



HIV-Positive Health Care Workers

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Dear Readers,

There is mainly good news for HIV-positive physicians and nursing staff.



Unlimited opportunities also in the operating theatre! Photo: agp/pixelio.de (*This photo has been taken without reference to HIV. Due to the unforeseeable consequences, we would never show HIV-positive staff at this point.*)

In August 2012, the German Registered Association for Combating Viral Diseases (DVV) and the Society for Virology (GfV) published a recommendation containing regulations on what tasks HIV-positive healthcare employees are allowed to perform.

This was the starting point for eliminating discrimination against HIV-positive employees. The previous uncertainty has too often led to HIV-positive physicians and nursing staff being unjustly banned from certain work areas by hospital managements and company medical officers.

Enjoy reading!

Steffen Taubert and Armin Schafberger

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The situation of HIV-positive healthcare workers

It has been generally known for a long time: HIV transmissions from physicians to patients are extremely rare. There are yet numerous irrational fears that lead to the exclusion of HIV-positive healthcare staff.

Every year, more than 2.5 million new HIV infections occur worldwide, in most cases due to unprotected sexual intercourse.

Since the beginning of the HIV epidemic, however, there have only been four documented cases of HIV transmission from physicians or nursing staff to a total of nine patients. No further cases have occurred since 2003 – in Germany, there has not been a single one since the beginning of the epidemic.

The reasons for safety in the medical sector include high hygiene standards, but most notably the relatively difficult transferability of the HIV virus, compared to other pathogens. It would require bleeding wounds of physicians and nursing staff AND the subsequent transfusion of this blood into the patients. In real-life situations, this is only possible during extensive surgeries, where the surgeon is exposed to a high risk of hurting himself/herself with bone splinters or his syringe while having his/her hand in the operating field.

Most physicians do not encounter this situation and neither do nursing staff, medical-technical assistants or laboratory staff. Basically, this side issue therefore only concerns medical employees who perform surgical activities, i.e. surgeons, urologists, gynaecologists and some other specialists.

Scientifically incomprehensible reactions of hospital managements, company medical officers and educational centres nevertheless occur again and again:

HIV-positive healthcare staff

One in nine employees works in the healthcare sector: As estimated by the DVV and the GfV, 5,300 of these 4.7 million employees are HIV-positive; however, this figure also includes professional groups who do not come into contact with patients.

Positive serostatus prevents exercise of profession

Under the title "[HIV-positive: End of a career](#)", a surgeon impressively described in *Deutsches Ärzteblatt* [the German Medical Association's official journal] how an HIV infection terminated his career (anonymous surgeon 2011).

We at German AIDS-Hilfe know numerous cases of HIV-positive medical students who were not allowed to complete the surgical part of their year of practical training. When their serostatus became known, hospital nurses were no longer allowed to work in patient care. Due to the HIV status, employment offices did not grant any allowances for re-training as nursing staff, arguing that the applicant will not be allowed to work in this sector later on anyway.



The decisions of hospital managements and educational centres put HIV-positive employees at a disadvantage far too often. Photo: Rolf Handke/pixelio.de

Hospital managements, company medical officers and educational centres want to be “on the safe side” to prevent the “worst-case scenario” of an HIV transmission to patients. Out of uncertainty and ignorance of the routes of transmission, an approach that seems safe is often selected: HIV-positive employees are excluded from work.

This is done even though there would definitely be a lot to do in the infection control of other pathogens: The European Centre for Disease Prevention and Control (ECDC) estimates the number of hospital-borne infections at 3 million annually Europe-wide and the number of deaths at 50,000 (see page 8).

The wrong decisions in respect of HIV-positive staff have led to the publication of official recommendations, which are aimed at providing more safety to all parties involved.

The starting point for eliminating discrimination has been made.

**Taboo subject:
HIV in the healthcare sector**

Positive or negative? No professional group is as afraid of an HIV outing as physicians. To date, hospital employees have run the risk of having to terminate further training. The main concern of registered physicians is that their patients could be scared away, leaving the practice empty. These concerns are not unjustified:

A survey in the United States has revealed that 89% of more than 2,300 respondents agreed with the statement that they wanted to know whether their physician or dentist was infected with HIV (Tuboku-Metzger 2005). 82% agreed with the statement that a hepatitis B or C infection should be disclosed. At least, 47% did not think that physicians can transmit HIV more easily than hepatitis. Only 38% said that infected physicians should be allowed to work in patient care.



