



ALLIANCE FOR MICROBICIDE DEVELOPMENT

21 November 2008, Volume 9, Number 46

The Alliance for Microbicide Development News Digest is an unedited compilation of:

- Media coverage of microbicides;
- Abstracts of published articles on microbicides and relevant science;
- Material on other reproductive health and HIV prevention technologies; and
- Matters of politics and policy with importance for microbicide research, development, and advocacy.

Its purpose is to:

- Raise awareness around the broadest possible range of opinions and information about microbicides disseminated in scientific journals and the media; and
- Provide an objective basis for decision-making and evidence-informed advocacy.

Articles included in the Digest do not necessarily reflect the views of the Alliance. No press releases are included, however when information from a press release is picked up by the media, that coverage is included. To suggest material for inclusion, please contact digest@microbicide.org.

The Digest is produced in a web-based format. Readers can view complete issues of the Digest or search by keyword for individual articles at http://www.microbicide.org/cs/weekly_news_digest you would like to be removed from the Digest distribution list, please send an email to lfdigest@microbicide.org welcome comments, questions, and ideas about other microbicide-relevant topics we might cover, services we might provide, and better ways of providing them!. We

Areas covered in this News Digest:

1. ALLIANCE UPDATES AND COMMUNITY NEWS

- [IRMA seeks new Steering Committee members](#)

2. MEDIA COVERAGE OF MICROBICIDES

- [AIDS elephant in the room](#)
- [Safer sex in a pill](#)
- [Breakthrough in HIV research](#)

3. PUBLISHED RESEARCH: RELEVANT BASIC AND TRANSLATIONAL SCIENCE

- Lower levels of HIV-2 than HIV-1 in the female genital tract: correlates and longitudinal assessment of viral shedding

4. PUBLISHED RESEARCH: RELEVANT BEHAVIORAL AND SOCIAL SCIENCE AND EPIDEMIOLOGY

- Estimating the lost benefits of antiretroviral drug use in South Africa
- Correlates of heterosexual anal intercourse among at-risk adolescents and young adults

5. EPIDEMIOLOGY

- Non-nucleoside resistance is efficiently transmitted within infection 'clusters'
- South Africa: HPV 'an epidemic' among HIV-positive women
- South African resistance survey confirms that clade C is more likely to develop multi-drug resistance mutation

6. HIV/AIDS VACCINES

- Building up to an HIV vaccines
- Canada: AIDS vaccine poised for human tests
- Efficacy assessment of a cell-mediated immunity HIV-1 vaccine (the Step Study): a double-blind, randomised, placebo-controlled, test-of-concept trial
- HIV-1 vaccine-induced immunity in the test-of-concept Step Study: a case-cohort analysis
- Activation of a dendritic cell-T cell axis by Ad5 immune complexes creates an improved environment for replication of HIV in T cells

7. OTHER PREVENTION APPROACHES

- Comparative crossover study of the PATH Woman's Condom and the FC Female Condom®
- A big shift for China's AIDS fight: Condoms for those who need them
- Uganda: New hope for HIV-discordant couples
- 10 years later female condom finally finds footing

8. NON-HIV STIS AND REPRODUCTIVE HEALTH

- In Phase III, Gardasil prevents HPV in men

9. POLITICS AND POLICY

- Adolescents are under-represented in clinical research
- Poland set to remove tax block for clinical trials
- Fighting AIDS at home
- Swaziland: Promise to heal the health service
- Bush looks back on past relief efforts in Africa

10. HIV/AIDS FUNDING

- Statehealthfacts.org Provides New Data on HIV/AIDS Funding

11. PHARMACEUTICAL INDUSTRY

- Philips iPill targets treatment for digestive tract diseases

1. ALLIANCE UPDATES AND COMMUNITY NEWS

IRMA seeks new Steering Committee members

<http://rectalmicrobicides.org>

The International Rectal Microbicide Advocates (IRMA) is a global network of scientists, advocates, and policy makers promoting the research and development of safe, effective, and acceptable rectal microbicides for both women and men. The IRMA Nominations Committee invites you to consider applying for a position on its new global Steering Committee. We have up to 10 seats available, and are seeking dedicated individuals from around the world. Please apply today or nominate someone, and forward this Call through your networks.

