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ANNOTATED BIBLIOGRAPHY OF RESEARCH AND RESOURCES LINKING WATER, SANITATION AND HYGIENE WITH HIV/AIDS HOME-BASED CARE. Prepared by USAID Hygiene Improvement Project.
October 2007

Introduction

This bibliography contains citations and abstracts of 90 articles and reports that discuss linkages between water, hygiene and/or sanitation with HIV/AIDS care and treatment, or some aspect of health and well-being of people infected or affected by HIV and AIDS. In addition to the citations and abstracts, links to the full-text documents are included if available.

This bibliography is organized into 3 categories. These are:

A - Peer-review Literature – 32 published journal articles are included in this section.

B - [Reports](#) – This category includes 38 fact sheets, project reports and other documents from organizations.

C - Guidelines/Manuals – This section includes 20 guidelines and manuals on issues regarding home-based care (HBC).

B. [Reports](#) (alphabetical by author)

Ashton, P. and Ramasar, V. (2001). **Water and HIV/AIDS: some strategic considerations in Southern Africa.** IN: A.R. & Henwood, R. (Eds.) *Hydropolitics in the Developing World: A Southern African Perspective*, African Water Issues Research Unit (AWIRU) (2002).

Link: http://www.internationalwaterlaw.org/Articles/hydropolitics_book.pdf

This publication discusses the negative effects of the HIV/AIDS pandemic on the provision of water supply and efficient resource management. First a strategic overview of the HIV/AIDS pandemic in Southern Africa is provided and then the extent in which it influences and is influenced by water resource management on the continent is examined.

Centers for Disease Control and Prevention. (1999). **HIV and Its Transmission.** Atlanta, GA: CDC. Link: <http://www.cdc.gov/hiv/resources/factsheets/PDF/transmission.pdf>

This Fact Sheet discusses HIV transmission factors in the environment, households and business settings. For households, HIV has been transmitted between family members but this type of transmission is very rare. These transmissions are believed to have resulted from contact between skin or mucous membranes and infected blood. To prevent even such rare occurrences, precautions, should be taken in all settings "including the home" to prevent exposures to the blood of persons who are HIV infected, at risk for HIV infection, or whose infection and risk status are unknown. CDC recommends that gloves should be worn during contact with blood or other body fluids that could possibly contain visible blood, such as urine, feces, or vomit.

Centers for Disease Control and Prevention. (2007). **What You Need to Know About HIV and AIDS**. Atlanta, GA: CDC. Link: www.cdc.gov/hiv/resources/brochures/careathome/care3.htm

This brochure discusses how HIV is spread and how it is not spread. The brochure clearly says that HIV is not spread through feces, but that other germs can be transmitted through feces.

Centers for Disease Control and Prevention. (2007). **What Women Can Do**. Atlanta, GA: CDC. Link: www.cdc.gov/hiv/topics/women/protection.htm

This resource outlines the things that women can do to protect themselves from getting infected with HIV. The document tells women not to douche as it removes some of the body's natural protection.

Chandler, R., Decker, C. & Nziyige, B. (2004). **Estimating the Cost of Providing Home-based Care for HIV/AIDS in Rwanda**. PHRplus. Link: http://www.phrplus.org/Pubs/Tech045_fin.pdf

Partners for Health Reform Plus estimated the cost of Home-based Care for HIV in Rwanda, based on a sample of eight programs offering care in early 2004. The study found that facility-based care has higher estimated costs per client than community-based care, with monthly costs per client ranging from approximately \$ 31.20 to \$36.01 per month, the cost of community-based care ranged from \$ 12.75 to \$ 24.53 per month.

Fox, S. (2002). **Integrated Community-based Home Care (ICHC) in South Africa: a review of the model implemented by the Hospice Association of South Africa**. Cape Town, South Africa: POLICY Project. Link: http://www.synergyaids.com/documents/Hospice_SAfrica.pdf

In 1999 the POLICY Project supported seven hospices to incorporate the Integrated Community-based Home Care (ICHC) model into their operational activities. In the light of the grant period drawing to an end, this report was commissioned to document the critical elements of the ICHC model and reflect on the experiences of those working in the field. Objectives of the research were to: (1) identify and discuss key similarities and differences between the hospice ICHC model and other home-based care models used in South Africa; (2) identify and critically review the core elements related to the ICHC model as implemented by Hospice Association of South Africa; and highlight key aspects of best practice related to the hospice ICHC model. This report outlines information from a literature review and field research pertaining to these three objectives.