How do patients perceive HIV-positive physicians?

Photo: Sean Prior/Clipdealer. This photo has been taken without reference to HIV. Due to the unforeseeable consequences, we would never show HIV-positive staff at this point.

Even if the survey in the USA cannot be automatically transferred to Germany: Such a survey would most likely yield a similar result in Germany. The authors around Tuboku-Metzger also conclude that the public had better not be informed about the (virtually non-existent) risks.

In the German DVV-GfV recommendations, the question whether physicians are obliged to inform their patients is addressed under the aspect of “Legal situation vis-à-vis patients” (see page 4).

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The German recommendations

The German Registered Association for Combating Viral Diseases (DVV) and the Society for Virology (GfV) have now published new recommendations for preventing HIV transmission from HIV-positive staff to patients (Rabenau et al. 2012). The objective of the recommendations – as stated in the introduction – is to prevent nosocomial infections¹, i.e. so-called “hospital-borne infections”. The recommendations primarily serve to protect patients, in addition to also taking the professional interests of HIV-positive staff into account.

Recommendations for patient protection:

- **Irrespective of the HIV viral load, there are no restrictions for any activities outside the surgical/invasive² spectrum**, since, according to the recommendations, HIV transmission from infected staff to patients is impossible “with a probability bordering on certainty” during non-invasive medical care”, provided that the common hygiene rules are observed.
- **At an HIV viral load below 50 copies/ml of blood serum, all activities (also surgical interventions) can be performed**, provided that double³ gloves are used during “invasive and surgical” activities, the employee regularly visits the company medical officer and is monitored by an experienced HIV specialist, and the viral load is checked at least quarterly. The activities can also be continued if a short-term increase of the viral load occurs (Blip, 51-500 copies/ml, for a maximum period of approx. 14 days).
- **At an HIV viral load of more than 50 copies/ml of blood serum, there are restrictions: Surgical interventions involving a high risk of injuries may then**

¹ Nosocomial infections develop during treatment and care in hospitals (Ancient Greek: nosos stands for disease, komein for care. Nosokomeion stands for hospital in Ancient Greece).

² Invasive interventions include e.g. cardiac catheterisation.

³ Better safe than sorry. When the upper glove is damaged, the different colour of the lower glove is a special indication that it's time to change the gloves. Double gloves are also used in extensive surgeries by physicians not infected with HIV to protect themselves and their patients.

no longer be performed. Activities “involving a high risk of injuries” are understood to be all types of surgeries where the physician performing surgical activities is exposed to a higher risk of hurting himself/herself and subsequently bleeding into the surgical wound (see table on page 6). Other surgeries may still be performed using double gloves because “when observing the hospital’s hygiene precautions, the transmission risk is to be classified as very low also during invasive procedures” (Rabenau 2012).



Basically, the recommendations only concern some specialist disciplines, since other professions in the healthcare sector involve no invasive activities with a high risk of self-endangerment, which means that they are not subject to any restrictions beyond the observance of common hygiene rules.

Photo: JMG/pixelio.de. This photo has been taken without reference to HIV.

About the recommendations of the [German Registered Association for Combating Viral Diseases \(DVV\)](#) and the [Society for Virology \(GfV\)](#)

Legal situation

According to DVV and GfV, “HIV-positive HCWs (healthcare workers)” involve no risk for patients with a probability bordering on certainty, which is why it can be argued that there is no ethical obligation to inform the patients about the infection of the HCW.

Hospital managements, however, often use the argument that they are held liable, should it turn out that a surgeon is HIV-positive (source: surgeon to DAH, 2011).

Jens Jarke from the Ministry for Health and Consumer Protection, Hamburg, and Jacob Hösl, lawyer specialising in HIV, respond to this argument as follows:

“Regarding the endangerment of third parties by so-called infectious personnel, the deciding factor is not the fact that a surgeon or another employee of a healthcare centre has an infection but the fact whether or not this turns out to pose a risk to the patient in the specific treatment situation. If this risk can be excluded as far as is humanly possible to tell, the liability of the physician or the healthcare centre can be excluded as well. The presence of an infectious disease cannot be interpreted to mean that the carrier is actually infectious; this can only be ascertained by taking a look at the specific individual case.” (Jarke, Hösl, 2011).

Should a potential risk arise despite all precautions, the DVV-GfV recommendations prescribe that the respective patient be notified immediately and offered a post-exposition prophylaxis (PEP). If PEP becomes necessary during surgery, it can be performed while the patient is still under anaesthesia, without requiring his/her consent (Rabenau et al 2012).