DEADLINE TO APPLY: December 8, 2008

Getting involved in IRMA can present you with an exciting opportunity to join in ground-breaking efforts to increase HIV prevention options. In order to guide IRMA's future actions and development, we are now looking to renew the mandate of half our current Steering Committee, and we wish to invite new members to join. Up to 10 seats are available to YOU!

Please consider applying TODAY!

SC positions are purely voluntary. Because SC participation requires communication by internet and telephone, so members of the SC should have e-mail access, telephone access, and availability to attend SC meetings and to volunteer time for SC responsibilities. The SC meets 3-4 times per year via free conference calls. SC members will be strongly encouraged to participate in working groups and/or provide input on special projects.

Please refer to the http://www.rectalmicrobicides.org/docs/adv_irmwg_tor.pdf IRMA Steering Committee Terms of Reference for more information.

APPLICATION PROCESS

Please submit your application (maximum 300 words) by providing a description of:

- Why you or the person you are nominating are interested in serving on the IRMA SC
- What contributions you think you or the person you are nominating can bring to IRMA and the SC
- How you or the person you are nominating meet some of the attributes and qualities mentioned in the attached document.

Please note that we do not expect any individual to meet all these criteria. Rather, we are seeking to have a SC membership that has all these attributes as a group. Please indicate which qualities and attributes relate to you, so the Nominations Committee can make the best recommendation for a SC with a good balance of attributes and qualities.

Include what skills would be brought to the SC, any organisational affiliations, and the world region(s) of experience. (We won't be asking for additional information so we appreciate having a statement that has enough information to evaluate a person's candidacy).

PLEASE SEND your application to Marc-André LeBlanc, IRMA Secretary, at maleblanc27@yahoo.ca by NO LATER THAN DECEMBER 8, 2008. If you have any questions, please do not hesitate to contact either Jim Pickett (IRMA Chair) at jpickett@aidschicago.org or Marc-André LeBlanc (IRMA Secretary) at maleblanc27@yahoo.ca.

[Return to Table of Contents](#)

2. MEDIA COVERAGE OF MICROBICIDES

"AIDS elephant in the room"

Date: 20 November 2008

Source: *The McGill Daily*

Author(s): Shannon Kiely

<http://www.mcgilldaily.com/article/6004-aids-elephant-in-the-room>

A chicken-wire elephant frame – standing a metre-and-a-half tall – will be papier-mâché, covered in 1,200 condoms, and moved across campus as part of a McGill's Global AIDS Week campaign, running all next week.

"AIDS is the elephant in the room. No one wants to talk about it," explained McGill Global AIDS Week coordinator Dasami Moodley, U3 Political Science. "It's [a sexually transmitted infection (STI)], and you can get it from having sex. World AIDS Week at McGill is about starting conversation."

Moodley hopes the events planned by the McGill AIDS Coalition (MCAC) will break down clichés and taboos attached to AIDS. She pointed to next Wednesday's coffee house discussion with Philip Osano, a PhD candidate in geography, on HIV among eastern Africa's Lake Victoria fishing communities.

"We want to make the student population more aware of special issues they wouldn't otherwise be able to know about. Something students would[n't] see on the news," Moodley said.

Other events include a workshop Tuesday on being an ally to HIV-positive people and a documentary screening Monday of *A Closer Walk*, which tells the story of the human side of AIDS from Cambodia to Switzerland to South Africa.

"We want to bring a face to HIV that isn't black, necessarily," Moodley said.

Dr. Kenneth Mayer will give a keynote address next Friday that looks back on 30 years of progress and challenges of the global AIDS epidemic. Mayer is on the frontlines of research into **microbicides**, a gel applied to the vagina or rectum that doctors hope could protect against HIV. No effective **microbicide** has

been developed as of yet.

Nikki Bozinoff, a former Daily editor who sat on the MCAC Global AIDS Week committee, explained that **microbicides** could empower women in the face of the AIDS epidemic.