HABITAT. (2007) **HIV/AIDS checklist for water and sanitation projects**. Nairobi: United Nations Human Settlements Programme. Link: <http://www.unhabitat.org/pmss/getPage.asp?page=bookView&book=2068>

The HIV/AIDS checklist for water and Sanitation projects is a reference guide on how to deal with the issues raised by HIV/AIDS in the project cycle and to help practitioners in the water and sanitation sector design appropriate HIV/AIDS strategies, components and indicators to respond to the pandemic.

Hillbrunner, Chris. (2007). **Workshop on Integration of Water, Sanitation and Hygiene into HIV/AIDS Home-based Care Strategies: Background Paper**. Baltimore, MD: Catholic Relief Services.

This paper is an introduction for a workshop in Malawi to integrate water, sanitation and hygiene into HIV/AIDS home based care strategies. The background section provides information on the current status of the HIV/AIDS epidemic in Malawi, the country's water, sanitation and hygiene situation and an outline of the key linkages between these two sectors. A second section focuses on common findings and recommendations from the six WHO/USAID country assessments with additional Malawi specific information. A third section then highlights key lessons learned and recommendations. The paper ends with a series of issues requiring further discussion.

Hygiene Improvement Project. (2006) **Integrating Hygiene Improvement into HIV/AIDS Programming to Reduce Diarrhea Morbidity**. Washington DC: U.S. Agency for International Development.

Link:

<http://www.hip.watsan.net/content/download/1528/7298/file/HIP%20HI%20and%20HIV-AIDS%20integration8-06.pdf>

The purpose of this paper is to highlight discrete hygiene improvement activities that can be incorporated into HIV/AIDS programs in different settings to help mitigate the impact of diarrhea on people living with HIV and AIDS (PLWHA) and their families—prolonging and improving the quality of life for PLWHA and protecting family members and caregivers from contracting diarrhea.

IRC Water and Sanitation Centre. (May 2007). **HIV/AIDS : caring for HIV-infected people in South Africa requires love, patience and 200 litres of water per day**. *SOURCE Newsletter, May 2007*.

Link: <http://quisana.antenna.nl/pipermail/source-weekly/2007/000148.html>

This newsletter article discusses a Mvula Trust survey of home-based caregivers in the peri-urban settlement Jeppe's Reef. HBC groups say that they need 200 litres of water a day to care properly for their patients – 75-100 litres for laundry and the rest for cooking, bathing and drinking. Water for bathing and laundry is disposed of in toilet pits rather than being used for other purposes as it is used for washing soiled clothing and bedding and contains disinfectants. Another finding was that it is important for people with HIV to have access to clean toilets. Caregivers found that some models were more suitable than others.

IRC International Water and Sanitation Centre. (2007) **HIV/AIDS: Making the links with WASH**. Delft: IRC.

Link: <http://www.irc.nl/page/32435>

This web page lists a series of questions that need to be answered for discussing the specific water, sanitation and hygiene needs of households affected by HIV/AIDS.

Jones, H. & Reed, B. (2005). **Water and Sanitation for Disabled People and Other Vulnerable Groups: Designing services to improve accessibility**. Loughborough, UK: WEDC.

Link: <http://wedc.lboro.ac.uk/>

A major contributing factor to the poverty of disabled people is their lack of access to sanitation and safe water. Many vulnerable groups of people experience difficulties using water and sanitation facilities, such as frail, elderly people, pregnant women, parents with small children, and people who are injured or sick – including people with AIDS. Despite

the size of the problem, almost nothing has been published on this subject to date, and disabled people continue to be ignored by providers of water and sanitation services. Based on three years of international research and collaboration with water and sanitation and disability sector organizations, this book's main focus is on facilities for families in rural and peri-urban areas of low- and middle-income countries, but many of the approaches and solutions may also be applied in institutional settings, such as schools and hospitals and in emergency situations.