Photo: Gerd Altmann /pixelio.de

What situations involve a risk of HIV or hepatitis B/C transmission from physicians to patients?

HIV and hepatitis B/C viruses can be transmitted from a physician to patients if

- the physician is injured

AND

- the blood from this wound subsequently comes into contact with the patient's wound or mucosa



According to the DVV-GfV recommendations, the serostatus and the viral load level do not matter in case of emergency. In this case, immediate assistance is the top priority. This also applies to emergencies in hospitals and medical practices.

Photo: s.media/pixelio.de. This photo has been taken without reference to HIV.

Interventions and situations involving a particularly high risk of injuries

In contrast to the American recommendations, the German **DVV-GfV recommendations** stay more general in this respect and name four surgical areas:

1. Space-critical operating field with poor visual control, e.g. during interventions in the chest or abdominal cavity, especially if the surgeon is requested to palpate the operating field while using sharp instruments.
2. Long surgery period. Both gloves need to be changed every 2-3 hours.
3. Micro-injuries caused by suture material. Tying up the suture involves the risk of injuries in the flexion creases of the fingers.
4. Palpation/Dissection near sharp instruments or metal wires (as suture) or near sharp bone fragments.

The DVV-GfV recommends that the viral load should be checked on a quarterly basis.

Recommendations are also aimed to protect HIV-positive staff

Similarly to hepatitis B- and C-positive staff, the DVV-GfV recommends ensuring that HIV-positive employees are treated by a company medical officer in order to be able to protect them when their health status deteriorates.

For example, they should no longer treat tuberculosis patients if the number of helper cells significantly decreases (below 350 cells/ μ l).

Vaccinations against e.g. hepatitis A/B, measles-mumps-rubella¹ (MMR), varicella zoster virus, whooping cough and influenza should be performed consistently.

The **American SHEA recommendations** classify surgical/invasive interventions into three categories. We describe these three categories on the basis of examples (not complete):

SHEA recommendation		Category 1	Category 2	Category 3
Examples of surgeries in the respective categories (not complete) For a complete list, please refer to: SHEA recommendations (Henderson 2010)		Routine dental preventive procedures, Minor surface suturing Rectal or vaginal examinations Lower gastrointestinal tract endoscopic examinations	Dental surgeries under local anaesthesia Cardiac catheterisation Bronchoscopy Breast surgery (augmentation/reduction) Laparoscopic surgeries (abdominal keyhole surgery) Amputations Percutaneous cardiac procedures	Extensive dental and orthodontic surgeries Open abdominal surgeries (e.g. gall bladder, intestines) Renal surgeries Surgeries in the chest Neurosurgery (brain) Transplantations (except for skin and cornea) Every surgery lasting longer than three hours
Hep B and hep C	VL < 10,000 /ml	Yes Gloves as usual	Yes Double gloves	Yes Double gloves
	VL ≥ 10,000 /ml	Yes Double gloves	Yes Double gloves	NO
HIV	VL < 500 /ml	Yes Gloves as usual	Yes Double gloves	Yes Double gloves
	VL ≥ 500/ml	Yes Double gloves	Yes Double gloves	NO

Tab. Categories for surgical / invasive interventions in the SHEA recommendations. Summarised, according to pathogen and viral load (Henderson 2012). According to the SHEA, there are further requirements in addition to the requirement to wear gloves: The viral load must be checked twice a year, the “healthcare worker” must be in treatment with an HIV specialist and advised by an expert for infection control (company medical officer?).

Differences between German and American recommendations

Viral load limit: The German DVV-GfV recommendations (Rabenau 2012) draw a limit for HIV viral load at 50 copies/ml, the American SHEA recommendations (Henderson 2010) at 500/ml.

Double gloves: The SHEA recommendations give clear instructions when double gloves must be used – and when not. The DVV-GfV recommendations prescribe the use of double gloves during all “surgical and invasive activities” at a viral load of ≤ 50 copies/ml.

Surgical activities: SHEA classifies numerous invasive and surgical activities into one of three categories, whereas such a list is missing in the DVV-GfV recommendations.

Checkups: The SHEA recommendations demand that the viral load be checked every six months, the DVV-GfV recommendations every three months.