“Women don’t have a choice whether their partners wear a condom. [If micobicides are developed], women can make a choice without their partner’s knowledge or consent,” said Bozinoff.

The theme of the 20th annual Global AIDS week is Take the Lead, a message Moodley considers particularly relevant to the McGill student body.

“As students, it’s very important we step up as youth activists,” she said.

Students gathered in the Shatner Building’s fourth-floor club space yesterday to train tabling staff. At the tables, students can buy AIDS ribbons or sign a petition urging the Canadian government to increase national donations to the Global AIDS fund and basic foreign aid.

Bearing in mind local populations, MCAC will distribute business cards at tables that encourage students to get tested for HIV. MCAC collaborated with Head & Hands, a community health centre in Notre-Dame-de-Grâce, to offer students two days of free, anonymous AIDS testing.

In the four years Moodley has worked with MCAC, she has noticed that students are reluctant to get tested for HIV.

“You’ll get a Pap smear but people don’t get tested for HIV because they think it has nothing to do with them. [But] we want to get it into people’s faces.”

"Safer sex in a pill"

Date: 19 November 2008

Source: *New Scientist*

Author(s): Clare Wilson

<http://www.newscientist.com/article/mg20026831.700-safer-sex-in-a-pill.html>

As a gay man living in the US, John has seen every kind of AIDS awareness campaign out there. He is intelligent and well informed, yet sometimes he has unsafe sex. He never plans to, but he does not always have a condom handy and occasionally, on the spur of the moment, decides not to use one.

Such behaviour is not that unusual among gay men, but unlike most, John (not his real name) isn't leaving himself totally exposed. That is because his doctor is willing to do something most would not countenance - prescribe John a medicine that could lower his risk of catching HIV.

This strategy is called pre-exposure prophylaxis, or PrEP, and John gets it from Marcus Conant, a doctor with a long history of standing up for gay rights. PrEP has yet to be proven in clinical trials, and Conant will

only prescribe it for a select group of his patients - those who understand the limitations of this tactic. But if the most optimistic predictions are borne out, by taking a pill once a day John is radically reducing his risk of infection even if he has condom-free sex with as many people as he likes. It is more likely that the medicine has a modest effect - perhaps reducing the risk by around two-thirds - but even so, it significantly improves John's odds in the dicey game he plays.

For now PrEP is only available to a select few, but that looks set to change very soon. PrEP is being tested in several large trials, with the first results due next year. If it works, PrEP could save millions of lives from the epidemic that is still raging around the world, infecting an estimated 7000 people every day.

While it sounds like good news, PrEP is not without its critics. The main fear is that it will lull people into a false sense of security, encouraging them to have more unsafe sex and so, paradoxically, spreading the virus further and faster. There is also a looming firestorm over a drug that apparently gives people licence to have unprotected sex or inject themselves with illegal drugs.

Yet with vaccine research in the doldrums, PrEP is seen by a number of leading specialists as a vital weapon in the fight against HIV. "There's a lot of buzz about PrEP," says Anthony Fauci, head of the National Institute of Allergy and Infectious Diseases at the US National Institutes of Health in Bethesda, Maryland. "There's some cautious optimism that this will work."

The fact that a strategy like PrEP is being considered at all is a sad reflection on the painfully slow progress towards a vaccine against HIV. In the 25 years since the virus was first identified, only two vaccine candidates have made it to the final stage of human trials. Both failed. The most recent one, which also seemed the most promising, flopped just last year (see "The trouble with vaccines").

Since then, scientists have admitted that we still do not know enough about the virus, and that more basic research is needed before anyone begins further human trials (Science, vol 321, p 530). "It has been a sobering experience," says Fauci.

As the problems on the vaccine front have emerged, interest has grown in other strategies. First came the idea of **microbicides** - antiviral drugs used in the vagina or rectum, usually in the form of a gel applied before sex (New Scientist, 8 February 2003, p 42). This field has also had its share of disappointments, however. First a chemical called nonoxynol-9 was found to irritate the vaginal lining and actually increase the risk of infection. Two other promising compounds have also fallen by the wayside in the past two years, for reasons that are unclear.