Kamminga, E. & Wegelin-Schuringa, M. (2006). **HIV/AIDS and Water, Sanitation and Hygiene: Thematic Overview Paper**. Delft: IRC International Water and Sanitation Centre.

Link: http://www.irc.nl/content/download/4199/48511/file/TOP2HIV_AIDS05.pdf

IRC's Thematic Overview Paper on HIV/AIDS discusses the main principles of HIV/AIDS and water, sanitation and hygiene, based on worldwide experiences and views of leading practitioners. It also provides direct links to more explanations and documented experiences of critical aspects of the topic. Some of the topics in the document include: (1) Some basic facts about the HIV/AIDS epidemic; (2) Linkages between HIV/AIDS and water, sanitation and hygiene from different perspectives: health, gender, community management, poverty alleviation and human rights, (3) The impact of HIV/AIDS on WSH organizations and service providers, etc.

Kangamba, M., Roberts, C. Campbell, J., Service, J. & Adalla, C. (2006). **Catholic Relief Services – Water and Sanitation Assessment of Home-based Care Clients in Zambia**. Baltimore, MD: Catholic Relief Services.

Link: http://pdf.usaid.gov/pdf_docs/PNADJ423.pdf

CRS responded to an announcement by the World Health Organization to conduct an assessment on the adequacy of water, sanitation and hygiene in relation to home-based care strategies for people living with HIV&AIDS in Zambia. One goal of the assessment was to provide evidence-based guidance on water and sanitation needs in home-based care strategies, particularly in resource-poor situations. Another goal was to identify the most critical measures to be taken by the health sector and the water and sanitation sector to provide short- and medium-term solutions in the area of water, sanitation and hygiene support to home-based care.

Kgalushi, R., Smits, S. & Eales, K. (2004). **People living with HIV / AIDS in a context of rural poverty: the importance of water and sanitation services and hygiene education, A case study from Bolobedu (Limpopo Province, South Africa)**.

Johannesburg, South Africa: The Mvula Trust and Delft, IRC International Water and Sanitation Centre.

Link:

http://www.irc.nl/content/download/11414/167794/file/Case_study_Limpopo_South_Af.pdf

This case study was undertaken by the NGO, The Mvula Trust, and recommends that the water sector give more attention to the specific effects of inadequate services on those who are HIV positive. It states that efforts to strengthen targeted multi-sectoral initiatives – notably with health and agricultural sectors and in schools – can have a key role in promoting closer integration of support and training to care givers.

Kiongo, J.M. (2005). **The Millennium Development Goal on Poverty and the Links with Water Supply, Sanitation, Hygiene and HIV/AIDS: A case study from Kenya**. Delft: IRC

International Water and Sanitation Centre.

Link: http://www.irc.nl/content/download/14995/199310/file/Case_study_Poverty-Watsan-H.pdf

This case study reviews the water supply and sanitation conditions in Kenya in relation to the Millennium Development Goals and with specific reference to the HIV/AIDS epidemic. Major conclusions are that the National HIV/AIDS strategy does not address any of the water and sanitation related needs of HIV/AIDS affected families. The Human Resource Development strategies of the WATSAN sector do not sufficiently take the implications of the HIV/AIDS epidemic into account. One of the recommendations is a partnership initiative for water, sanitation and hygiene promotion for health and livelihoods of the poor.

Laurent, P. (2005). **Household Drinking Water Systems and Their Impact on People with Weakened Immunity**. Geneva: World Health Organization. Link: http://www.who.int/household_water/research/HWTS_impacts_on_weakened_immunity.pdf

This report evaluates selected household water treatment systems, their respective strengths and weaknesses and their potential impact on people with weakened immune systems. The water treatment options that were evaluated include: boiling, pasteurization (fuel, firewood, solar radiation or cooking), solar disinfection, UV lamps disinfection, chemical disinfection (chlorination, preceded or not by coagulation/floculation and/or filtration), and ceramic filters in particular, other types of filters in general.

