META-ANALYSIS AND UPDATE ON THE GENERAL AIDS EPIDEMICS PREDICTED FOR AFRICA

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INTRODUCTION. In 1984 the hypothesis was advanced in the US that a new virus was at the threshold of causing a world epidemic of immunodeficiency, alias AIDS, in line with the classic germ theory of disease. This theory predicts that a new pathogenic virus or microbe causes an exponentially spreading epidemic of new microbe-specific illnesses and deaths within weeks to months. The resulting bell-shaped epidemiological curves of illnesses and deaths were first described for a plague in London in 1665. Many other bell-shaped epidemics have since then been described, as for example the global Flu of 1918, shown in Figure 1. However, despite millions of HIV antibody-positive people worldwide [1], no general epidemic of immunodeficiency was recorded [2, 3]. Recently, a study from Harvard University "estimated" that from the year 2000 to 2005, 1.8 million South Africans were killed by HIV at a steady rate of 300,000 per year. These estimates were based on information from the World Health Organization (WHO) [4]. The study also claimed that antiretroviral drugs (ARVs) could have prevented at least 330,000 of those 1.8 million estimated deaths based on "modeling" the South African epidemic. Since no general HIV-AIDS-epidemics had been observed in any other continent, despite millions of HIV antibody-positives, and since steady losses of lives per year for 6 years are inconsistent with the exponential increases and declines of new germ epidemics, we have investigated the evidence for the claim that HIV killed 1.8 million South Africans at 300,000 per year from 2000 to 2005. In view of the inherent toxicities of anti-HIV drugs, we further asked whether the potential benefits of these drugs, claimed by the Harvard study, do indeed outweigh their inherent toxicities.

Fig. 1

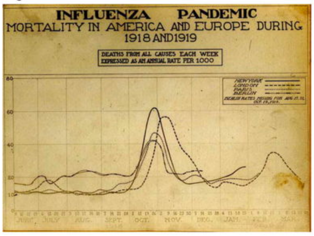


Fig. 2

Reported AIDS cases

	<1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Male														
Female														
Both sexes														

Source:

Reported HIV cases

A case of HIV infection is defined as an individual with HIV infection irrespective of clinical stage confirmed by laboratory criteria according to country definitions and requirements.

	<1996	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Male														
Female														
Both sexes														

Source:

Note: In some instances, the number in the total column is not the sum of the individual years due to differing reporting, estimation processes or available data.

RESULTS. Surprisingly, the WHO/UNAIDS does not list any numbers on "Reported HIV cases" and "Reported AIDS cases" in their epidemiological "Fact Sheet" for South Africa for the period of 2000 to 2005. As shown in Figure 2, the respective statistics from 1996 until 2007 are two empty boxes. In an effort to find independent evidence for the claims reported in [4], we investigated the AIDS mortality statistics of South Africa for evidence of steady losses of 300,000 lives per year for a total of 1.8 million between 2000 and 2005. Unexpectedly, we found that *Statistics South Africa* attributed an average of only 10,000 deaths to HIV per year between 2000 and 2005 (Table 1), i.e. 30-times less than claimed in [4]. And even this relatively low number may be an over-estimate, because all "HIV-diseases" are part of an AIDSyndrome [5], which includes the most common South African diseases and causes of death, namely "tuberculosis, pneumonias and intestinal infections" listed as "HIV-diseases" by *Statistics South Africa* [6].
Thus common African diseases may have been erroneously attributed to HIV, because they coincided with a positive test for antibodies against HIV. It follows that *Statistics South Africa* does not support the estimates of 1.8 million "HIV deaths" claimed by Chigwedere et al., and that even the low numbers reported by South Africa may be an overestimate. We conclude that there is no verifiable evidence that a putative HIV-epidemic killed 300,000 South Africans per year between 2000 and 2005. Consistent with these data, the population of South Africa increased by 3 million from 2000 to 2005, based on concordant statistics from South Africa and the US Census Bureau. As shown in Table 1 and Figure 3, this gain extended a steady growth trajectory of South Africa from 29 million in 1980 to 47.5 million in 2005, which then continued at the same steady rate [6, 7, 8]. The change of the growth trajectory predicted by the losses of 300,000 per year for 6 years is shown as a hypothetical branch of the observed monotonic growth curve in Figure 3A. But, the growth curve did not show any evidence for such new, steady losses of 300,000 lives per year from 2000 and 2005.
In sum, neither the WHO, nor the mortality statistics of South Africa, nor the population statistics of South Africa provide verifiable evidence for a putative HIV-epidemic that killed 300,000 South Africans per year between 2000 and 2005. The predicted epidemiological pattern associated with a new killing virus never showed up in South Africa between 2000 and 2005. In an effort to raise our investigation above variations among population statistics and AIDS epidemics of different African countries, we asked next whether the population of Sub-Saharan Africa as a whole was increasing or decreasing - in the face of the widespread prevalence of antibodies against HIV [1, 9, 10, 11, 12, 13]. Again we found in the statistics of the World Bank that the population of Sub-Saharan Africa as a whole had doubled during the HIV-AIDS era, from 400 million in 1980 to 800 million in 2007 [14]. We conclude that the predicted epidemiological patterns associated with a widespread new killing virus never showed up in Africa. It would appear then that HIV is a non-pathogenic passenger virus. The hypothesis that HIV is a passenger thus predicts that its spread and prevalence do not coincide with mortality. To test this prediction we investigated the effect of the spread and prevalence of HIV on the population growth curve of South Africa. For this purpose we plotted the HIV-antibody prevalence of the South African population reported by the *National Department of Health South Africa* since 1990 [15] on the same Figure 3 that shows the population growth curve (Figure 3 A and B). The new Figure 3B shows that anti-HIV antibodies were first detected in 1990 in 0.7% of the population. This percentage then increased slowly (not exponentially!) over about 10 years until 2000, when it leveled off between 25 and 30%. By comparing panels A and B (Figure 3) it can be seen that the steady growth trajectory of the African population since 1980 is unaffected by the rise of the HIV-prevalence from 0.7 to 30% between 1990 and 2000 and the steady prevalence of HIV since then. The independence of the growth trajectory of the South African population of HIV prevalence thus confirms our hypothesis that HIV is a passenger virus.