A couple of other **microbicides** are still undergoing clinical trials, and there are more in the pipeline, but these are still some years away from readiness. "The fact that it's taking so long is disappointing," says Alan Stone, a former chairman of the International Working Group on **Microbicides**.

The beauty of PrEP is that it involves drugs already used as a treatment for HIV, known as highly active antiretroviral therapy, or HAART. These drugs have shelf-loads of safety data to back them up and could be ready to use as PrEP long before any vaccine or **microbicide** goes on sale.

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EDITOR'S NOTE: The full text of this article is available for public access at the above website.

"Breakthrough in HIV research"

Source: *Canadian Press/Canada.com News*

Author(s): Claire Sowerbutt

http://bodyandhealth.canada.com/channel_section_details.asp?text_id=2131&channel_id=1020&relation_id=10876

Our old friend cholesterol is making medical news again - but this time it has nothing to do with clogged arteries, too much butter, or whether or not eggs are good for you - probably. Researchers at Johns Hopkins University have discovered that cholesterol is crucial for human immunodeficiency virus (HIV) entering and exiting cells.

And of what use is this information in everyday life? Dr. James Hildreth, a member of the research team at Johns Hopkins who made the discovery, explained that cholesterol plays a key role in the biology of the virus. "The most important implication of this discovery is that we can affect the virus' ability to infect," he said.

Like some other viruses, HIV works by stealing proteins from the cell membrane. This allows the virus to bind to many other types of cells, increasing its ability to infect. As it turns out, there is a naturally occurring molecule called cyclodextrin that will remove cholesterol from the virus - it also removes cholesterol from cells. When you expose HIV to this molecule, HIV loses cholesterol and loses its ability to infect.

Scientists are now developing vaginal and rectal creams that contain cholesterol depleting compounds that will, if used before sex, prevent the sexual transmission of HIV. "As there is no vaccine on the immediate horizon, **microbicides** that can remove cholesterol from cell membranes, rendering HIV noninfectious, may play an important part in controlling the AIDS pandemic," said Dr. Hildreth.

Currently, 39.4 million people are estimated to be living with HIV/AIDS worldwide: 2.2 million of those are children under the age of 15. Since 1981, HIV/AIDS has claimed over 20 million lives.

While the discovery of cholesterol's role in HIV infection, and the subsequent development of chemical condoms - **microbicides** creams - is extremely good news, it could be argued that the availability of traditional condoms has not managed to stem the increase of HIV infection because people do not always use them. In fact the rate of HIV infection continues to increase, with the most profound rise being among women, so what good will a cream do? Creams or cervical rings containing **microbicides** would not only chemically prevent infection during intercourse, they could be applied before intercourse, rather than during intercourse, which is when the use of a latex condom is typically initiated.

More people, particularly women who may be reluctant to bring out condoms during intercourse, or who may not have any say in how sex is practiced, may be inclined to use a cream they could apply possibly hours or days in advance.

"One of our primary motivations is to empower women, who have no say over how sex is practiced, to protect themselves," Dr. Hildreth said. "The real challenge for the people who are developing the **microbicides** is to develop something that is not only safe, but would also be imperceptible. In other words, neither partner would necessarily know that it's there. That would be the ideal chemical condom. We also want to develop something that has a long cycle of protection."

So far experiments in mouse models with human immune systems show that cyclodextrin in saline solution applied to the vagina before the HIV is injected into the vagina, provides more than 90% protection.

"It has great promise," said Dr. Hildreth. "We are very encouraged that with the right formulation and studies, we can create a safe and effective **microbicide**." A **microbicide** cream may be available within the next 3 years.

Of course, the question that springs immediately to mind is - regardless of high blood pressure - should we reduce our cholesterol intake?

"We don't yet know whether or not high cholesterol levels in blood translate to high cholesterol levels in cell membrane and therefore higher sensitivity to HIV," said Dr. Hildreth. Cholesterol, in fact, enables cell membranes to transmit signals, so it is essential to a healthy, functioning body. "If people are already practicing safe sex, I don't think they should be worried about their cholesterol levels. People should be much more concerned about not practicing safe sex," Dr. Hildreth said.