Lockwood, K., Msapato, K., Senefeld, S., Nigi, J., Perrin, P., Mitka, M. (2006). **Catholic Relief Services: Water and Sanitation Assessment of Home-Based Care Clients in Malawi**. Baltimore, MD: Catholic Relief Services. Link: http://pdf.usaid.gov/pdf_docs/PNADJ422.pdf

Catholic Relief Service conducted an assessment on the adequacy of water, sanitation and hygiene in relation to home-based care strategies for people living with HIV&AIDS in Malawi. The assessment was commissioned by the World Health Organization with the goal of producing evidence-based guidance on water and sanitation needs in home-based care strategies, particularly in resource-poor situations. In addition, to the assessment findings, this report makes recommendations to be made at the policy level, while also identifying the most critical measures to be taken by the health sector and the water and sanitation sector to provide short and medium-term solutions in the area of water, sanitation and hygiene support to home-based care.

Millennium Water Alliance. **Quality of life: Exploring the links between living with HIV/AIDS and safe water and sanitation**. Link: [www.mwawater.org/pdf/MWA%20H2O%20HIV%20final%20404%20\(2\).pdf](http://www.mwawater.org/pdf/MWA%20H2O%20HIV%20final%20404%20(2).pdf)

This paper provides a concise and useful overview of the many links between HIV/AIDS and clean water, improved sanitation, and adequate hygiene.

Mohammed, N., Gikonyo, J. (2005). **Operational Challenges: Community Home Based Care (CHBC) for PLWHA in Multi-Country HIV/AIDS Programs (MAP) for Sub-Saharan Africa**. Washington DC: World Bank. Link: <http://www.worldbank.org/afr/wps/wp88.pdf>

This paper documents Community Home-based Care for Africa, focusing on the operational challenges and limitations. It does not deal specifically with water and sanitation issues but provides a thorough discuss of current CHBC practices in Africa. Research shows that an effective and affordable CHBC for PLWHA, has the potential to positively impact the health and social status of patients, families and the community as a whole. However, research has also shown that CHBC area facing a multitude of challenges and limitations which not only adversely affect their ability to carry out their activities, but also have the potential to exacerbate poverty and existing gender inequalities among affected families and communities

Obi, C.L., et al. (2006). **The interesting cross-paths of HIV/AIDS and water in Southern Africa with special reference to South Africa.** *Water SA* 32(3) July 2006 pp 323-344.

Link: <http://www.wrc.org.za/downloads/watersa/2006/Jul%2006/1955.pdf>

This article gives estimates of the HIV/AIDS epidemic in South Africa. In rural areas that lack electricity and potable water, the impact HIV/AIDS is more profound because of the role of water in cooking, drinking, consumption of anti-retrovirals and in the preparation of milk supplements for infants. People with compromised immune systems are more prone to several diseases than individuals whose immune systems are not compromised by HIV/AIDS. HIV/AIDS patients therefore have greater requirements for potable water than uninfected individuals. Improving water quality will lead to a decline in child and adult mortality as well as diarrheal diseases in people living with HIV/AIDS. The cross-paths between HIV/AIDS and water have long-term implications for effective water resource management and the provision of wholesome water to communities.

Potter, A. and Clacherty, A. (2007). **Water services and HIV/AIDS. Water, sanitation and health and hygiene education in the context of HIV/AIDS : a guide for local government councillors and officials responsible for water, sanitation and municipal health services.** Pretoria, South Africa, Water Research Commission.

This report is intended to assist local government water services and environmental health officials with planning and implementing water and sanitation services, together with health and hygiene education, in order to reduce the impact of HIV/AIDS. It sets out a framework for municipal responses to HIV/AIDS and highlights ways in which HIV/AIDS can be mainstreamed into water and sanitation planning, regulation, implementation and provision. In order to clarify the institutional complexities in water and environmental health services, it provides a model, strategies and indicators for implementing project-related health and hygiene education in the context of HIV/AIDS.