Voluntary nature: The SHEA recommendations advocate voluntary and confidential routine tests. Physicians performing category-3 surgeries should be aware of their serostatus and immune status regarding HIV and hepatitis. The involvement of the hospital or (for registered physicians) the regional health authority in the event of a positive status is regarded as an ethical obligation. The DVV-GfV recommendations urge HIV-positive staff in respect of the German Infectious Disease Control Act to “take measures to prevent the spreading of any pathogens, not only that of the HIV infection. This means that the HCW (healthcare worker) should confide in the

company medical officer or the expert committee”.

In the aggregate, the German guidelines are more stringent than the American guidelines, especially regarding viral load and the requirement to use double gloves.

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Deutsche AIDS-Hilfe’s criticism of the recommendations

The DVV-GfV recommendations (Rabenau 2012) talk about “healthcare workers”.

In DAH’s opinion, this extension to include all employees in the healthcare sector is unnecessary. There are many disciplines in clinical practice where the employees do not come into contact with patients.

Even nursing staff could have been completely excluded. The only documented case so far of transmission through a nurse (Boujon 2000) is the one least verified from a scientific point of view: The route of transmission remained unclear in this case (see page 8).

Hence, the recommendations impose regulations to all employees which should only apply to a small circle of medical staff.

This situation is best reflected in the requirement to wear double gloves “during invasive and surgical activities”. The American recommendations define more closely which surgeries are concerned and which are not. Therefore, the American guidelines also make clearer that the requirements do not apply to medical students who are just present, to nurses in the operating theatre or other nursing staff.

The list is also more suitable to make clear that activities of nursing staff, such as taking blood samples, giving injections and changing infusions and bandages, do not fall into one of the three categories. In these cases, it is sufficient to observe the common hygiene rules. After all, they have been created to prevent not only the transmission of HIV but also that of other infectious diseases.

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Probability of HIV or hepatitis transmission

Both the American SHEA and the German DVV-GfV recommendations estimate the average risk of injuries with a sharp object (needle, scalpel) that is contaminated with infectious blood as follows:

• HIV	approx. 0.3%
• Hepatitis C (HCV)	approx. 3%
• Hepatitis B (HBV)	approx. 30%



Scalpel. Photo: Thommy Weiss/pixelio.de

The figures for transmission probability indicated above are average values. In the individual case, the risk also depends on the viral load, the amount of blood in the wound and the wound depth (superficial scratch or bleeding into the surgical wound).

The risk of contracting hepatitis B is thus approximately one hundred times higher than the risk of contracting HIV in the case of a needlestick injury. The risk of contracting hepatitis C is estimated to be approximately between the two figures, i.e. approx. ten times higher than the risk of contracting HIV (Rabenau 2012, Henderson 2010).

The risk table emphasises the significance of hepatitis B vaccination for healthcare staff!

There is no vaccination and no post-exposure prophylaxis (PEP) against hepatitis C.

HIV is more difficult to transmit than hepatitis viruses; HIV can also be deactivated through disinfectants more easily. Disinfection against hepatitis C, however, involves considerably more effort than against HIV (Ciesek 2012, also [HIVreport 4/2011](#)).

How many HIV transmissions from physicians to patients have there been?

In Germany, not a single case has been described since the beginning of the HIV epidemic. Also on a global scale (according to the DVV-GfV and SHEA recommendations), merely these four cases are described in scientific literature:

1. In Florida, a dentist suffering from AIDS infected six patients. The circumstances of the transmission remained unclear; the authors assume a direct transmission from the dentist to the patients rather than a transmission between patients (Ciesielski 1992).
2. In Paris, an orthopaedist performing surgical activities infected a patient (Blanchard 1998). He is most likely to have become infected in 1983 as a result of a needlestick injury of a patient, who later died of AIDS. In 1992, the surgeon was suffering from AIDS himself, but was not aware of the infection and infected a patient during a long surgery.
3. Also in Paris, a nurse who was not aware of her infection probably infected a patient. After four weeks in the surgical unit, the patient developed a seroconversion. None of the surgeons was HIV-positive. A phylogenetically similar virus was found in a night nurse. As the Western blot showed a clearly positive result and her helper cell count was low, it was assumed that she had infected the patient (and not the other way round). It was not possible to retrace any surgical activity or blood contact that could have led to the infection. Oddly enough, the nurse additionally had a hepatitis C infection but the patient did not (although it is ten times easier to transmit hepatitis C through blood than HIV). The authors found that this case was “untypical” and clearly advised against rash decisions such as compulsory testing of nursing staff.
4. In Spain, a gynaecologist infected a patient while she was giving birth to her child (Mallolas 2006). After 14 days of delivery, the patient developed an antiretroviral syndrome. The infection was caused by a needlestick injury of the gynaecologist. Since he was not aware of his serostatus and did not report the needlestick injury to the hospital, it was not possible for the patient to apply PEP (post-

exposure prophylaxis). A phylogenetic examination conducted about one year later showed a close match between the viruses in the patient and the physician.

