

Nosocomial viral infections

Helmut Jäger, David Gisselquist, 01.12.2018

Introduction

As in the prevention of hepatitis C, the risk of transmission of infections through health care facilities is neglected in the fight against HIV and AIDS. The media reports on the 2018 World AIDS Conference lack references to connections that have been described in detail for decades (Gonzac 2008, Grimm 2011, Goldwater 2013), or to outbreak events such as in Cambodia from 2014-2015 (Rouet 2018).

Would it be useful to pay more attention to the subject? In order to compensate those affected in the past. And to minimize the risk of future infections.

... the decision of WHO, Western researchers, and the media to ignore the role of reuse of contaminated syringes and needles in health care settings and to instead emphasize African people's sex with multiple partners was .. critical in the explosion of HIV in Africa ... If iatrogenic transmissions had been taken seriously and addressed early, HIV in Africa would have been different. (Fernando 2018)

Einführung

Wie bei der Prävention von Hepatitis C wird auch bei der Bekämpfung von HIV und AIDS das Risiko der Übertragung von Infektionen durch Gesundheitseinrichtungen vernachlässigt. In den Medienberichten über die Welt-Aids-Konferenz 2018 fehlen Hinweise auf seit Jahrzehnten ausführlich beschriebene Zusammenhänge (Gonzac 2008, Grimm 2011, Goldwater 2013) oder auf Ausbrüche wie in Kambodscha von 2014-2015 (Rouet 2018).

Wäre es sinnvoll, dem Thema mehr Aufmerksamkeit zu widmen? Um die Betroffenen in der Vergangenheit zu entschädigen. Und um das Risiko zukünftiger Infektionen zu minimieren.

... die Entscheidung der WHO, westlicher Forscher und der Medien, die Rolle der Wiederverwendung von kontaminierten Spritzen und Nadeln im Gesundheitswesen zu ignorieren und stattdessen Sex der

Afrikaner mit mehreren Partnern zu betonen, war .. kritisch bei der Explosion von HIV in Afrika ... Wären die iatrogenen Übertragungen ernst genommen und frühzeitig angegangen worden, hätte sich die HIV-Epidemie in Afrika anders entwickelt. (Fernando 2018)

Why Africa?

Four countries with 0.8% of the world's population – South Africa, Botswana, Lesotho, and Swaziland – have 21% of the world's HIV infections (2016 data, UNAIDS 2017). Adult HIV prevalence was 27.2% in Swaziland, 25% in Lesotho, 21.9% in Botswana, and 18.9% in South Africa. In the same year, sub-Saharan Africa had 69% of the world's HIV infections (25.4 of 37.6 million), including 80% of infections in women (14.1 of 17.8 million). HIV not only infects more people in Africa, but also more women: the ratio of women to men with HIV is 1.5 in Africa, whereas in the rest of the world it's 0.52.



Prevention Projekt in Ghana (Foto BNI)

Surveys find sexual behaviour in Africa is similar or safer than in Europe. Can risks other than sex explain why so many people in Africa get HIV?

Lots of evidence says: Yes.

Beginning in the mid-1980s, most official HIV/AIDS experts have ignored abundant evidence unsafe healthcare risks transmit HIV in Africa (Potterat 2016). For example, over 12 weeks in June-August 1985, Project SIDA in Zaire (Democratic Republic of the Congo) tested 258 in-patient children aged 2-24 months at Mama Yemo Hospital in Kinshasa and their mothers for HIV; 32 children were HIV-positive, of which 16 had HIV-negative mothers. The paper that reported these infections noted that children had received injections (p 656, Mann 1986) "in dispensaries which reuse needles and syringes yet may not adequately sterilize their injection equipment." But there was no investigation – no call for other children to come for tests, and no report of steps taken to prevent future infections.

Another paper by three of the same authors shows the thinking behind the failure to investigate (p 962, Quinn 1986): "one cannot hope to prevent reuse of disposable injection equipment when many hospital budgets are insufficient for the purchase of antibiotics." In effect, the authors accepted an unknown frequency of nosocomial HIV transmission in Mama Yemo Hospital and elsewhere in Africa. The authors of these two papers include leaders of the international response to AIDS for 22 years: Jonathan Mann led WHO's Global Program on AIDS during 1986-90; and Peter Piot led UNAIDS during 1995-2008.

Over the years, there has been a continuing flood of evidence for unsafe healthcare and nosocomial HIV transmission in Africa. Jaeger (1991) and N'tita (1991) detailed risks with untested blood and unsterile instruments and procedures. Beginning from 1999, USAID has worked with African governments to survey health facilities: during 2006-15, surveys in six countries in East and Southern Africa reported that 17%-88% (median 68%) of clinics, dispensaries, health centers, and hospitals had equipment to sterilize instruments (USAID no date).