Schuler, N. (2005) **Lessons and Experiences from Mainstreaming HIV/AIDS into Urban/Water (AFTU1 & 2) Projects.** Washington DC: World Bank.

Link:

http://iris37.worldbank.org/domdoc/PRD/Other/PRDDContainer.nsf/WB_ViewAttachments?ReadForm&ID=85256D2400766CC785257097005B8959&

This study gives an overview of HIV/AIDS interventions in the World Bank's African urban portfolio and reviews the challenges and lessons learned from 13 urban /water projects in Benin, Burundi, Lesotho, Mozambique and several other African countries.

UNICEF. (2002). **HIV and Infant Feeding: a UNICEF Fact Sheet.** New York: UNICEF.

Link: http://www.unicef.org/publications/files/pub_hiv_infantfeeding_en.pdf

The Fact Sheet provides facts on breastfeeding and replacement feeding to protect infants and a brief overview of UNICEF infant feeding activities and projects.

UNICEF. (2002). **Mother-to-Child Transmission of HIV: a UNICEF Fact Sheet**. New York: UNICEF.

Link: www.unicef.org/adolescence/files/pub_factsheet_mtct_en.pdf

The Fact Sheet provides facts on mother-to-child transmission of HIV, core principles and strategies to prevent transmission from a mother to her child and a brief overview of UNICEF MTCT activities and projects.

UNICEF. (2001). **Teacher's Guide for the Integrated Water, Sanitation and Hygiene Education, and HIV/AIDS for Grades 1 to 7**. Lusaka, Zambia: UNICEF. Link:

www.schoolsanitation.org/Resources/Readings/Zambia_teachersguide%5B1%5D.pdf

The guide covers the following themes: personal, water, food and community hygiene as well as HIV/AIDS facts, prevention, support, and care for those with HIV/AIDS. It includes participatory activities such as role-play, guessing games, case studies, surveys, mime, etc.

Water and Sanitation Program. (2007). **Water, Sanitation, and Hygiene for People Living with HIV and AIDS**. Washington DC: Water and Sanitation Program.

Link: http://www.wsp.org/filez/pubs/72200723130_SAHIVAIDSFN.pdf

This WSP study was conducted among people living with HIV and AIDS and a section of the population in selected areas of the Indian states of Tamil Nadu and Andhra Pradesh. It was followed by a national consultation for disseminating the findings of the study, building consensus on the need for mainstreaming water, sanitation, and hygiene safety messages in care and support programs for people living with HIV and AIDS, and identifying further strategies. This was followed by two state-level consultations in the two states. The Field Note summarizes the learnings from the study commissioned by the Program, the proceedings of the national and state-level consultations, and from desk research on other studies and experiences, mainly in South Asia.

WaterAid – **Making the links: Mapping the relationship between water, hygiene and sanitation, and HIV/AIDS: a joint think-piece by WaterAid Ethiopia and Prognist**. London: WaterAid.

Link: <http://www.wateraid.org/documents/makinglinks.pdf>

This paper highlights key connections in the relationship between water, hygiene and sanitation provision, and HIV/AIDS. It also makes recommendations for additional research that needs to be conducted such as how many HIV/AIDS sufferers are contracting (and eventually dying from) hygiene and sanitation related illnesses. More in-depth analysis of the different needs and concerns of different categories of people living with HIV/AIDS is important. The situation in rural areas is likely to be significantly different to that in congested urban slum areas. And any future study should differentiate along gender and age lines, as well as considering the different situations of those who may only recently have become infected with the virus compared to those who are in an advanced stage of full-blown AIDS. Many questions need asking. These include: What is the nature of the link between levels of infection of HIV/AIDS and the provision of hygiene and sanitation facilities? What is the relative importance of hygiene and sanitation compared to nutrition, medical care, etc? Do we need a better understanding, briefly alluded to, of the three-way causal relationship between hygiene and sanitation,

poverty and HIV/AIDS? Should agencies working to improve the well being of people living with HIV/AIDS be concentrating their efforts on hygiene and sanitation activities? And how might the WATSAN sector reduce the risk that people living with HIV/AIDS experience hygiene and sanitation related discrimination?