So - bring on the eggs Benedict and the condoms.

[Return to Table of Contents](#)

3. PUBLISHED RESEARCH: RELEVANT BASIC AND TRANSLATIONAL SCIENCE

"Lower levels of HIV-2 than HIV-1 in the female genital tract: correlates and longitudinal assessment of viral shedding"

Author(s): Hawes SE, Sow PS, Stern JE, et al

Reference: Lancet. 30 November 2008;22(18):2517-25.

<http://www.aidsonline.com/pt/re/aids/abstract.00002030-200811300-00012.htm;jsessionid=JhyRnCzks3HBWdrp3CtwXvLqgZwZrPyqN3bH5hy21szKHCJf5xy2!-460735550!181195629!8091!-1>

Published Abstract: Background: The differing magnitude of the HIV-1 and HIV-2 epidemics is likely a consequence of differing transmission rates between the two viruses. Similar to other sexually transmitted pathogens, risk of HIV-1 and HIV-2 transmission is likely associated with the presence and amount of HIV

in the genital tract. Thus, understanding patterns of, and risk factors for HIV genital tract shedding is critical to effective control of HIV transmission. Methods: We evaluated HIV DNA and RNA detection in cervicovaginal specimens among 168 HIV-1 and 50 HIV-2-infected women in Senegal, West Africa. In a subset of 31 women (20 with HIV-1, 11 with HIV-2), we conducted a prospective study in which cervicovaginal specimens were taken at 3-day intervals over a 6-week period. Results: We found significantly lower rates and levels of HIV-2 RNA (58% shedding; 13% with >1000 copies/ml) in the female genital tract than HIV-1 RNA (78% shedding; 40% with >1000 copies/ml) ($P = 0.005$ and 0.005 , respectively), and shedding correlated with plasma viral load irrespective of virus type (odds ratio = 1.9, 95% confidence interval = 1.3-2.8 for each log₁₀ increase in HIV viral RNA). Plasma viral load, not HIV type, was the strongest predictor of genital viral load. Over 80% of closely monitored women, regardless of HIV type, had at least intermittent HIV RNA detection during every 3-day sampling over a 6-week time period. Conclusion: These data help in explaining the different transmission rates between HIV-1 and HIV-2 and may provide new insights regarding prevention.

[Return to Table of Contents](#)

4. PUBLISHED RESEARCH: RELEVANT BEHAVIORAL AND SOCIAL SCIENCE AND EPIDEMIOLOGY

"Estimating the lost benefits of antiretroviral drug use in South Africa"

Author(s): Chigwedere P, Seage GR, Gruskin S, et al

Reference: J Acquir Immune Defic Syndr. 01 December 2008;49(4):410-15.

<http://www.jaids.org/pt/re/jaids/abstract.00126334-200812010-00010.htm;jsessionid=JhjJXDZJJwTJ0gD5dMkSC0hpfk5hqJw6yygJVhrQGLHHt1VGvGbzl-460735550!181195629!8091!-1>

Published Abstract: South Africa is one of the countries most severely affected by HIV/AIDS. At the peak of the epidemic, the government, going against consensus scientific opinion, argued that HIV was not the cause of AIDS and that antiretroviral (ARV) drugs were not useful for patients and declined to accept freely donated nevirapine and grants from the Global Fund. Using modeling, we compared the number of persons who received ARVs for treatment and prevention of mother-to-child HIV transmission between 2000 and 2005 with an alternative of what was reasonably feasible in the country during that period. More than 330,000 lives or approximately 2.2 million person-years were lost because a feasible and timely ARV treatment program was not implemented in South Africa. Thirty-five thousand babies were born with HIV, resulting in 1.6 million person-years lost by not implementing a mother-to-child transmission prophylaxis program using nevirapine. The total lost benefits of ARVs are at least 3.8 million person-years for the period 2000-2005.

"Correlates of heterosexual anal intercourse among at-risk adolescents and young adults"

Author(s): Lescano CM, Houck CD, Brown LK, et al

Reference: Am J Public Health. 13 November 2008;Epub ahead of print.