Retrospective investigations

In order to exclude that even more patients are affected, investigations have been conducted in all these cases. For this purpose, all patients treated by the HIV-positive physicians were examined. In the case of the French orthopaedist, more than 3,000 patients were examined. None of them was positive.

Another study investigated whether HIV-positive “healthcare workers” could have infected patients. The Centers for Disease Control and Prevention (CDC) tested more than 22,000 patients of more than 51 HIV-positive healthcare workers. There was no evidence of an HIV transmission from HCWs to patients (Robert 1995).

Nosocomial germs represent a bigger problem than HIV

Both the DVV-GfV and the SHEA recommendations emphasise that HIV transmission from physicians (or “healthcare workers”) to patients is very rare and can virtually be excluded in everyday routine at clinics and medical practices.

By comparison, hepatitis B or C transmissions between patients occur more frequently (Henderson 2012). They are the consequence of inadequately sterilised and reused medical instruments, irrespective of the serostatus of the “healthcare worker”. This comparison underlines the significance of general hospital hygiene.

In general, there is a considerable risk of contracting so-called hospital-borne germs (nosocomial infections) at hospitals. For this reason, a nation-wide “Nosocomial Infection Surveillance System” (KISS) exists to register such infections.

Nosocomial infections most frequently occur in intensive care units. Christine Geffers und Petra Gastmeier from the National Reference Centre for the Surveillance of Nosocomial Infections at the Charité in Berlin report in the *Deutsches Ärzteblatt* about 57,000 infections annually in German intensive care units alone (Geffers, Gastmeier 2011). These are predominantly infections with bacteria (amongst

others: staphylococci, klebsiella, Escherichia coli, enterococci) and fungi (Candida albicans). These pathogens can cause serious diseases and may become life-threatening for babies and people suffering from immunodeficiency. Severe courses may occur if such infections involve multi-resistant pathogens (e.g. MRSA) that do not respond to conventional antibiotics.

However, by far not all nosocomial infections can be attributed to lack of hygiene on part of physicians and nursing staff. According to Geffers and Gastmeier, investigations have shown that infection control strategies allow for achieving a reduction of between 11% and 55%.

Three million hospital-borne infections, 50,000 deaths per year in Europe

At European level, the Centre for Disease Prevention and Control (ECDC) estimates the annual number of nosocomial infections at approx. 3 million in the 25 EU member states, with an estimated 50,000 of which resulting in death. Approx. 20-30% of these infections could be prevented through improved infection control (ECDC 2005).

So there is a lot to do to reduce the number of nosocomial infections. However, neither the exclusion of HIV-positive staff nor the use of double gloves is helpful in this effort.

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Dismissal of a chemical-technical assistant

In January, the Berlin-Brandenburg Regional Labour Court confirmed the decision of the previous instance that the dismissal of a chemical-technical assistant suffering from an HIV infection is admissible. What next?

The assistant was dismissed during the probationary period – when his HIV-infection became known. The employer indicated industrial safety as the reason for the dismissal.

How can this be? According to the American SHEA recommendations (Henderson 2010), activities such as the dissolution, syringe preparation and administration of medicine belong to those activities which can be performed irrespective of the HIV viral load. Since August, this has also been applicable

according to the German recommendations (Rabenau 2012).



HIV has so far never been transmitted through tablets, pills and food. Photo: Klicker/pixelio.de

Dr. Uta Ochmann from the Institute for Occupational, Social and Environmental Medicine of the LMU Munich has expressed her view in terms of labour law (Ochmann 2012): She poses the question whether the employer had the right at all to ask for the HIV status. This may only happen if third parties are put at risk of contracting an infection; however, HIV transmissions through air, food or tablets have so far not been documented. Company medical officers and occupational physicians must inform the company and the employees about the routes of transmission on the basis of current knowledge. Ochmann suggests that company medical officers be supported by also developing recommendations for employees in non-medical professions. As seen by Deutsche AIDS-Hilfe, such a recommendation could be kept clear and brief: There is no HIV transmission problem here!

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