Tab. 1. Population statistics of South Africa

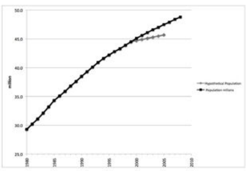
Year	Population (a) x 10^-3	HIV+ (b) %	HIV-Death (c) x 10^-3
1980	29,300		
1981	30,200		
1982	31,100		
1983	32,100		
1984	33,200		
1985	34,300		
1986	35,100		
1987	35,900		
1988	36,800		
1989	37,600		
1990	38,500	0.7	
1991	39,300	1.7	
1992	40,100	2.2	
1993	40,900	4.0	
1994	41,600	7.6	
1995	42,200	10.4	
1996	42,800	14.4	
1997	43,300	17.0	*
1998	43,900	22.8	*
1999	44,500	22.4	10.0
2000	45,100	24.5	10.5
2001	45,600	24.8	*
2002	46,100	26.5	*
2003	46,600	27.9	*
2004	47,000	29.5	13.0
2005	47,500	30.2	14.5
2006	47,900	29.1	
2007	48,400	28.0	
2008	48,800		

(a) Statistics South Africa and US Census Bureau [25, 28, 29].
(b) National Department of Health South Africa [43].
(c) Statistics South Africa [25, 26].
*not reported because HIV-deaths were below 10th rank.

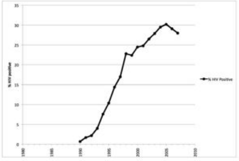
Since the rise of the HIV-antibody prevalence from 0.7% in 1990 to about 30% in 2000 is much too slow for the natural, exponential spread of a new virus (see Figure 1), we propose that HIV has been long-established passenger in South Africa. Recent evidence estimating that HIV has been in humans since at least the early 1900s corroborates the hypothesis that HIV is a long-established endemic retrovirus [16]. Unexpectedly, data from the CDC and WHO support the view that HIV is a passenger: these organizations postulate that HIV causes 27 previously known diseases, if antibody against HIV is also present [1, 5]. Since all of these diseases were known prior to the presumed recent origin of HIV [17] and continue to occur in the absence of HIV [18, 19, 20], the logical conclusion is that HIV is not necessary for any one of these diseases. The CDC and WHO also report millions of AIDS-free, HIV antibody-positives in the US, Europe, Asia and particularly in Africa [21, 1, 22]. Although even highly pathogenic viruses are not pathogenic in all infections, they always cause disease without delay, if they do. In contrast HIV is said to cause AIDS only after exceedingly long latencies of 5-10 years [1, 23, 24], although HIV induces anti-viral immunity within weeks after infection [25, 26]. Thus HIV is sufficient to replicate, but inherently insufficient to cause AIDS - the hallmark of a passenger virus. Moreover the US Army reported recently that HIV-positive soldiers [27], without abnormal AIDS risks and without anti-HIV treatments (see next), developed no AIDS for up to 25 HIV-antibody-positive years [28]. Thus the CDC, the WHO and the US Army provide evidence that HIV is not necessary or sufficient for AIDS, which supports our demographic evidence that it behaves like a passenger virus.

Fig. 3

A



B



CONCLUSIONS. Our meta-analysis of African AIDS revealed unexpected discrepancies between the reported epidemics of AIDS and of HIV. The predicted epidemiological pattern of mortality associated with the putative new AIDS virus never showed [29] up in South Africa or anywhere else in Africa between 2000 and 2005. On the contrary, the African population doubled during the HIV-AIDS era, despite high prevalence of HIV. Our analyses have thus resolved the paradox that HIV would cause a general AIDS epidemic in Africa, but not in the rest of the world. It seems that HIV by itself is not causing AIDS. This would also explain the tight association of AIDS with non-viral risks such recreational and anti-viral drugs [30].
In view of this and the inherent toxicities of anti-HIV drugs reviewed by us here, we propose a re-evaluation of the HIV-AIDS hypothesis. Until there is new, verifiable evidence that HIV is fatally pathogenic, we surmise that South Africa's ''failure to accept the use of available ARVs [anti-HIV drugs]" [31, 32] has probably saved rather than cost South African lives. We do not rule out, however, that anti-HIV drugs, owing to their inherent cytotoxic and anti-cancer effects, can have beneficial effects against "opportunistic" diseases and cancers, if prescribed for limited periods of time [30, 33].

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