<http://www.ajph.org/cgi/content/abstract/AJPH.2007.123752v1>

Published Abstract: Objectives. We sought to learn what factors are associated with anal intercourse among adolescents and young adults. We examined demographic, behavioral, relationship context, attitudinal, substance use, and mental health correlates of recent heterosexual anal intercourse among adolescents and young adults who reported engaging in recent unprotected sex. Methods. Among 1348 at-risk adolescents and young adults aged 15 to 21 years in 3 US cities, we assessed sexual risk behavior with each sexual partner in the past 90 days. Data were collected from 2000 to 2001. Results. Recent heterosexual anal intercourse was reported by 16% of respondents. Females who engaged in anal intercourse were more likely to be living with a sexual partner, to have had 2 or more partners, and to have experienced coerced intercourse. For males, only a sexual orientation other than heterosexual was a significant predictor of engaging in heterosexual anal intercourse. Conclusions. Our findings document the prevalence of heterosexual anal intercourse among adolescents and young adults who had recent unprotected sex. Among females, the variables associated with anal intercourse relate to the context and power balance of sexual relationships. Different influences for males and females suggest different foci for interventions.

[Return to Table of Contents](#)

5. EPIDEMIOLOGY

"Non-nucleoside resistance is efficiently transmitted within infection 'clusters'"

Date: 13 November 2008

Source: *AIDSmag.com News*

Author(s): Gus Cairns

<http://www.aidsmap.com/en/news/DA5D9E1E-4F9C-4825-833F-3CB9C7D40CFB.asp>

HIV that is resistant to the non-nucleoside drugs (NNRTIs) efavirenz and nevirapine is efficiently transmitted between members of sexual networks, a study from Canada has found. The proportion of NNRTI-resistant HIV could even be amplified by rapid, 'chain reaction' transmission between members of large networks, the study finds.

In contrast, other types of HIV drug resistance are more likely to appear within isolated cases of infection and seem to be 'filtered out' by such chain transmission.

An important study last year of HIV transmission in Quebec, Canada, in which people (largely gay men) recently infected with HIV had their virus subjected to extremely precise analysis of its entire polymerase

gene, found that half of HIV infections in the province occurred in smaller or larger clusters of anything between two and 17 people, where a 'cluster' was defined as the occurrence of HIV viruses that were genetically identical or near-identical in different people.

Estimating the dates of transmission and the rate of change in the HIV polymerase gene showed that about half of all infections were transmitted by people in primary HIV infection, in the first six weeks or so when people's viral loads are high.

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EDITOR'S NOTE: The full text of this article is available for public access at the above website.

"South Africa: HPV 'an epidemic' among HIV-positive women"

Date: 12 November 2008

Source: *Independent Online*

Author(s): Natasha Joseph

<http://www.thebody.com/content/art49459.html>

The Treatment Action Campaign said on Tuesday it is lobbying pharmaceutical firms to shave the price of human papillomavirus vaccines so that developing countries can afford the inoculation. Certain strains of HPV cause most cases of cervical cancer, and HIV-positive women have 10 times the risk of infection with oncogenic HPV, TAC said. The AIDS group believes a mass vaccination drive in South Africa could avert many future deaths.

"Both [vaccine manufacturers] are willing to reduce prices for the South African Department of Health," said Nomfundo Eland, a TAC spokesperson. "At the current price, in order to provide [the HPV vaccine] Gardasil to these girls, the public sector would need more than 3.6 billion rand (US \$359 million) for the initial vaccination effort and 1.2 billion rand (US \$120 million) annually thereafter."

The private-sector cost of HPV vaccines is more than 2,100 rand (US \$209) for the three-shot series. Without some price cut, the cost of the vaccines "makes them inaccessible to the majority of poor world citizens, who account for by far the greatest rates of cervical cancer mortality," said Nosisa Mhlathi, a TAC researcher.

The Cancer Association of South Africa has identified cervical cancer as "the leading cancer faced by South African women."