Beginning from 2001, USAID has worked with African governments to test random samples of adults (and sometimes children) for HIV; tests are coupled with questions about sexual behavior. During 2004-15, 11 surveys in Swaziland, Lesotho, Namibia, Zimbabwe, Zambia, and Mozambique reported HIV infections in self-declared virgins: in 11 surveys; across all 11 surveys, 2.2%-5.5% (median 3.6%) of self-declared virgin women and 0.6%-6.7% (median 3.1%) of self-declared virgin men were HIV-positive. In 2006, 22% of HIV-positive children aged 2-11 years in Swaziland had mothers who tested HIV-negative (Okinyi 2009); in Mozambique, 28% of HIV-positive children aged 0-11 years had mothers who tested HIV-negative (USAID no date).

In a 2012 survey of more than 3,000 high school students aged 12-20 years in KwaZulu-Natal, 6.2% of girls and 2.5% of boys were HIV-positive. More than half of the HIV-positive girls and boys said they were virgins (Kharsany, 2014).

A phylogenetic analysis of 1,376 HIV samples collected during 2010-14 from a random sample of adults in KwaZulu-Natal found a large cluster of 75 sequences, including a sub-cluster of more than 60 sequences. Phylogenetic analysis estimated all infections in the sub-cluster were acquired over 12 months from mid-2013 to mid-2014 (Coltart, 2018). Because the study sequenced an estimated 15% of HIV from adults in the community, and because the cluster likely extended beyond the sampled population, the number of infections in the sub-cluster in mid-2014 was likely well over 500; because transmission was ongoing when the samples were collected, whatever was causing the sub-cluster may have continued to infect hundreds more. Rapid transmission within this sub-cluster – much too fast to be explained by sexual transmission – is similar to what investigations have found in nosocomial outbreaks in Russia, Romania, Libya, Cambodia, and elsewhere.

In 2011, Grimm and Class (2011) urged Germany's Development Bank (KfW) to pay attention to evidence "an important share of new infections in high prevalence settings occurs through blood exposures in formal and informal healthcare," and called for "interventions targeted to strengthening the health care system in general and infection control in particular."

When asked on 22 December 2017, what conclusions KfW drew from that paper, Patrick Rudolph, Sector Policy Unit Health & Social Protection, KfW, responded on 19 January 2018: "... In South Africa – currently the only country in which the fight against HIV is the focus of German development cooperation in the health sector – the focus is clearly on preventing the sexual transmission of the pathogen ..." But how can he be so sure that HIV proliferation in South Africa can only be explained by sexual activity?

Apart from risky sexual contacts, people in Africa as well as in other countries with less intense generalized HIV epidemics face many other risks, including:

- Unsterile and often unnecessary medical procedures
- Cosmetic services, traditional markings and mutilations in girls and boys

- Depo-Provera (DMPA) for birth control, which increases women's risk to acquire and to transmit HIV (Haggood, 2018); 70% of DMPA in Africa was delivered within the framework of development cooperation.
- Campaigns to circumcise millions of men in Africa (Howe 2011) despite evidence of high risk for surgery in Africa (Weisser, 2008; Biccard, 2018).

The statements of Grimm and Class were confirmed again in a review: „If iatrogenic transmissions had been taken seriously and addressed early, HIV in Africa would have been different.“ (Fernando 2018) And also in a publication on unexpected HIV infections in young women in South Africa (Gisselquist 2018).

Aside from HIV, skin-piercing procedures with unsterile instruments are responsible for almost all of Africa's heavy burden of hepatitis C virus (HCV) infections. Treatment alone will not solve Africa's burden of HCV disease. WHO's strategy to treat HCV will enrich Gilead and some health institutions, but lower HCV incidence will be, at best, modest if “bad medicine” and “drug addiction” are not targeted – eradicated or at least reduced.

What to do to slow HIV and HCV transmission in Africa?

WHO and other international health organizations should urge African governments to:

- discourage unnecessary injections, surgery, transfusions and other skin piercing procedures;
- strengthen quality control, including especially reliable sterilization of reused skin-piercing instruments;
- educate the public about dangers from unsafe and unnecessary healthcare.

A key component of both healthcare quality control and public education about risks is to investigate adverse events – such as suspected nosocomial HIV and HCV infections – and to report findings to the public.

Investigations trace and test patients attending hospitals and clinics suspected to be responsible for nosocomial infections. Governments of Russia (1988-89), Romania (from 1989), China, Kazakhstan, Kyrgyzstan, Libya (from 1998), Cambodia (2014-15), and other countries investigated suspected nosocomial infections to find hundreds to thousands of infections (see

summaries and references in: Gisselquist 2007; Gisselquist no date).

To date, no government in sub-Saharan Africa has investigated suspected nosocomial HIV infections to see if they are part of an outbreak. This has been a huge mistake.