WaterAid. (2006). **Assessment of the Adequacy of Water, Sanitation and Hygiene Facilities in Resource-poor Areas of Nigeria in Relation to the Needs of Vulnerable People**. Abuja, Nigeria: WaterAid Nigeria.

This study was conducted in 36 communities in six of Nigeria's 36 states. Respondents indicated their HIV status had financial, health, social, physio-social and educational impacts on their lives. However, generally, there was considerable social support from relations and family members even though their major caregivers were adult females (90%). The study revealed that PLWHAs did not have adequate access to water and sanitation. Although a variety of improved and unimproved water sources were available in the communities studied, the improved sources (e.g. boreholes) which provided potable water were less than a quarter of what is required to serve the entire population. Availability of water varied with the season: more water was available to respondents in the rainy season because respondents predominantly relied on rain water during this period. During the dry season when water is scarce or in during times of illness, some PLWHAs (18.6%) resort to unimproved water sources of very poor quality. Stigma and discrimination against PLWHAs is a significant factor affecting access to water supply. 29% of respondents attested that they have felt unwelcome, uncomfortable, and discriminated against at a water point. They resorted to commercial water vendors to avoid such confrontations. Access to sanitation among PLWHAs was low. 47% of the PLWHAs did not have their own household latrines. Although the use of personal latrines was believed to promote privacy for respondents, many could not access these due to lack of funds.

Water Environment Federation. (1997). **WEF/U.S. EPA Biosolids Fact Sheet: Can AIDS Be Transmitted By Biosolids?** Alexandria, VA: Water Environment Federation.
Link: <http://www.biosolids.org/docs/intro.pdf>

The possibility of HIV entering municipal sewer systems has prompted inquiries as to whether HIV may be transmitted through contact with wastewater or with biosolids, the solid product created during wastewater treatment. Research has refuted links between contact with wastewater or biosolids and HIV transmission.

Water Supply and Sanitation Collaborative Council; Water, Engineering and Development Centre. (2004). **For Her It's the Big Issue: Putting Women at the Centre of Water Supply, Sanitation and Hygiene**. Water, Sanitation and Hygiene Evidence Report. Geneva: Water Supply and Sanitation Collaborative Council.
Link: http://www.wsscc.org/fileadmin/files/FOR_HER_ITs_THE_BIG_ISSUE_Evidence_Report-en.pdf

This report provides key messages and recommendations to promote the role of women in water, sanitation and hygiene (WASH) interventions. Even though women's involvement in the planning, design, management and implementation of such projects and programs has proved to be fruitful and cost-effective, the substantial benefits of this approach are not properly recognized. One result is that, all too often, women are not as centrally engaged in water and sanitation efforts as they should be.

Wegelin-Schuringa, M. Kamminga, E. & de Graaf, S. (2003) **Towards the Millenium Development Goals: HIV/AIDS and Its Implications for the Water and Sanitation Sector**. Abuja, Nigeria: WEDC 29th International Conference.
Link: <http://wedc.lboro.ac.uk/conferences/pdfs/29/Wegelin-Schuringa.pdf>

This conference paper has a section on Home Based Care and concludes that: "caregivers need to be trained in safe water handling and sanitation practices, personal hygiene, domestic hygiene, food hygiene and safe waste water disposal and drainage to effectively reduce the exposure to water and sanitation related diseases of their patients. Therefore, hygiene education must be one of the elements in training for home based care. Most training manuals for home based care do mention the need for hygiene and the use of safe water and latrines, but the manuals are based on an assumption that everyone has access to safe water and sanitation. They moreover assume that caregivers are informed on safe water handling practices. The advice that most care givers give to households with people living with HIV/AIDS (PLWHA) is to boil water for drinking. This is not always realistic."

Wegelin-Schuringa, M. & Kamminga. (2006). **Water and sanitation in the context of HIV/AIDS - The right of access in resource-poor countries**. *Health and Human Rights*, 9(1) 2006: 153-172.
Link: [Download pdf \(154 Kb\)](#).