"South African resistance survey confirms that clade C is more likely to develop multi-drug resistance mutation"

Date: 12 November 2008

Source: *AIDSmap.com News*

Author(s): Gus Cairns

<http://www.aidsmap.com/en/news/2E39FB01-5534-444D-B693-72BDDD17BABC.asp>

A survey of resistance among recipients of HIV therapy in South Africa has found that HIV clade C – the predominant subtype in southern Africa – is much more likely to develop the dangerous K65R resistance mutation, which confers resistance to most of the nucleoside (NRTI) drugs except AZT. Furthermore, whereas K65R is normally seen in patients failing tenofovir, abacavir or ddI, among clade C patients it was common in patients failing therapies including d4T (stavudine).

The South Africa study confirms an association between clade C virus and K65R originally suspected from a study in Botswana.

Meanwhile a UK study of resistance among patients with subtype C has found that although they had less resistance in general than patients with subtype B (the predominant one in gay men) they had higher levels of resistance to the non-nucleoside (NNRTI) drugs, efavirenz and nevirapine. This is probably due to suboptimal regimens and the use of nevirapine for prevention of mother-to-baby transmission in Africa.

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EDITOR'S NOTE: *The full text of this article is available for public access at the above website.*

[Return to Table of Contents](#)

6. HIV/AIDS VACCINES

"Building up to an HIV vaccines"

Date: 19 November 2008

Source: *Nature*. 19 November 2008;456:418. *Networks and Support*.

Author(s): Virginia Gewin

<http://www.nature.com/naturejobs/2008/081120/full/nj7220-418b.html>

Vaccine development is a notoriously challenging career path, given the propensity for negative results. For every 100 potential immunogens made, very few will work. Young scientists often choose research areas more likely to offer career advancement. Hoping in part to address these shortcomings, the International AIDS Vaccine Initiative (IAVI), a global non-profit organization, is investing \$30 million to create a new HIV Neutralizing Antibody Center at the Scripps Research Institute in La Jolla, California.

"One of the major challenges in the HIV world is bringing young investigators into the field and maintaining their career path," says Wayne Koff, IAVI's senior vice-president of research and development. "We want to train the next generation of HIV vaccine discovery scientists." The organization is seeking young scientists willing to commit to a multi-year programme. It intends to combine expertise — at the graduate student,

postdoc and scientist level — in immunology, molecular biology, protein chemistry, molecular virology, computational biology and drug discovery.

"The recent failure of the Merck HIV vaccine highlighted the need to think about antibodies as well the T-cell component in HIV vaccine development," says Scripps immunologist Dennis Burton, who is scientific director of the HIV Neutralizing Antibody Consortium (NAC), a collaboration between the IAVI and leading AIDS laboratories in the United States and Europe.

The centre plans to promote a multidisciplinary approach and dedicate time to mentoring. Graduate students will be afforded the chance to develop soft skills, such as grant-writing and giving presentations at international meetings, at a much earlier stage than is usual in academic settings. Young scientists will have instant connections to the top HIV labs around the world through the NAC.

Initially the centre will have 30 people, says Koff, including some senior international scientists within the consortium. The IAVI hopes to have the centre under way by the beginning of 2009. "This is the highest vaccine-discovery priority at the IAVI," says Koff. He says Scripps would like to identify an immunogen consisting of broadly neutralizing antibodies against HIV and be on its way to clinical development of that immunogen within five years.

"Canada: AIDS vaccine poised for human tests"

Date: 13 November 2008

Source: *Edmonton Journal (Alberta)*

Author(s): Becky Rynor, Jordana Huber

<http://www.thebody.com/content/art49458.html>

Animal toxicology trials of an experimental Canadian AIDS vaccine could begin within days, the University of Western Ontario-London announced Wednesday. The vaccine candidate was developed by UWO virologist Dr. Chil-Yong Kang. The animal testing will take place at a US research facility and may yield results in three months, Kang said. Phase I human trials could begin in early spring.

The vaccine uses whole, deactivated HIV-1, an approach similar to the polio vaccine developed by Jonas Salk, Kang said. "We have engineered a virus in such a way that it can be produced in larger quantities in shorter periods of time and it is also non-pathogenic," he said. "In other words, it doesn't cause the disease. We have tested animals and they do respond to the vaccine, and we now have to try it in humans."