References

- Biccari BM, Madiba TE, Kluyts H-L, et al. 2018. Perioperative patient outcomes in the African Surgical Outcomes Study: a 7-day prospective observational cohort study. *Lancet*; 391: 1589-1598. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29306587> (accessed 28 May 2018)
- Coltart C, Shahmanesh M, Hue S, et al. 2018. Ongoing HIV micro-epidemics in rural South Africa: the need for flexible interventions. Conference on Retroviruses and Opportunistic Infections, 4-7 March 2018.
- Fernando, D: The AIDS Pandemic: Searching for a Global Response. *The Journal of the Association of Nurses in AIDS Care : JANAC* 09.07.2018. – <http://www.sciencedirect.com/science/article/pii/S105532901830133X>
- Gisselquist D. Points to Consider. 2008. London: Adonis & Abbey. Available at: <https://sites.google.com/site/davidgisselquist/pointstoconsider>
- Gisselquist D, Collery S, ed. No date. Don't get stuck with HIV. Available at: <https://dontgetstuck.org/cases-unexpected-hiv-infections/>
- Gisselquist D, Collery S: Unexpected HIV infections in young women in South Africa. *SSRN* 25.12.2018
- Goldwater, PN: Iatrogenic blood-borne viral infections in refugee children from war and transition zones. *Emerging infectious diseases* 19 (6).
- Gonczak M et al: Nosocomial HIV infection: epidemiology and prevention—a global perspective. *AIDS Rev.* 2008 Jan-Mar;10(1):47-61. Available at: <http://www.aidsreviews.com/resumen.php?id=992&indice=2008101&u=unp>
- Grimm M, Class DM. 2011. The fight against AIDS must be brought into balance. *KfW-Development Research No 3*, 24 June 2011. Available at: https://www.kfw-entwicklungsbank.de/Download-Center/PDF-Dokumente-Development-Research/2011_06_ME_Class-Grimm-The-fight-against-AIDS-must-be-brought-to-balance_E.pdf (accessed 28 May 2018).
- Hapgood JP, Kaushic C. Hel Z. 2018. Hormonal contraception and HIV-1 acquisition: biological mechanisms. *Endocrine Reviews*; 39: 36-78. Available at: <https://academic.oup.com/edrv/article/39/1/36/4788769>

(accessed 4 March 2018).

- Jager H, Jersild C, Emmanuel JC. 1991. Safe blood for transfusions in Africa. *AIDS*; 5: S163-S168.
- Kharsany ABM, Buthelezi TJ, Frohlich JA, et al. 2014. HIV infection in high school students in rural South Africa: role of transmissions among students. *AIDS Res Hum Retroviruses*; 30: 956-965.
- Mann JM, Francis H, Davachi F, et al. 1986. Risk factors for human immunodeficiency virus seropositivity among children 1-24 months old in Kinshasa, Zaire. *Lancet*; ii: 654-7.
- N'tita I, Mulanga K, Dulat C, et al. 1991. Risk of transfusion-associated HIV transmission in Kinshasa, Zaire. *AIDS*; 5: 437-439.
- Okinyi M, Brewer DD, Potterat JJ. 2009. Horizontally acquired HIV infection in Kenyan and Swazi children. *Int J STD AIDS*; 20: 852-857. Available at: <http://www.interscientific.net/IJSA20090kinyi.html#abstract> (accessed 21 May 2018).
- Potterat J. 2016. Why Africa? The puzzle of intense HIV transmission in heterosexuals. Chapter 7 in *Seeking the positives*. Available at: https://www.medizinisches-coaching.net/wp-content/uploads/2018/01/Potterat_Seeking-The-Positives-2016.pdf?x47477 (accessed 28 May 2018).
- Quinn TC, Mann JM, Curran JW, et al. 1986. AIDS in Africa: an epidemiologic paradigm. *Science*; 234: 955-963.
- Virus Type 1 in Rural Cambodia, 2014–2015. *Clin Infect Dis (CID)* 01.06.2018. 66:1733-41. Available at: <http://bedford.io/pdfs/papers/rouet-roka-hiv.pdf>
- Rouet F et al: Massive Iatrogenic Outbreak of Human ImmunodeficiencyUSAID. No date. The DHS Program: survey types. Available at: <https://dhsprogram.com/What-We-Do/survey-search.cfm?pgtype=main&SrvyTp=type> (accessed 9 May 2018).
- UNAIDS. 2017. HIV estimates with uncertainty bounds 1990-2016. Available at: http://www.unaids.org/en/resources/documents/2017/HIV_estimates_with_uncertainty_bounds_1990-2016 (accessed 12 October 2017).
- Van Howe RS, Storms MR. 2011. How the circumcision solution will increase HIV infections. *J Publ Health Africa*; 2: e4
- Weisser TG, Regenbogen SE, Thompson KD, et al. 2008. An estimation of the global volume of surgery: a modeling strategy on available data. *Lancet*; 372: 139-144. Available at:

[https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(08\)60878-8.pdf](https://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(08)60878-8.pdf)

Authors: Helmut Jäger, David Gisselquist