not malnourished. Malnutrition decreases survival in patients starting ART and HAART for several possible reasons: impairment of immune reconstitution and in turn a prolonged period of opportunistic infection risk; adverse effects on drug absorption; lower threshold for drug toxicity; and/or decreased physical function.

Furthermore, food insufficiency is associated with increased HIV risk-taking behaviour and sex exchange. A recent study of food security and HIV risk behaviours in Southern Africa confirmed food insecurity in itself as a risk factor for HIV/AIDS transmission. From a maternal and child health perspective, malnutrition has been shown to increase transmission of HIV from a pregnant woman to her fetus, In addition, because of food insecurity and decreased access to safe water supplies, HIV-positive mothers are forced to breastfeed their children, which further increases the risk of HIV transmission.

Psychosocial support

HIV infection often can result in stigma and fear for those living with the infection, as well as for those caring for them, and may affect the entire family. Infection often results in loss of socio-economic status, employment, income, housing, health care and mobility. Counselling and social support can help people and their carers cope more effectively with each stage of the infection and enhance quality of life.

Palliative care: symptom management and end of life care

Palliative care is not curative care, but is supportive, symptom-oriented care. A systemic review with low quality evidence (lacking (quasi) experimental methods and standardised measures) found improvements across domains. The field of palliative care is responding to the clinical evidence that integration into earlier disease stages is necessary.

Additional components of an optimal package of interventions to prevent the spread of HIV and manage HIV/AIDS

Delivery of an optimal package of interventions to prevent and manage HIV/AIDS requires appropriate information systems, delivery, financial and governance arrangements, and effective implementation strategies.

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None known

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The **Regional East African Community Health-Policy Initiative (REACH)** links health researchers with policy-makers and other vital research-users. It supports, stimulates and harmonizes evidence-informed policymaking processes in East Africa. There are designated Country Nodes within each of the five EAC Partner States.

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