This article reviews the linkages between these sectors and HIV/AIDS from a rights perspective and gives suggestions for strategies to be undertaken by state and non-state actors to promote access to water and sanitation as a right in an HIV/AIDS context.

Wegelin-Schuringa, M., and G.Tiendrebeogo (eds) (2004), **Techniques and Practices for Local Responses to HIV/AIDS. Part 1: techniques Part 2: practices**. Amsterdam: KIT Publishers; and Geneva: UNAIDS.

This toolkit documents experiences of communities around the world in dealing with HIV/AIDS. Techniques and practices are presented for others to learn from and adapt to their own context. Whenever possible, a contact address is given to enable users to get more information or to share their experience of using and adapting a given technique or practice. 'Part 1: Techniques' contains 20 techniques for application in different stages of the planning cycle. The purpose and use of each technique is described, and practical guidelines are given on how to proceed. 'Part 2: Practices' contains 50 practices used to address one or more specific problems. The practices are grouped into four categories: prevention, care and treatment, support and mitigation, and partnership and coordination.

WELL Project. (2004). **WELL Briefing Note: The HIV / AIDS Millennium Development Goal - What water, sanitation and hygiene can do**. London: WELL Project.
<http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/BN%20HIV%20AIDS.htm>

This Briefing Note states that even if there is no direct evidence of the impact of water, sanitation and hygiene on the care of HIV/AIDS patients, it is clear that water, sanitation and hygiene makes care of the sick within the home easier. Due to the establishment of a safe water supply, water used for personal bathing, washing clothing and utensils increased from about 3 0% to more than 50% of total water consumption. Volume of water consumption for potable and non potable purposes increased from 40 to 100 litres per day in India. Bathing using soap increased from less than once a week to as often as

every day. The existence of a yard tap nearly doubles the chances of a mother washing her hands after cleaning a child's anus, and doubles the chances of her washing faecally soiled linen immediately. Households with a distant water source cooked little, and only once a day because of a lack of water. A study in Salvador, Brazil, showed that children in households with no toilet, had twice the incidence of diarrhea than those with sanitary toilets.

WELL Project. **The HIV/AIDS Millennium Development Goal HIV/AIDS and water supply, sanitation and hygiene in Southern Africa**. London: WELL Project. Link: <http://www.lboro.ac.uk/well/resources/Publications/Briefing%20Notes/WELL%20HIV%20Poster%20Southern%20Africa%20NC.pdf>

This Poster looks at what school water, sanitation and hygiene can do to help fight HIV/AIDS in children in Southern Africa.

Wijk van, C. (2003). **WELL Factsheet: HIV/AIDS and water supply, sanitation and hygiene**. London: WELL Project. Link: <http://www.lboro.ac.uk/well/resources/fact-sheets/fact-sheets-htm/hiv-aids.htm>

An overview of the impacts of HIV/AIDS on families and households is discussed and a section on recommendations for the water sector is provided. It recommends that more robust water supplies, water treatment and sanitation systems requiring less (and less complex) maintenance and repairs, and more attention to home systems, including home treatment of drinking water, would make communities and households less dependent on outside support.

World Health Organization. (2000) **Home-based Long-term Care: Report of a WHO Study Group**. Geneva: World Health Organization. Link: http://whqlibdoc.who.int/trs/WHO_TRS_898.pdf

This report of a WHO Study Group provides guidance on the development, implementation, adjustment and monitoring of home-based long-term care. It includes definitions of long-term care and home-based long-term care and covers policy development, organization and management, financing mechanisms, and material and human resources (both formal and informal). The report also looks at the challenges of migration and living conditions; changes in the family and work-place; natural and other disasters and their aftermath; cost and sustainability; and accessibility, acceptability, adequacy, coverage, and quality of services and care.

World Health Organization. (2003). **Emerging Issues in Water and Infectious Disease**. Geneva: World Health Organization. Link: http://www.who.int/water_sanitation_health/emerging/emerging.pdf

This WHO report provides an overview of HIV/AIDS and other infectious diseases that are spread by contaminated water supplies.