The product will be tested in HIV patients who have not progressed to AIDS, said Kang.

The university also announced it is one of four Canadian organizations bidding for a grant to construct an HIV vaccine manufacturing facility. The plant would be scaled for small pilot clinical studies, rather than for widespread manufacture. The Canadian government and the Bill & Melinda Gates Foundation are offering \$88 million (US \$72 million) for the project. Federal officials declined to name the other three contenders.

"Efficacy assessment of a cell-mediated immunity HIV-1 vaccine (the Step Study): a double-blind, randomised, placebo-controlled, test-of-concept trial"

Author(s): Buchbinder SP, Mehrotra DV, Duerr A, et al

Reference: Lancet. 13 November 2008;Epub ahead of print.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61591-3/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61591-3/abstract)

Published Abstract: *Background* Observational data and non-human primate challenge studies suggest that cell-mediated immune responses might provide control of HIV replication. The Step Study directly assessed the efficacy of a cell-mediated immunity vaccine to protect against HIV-1 infection or change in early plasma HIV-1 levels. *Methods* We undertook a double-blind, phase II, test-of-concept study at 34 sites in North America, the Caribbean, South America, and Australia. We randomly assigned 3000 HIV-1-seronegative participants by computer-generated assignments to receive three injections of MRKAd5 HIV-1 gag/pol/nef vaccine (n=1494) or placebo (n=1506). Randomisation was prestratified by sex, adenovirus type 5 (Ad5) antibody titre at baseline, and study site. Primary objective was a reduction in HIV-1 acquisition rates (tested every 6 months) or a decrease in HIV-1 viral-load setpoint (early plasma HIV-1 RNA measured 3 months after HIV-1 diagnosis). Analyses were per protocol and modified intention to treat. The study was stopped early because it unexpectedly met the prespecified futility boundaries at the first interim analysis. This study is registered with ClinicalTrials.gov, number NCT00095576. *Findings* In a prespecified interim analysis in participants with baseline Ad5 antibody titre 200 or less, 24 (3%) of 741 vaccine recipients became HIV-1 infected versus 21 (3%) of 762 placebo recipients (hazard ratio [HR] 1.2 [95% CI 0.6—2.2]). All but one infection occurred in men. The corresponding geometric mean plasma HIV-1 RNA was comparable in infected male vaccine and placebo recipients (4.61 vs 4.41 log₁₀ copies per mL, one tailed p value for potential benefit 0.66). The vaccine elicited interferon- γ ELISPOT responses in 75% (267) of the 25% random sample of all vaccine recipients (including both low and high Ad5 antibody titres) on whose specimens this testing was done (n=354). In exploratory analyses of all study volunteers, irrespective of baseline Ad5 antibody titre, the HR of HIV-1 infection between vaccine and placebo recipients was higher in Ad5 seropositive men (HR 2.3 [95% CI 1.2—4.3]) and uncircumcised men (3.8 [1.5—9.3]), but was not increased in Ad5 seronegative (1.0 [0.5—1.9]) or circumcised (1.0 [0.6—1.7]) men. *Interpretation* This cell-mediated immunity vaccine did not prevent HIV-1 infection or reduce early viral level. Mechanisms for insufficient efficacy of the vaccine and the increased HIV-1 infection rates in subgroups of vaccine recipients are being explored. *Funding* Merck Research Laboratories; the Division of AIDS, National Institute of Allergy and Infectious Diseases, in the US National Institutes of Health (NIH); and the NIH-sponsored HIV Vaccine Trials Network (HVTN).

EDITOR'S NOTE: *The full text of this article is available with a free subscription at the above website.*

"HIV-1 vaccine-induced immunity in the test-of-concept Step Study: a case-cohort analysis"

Author(s): McElrath MJ, De Rosa SC, Moodie Z, et al

Reference: Lancet. 13 November 2008;Epub ahead of print.

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61592-5/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61592-5/abstract)

Published Abstract: *Background* In the Step Study, the MRKAd5 HIV-1 gag/pol/nef vaccine did not reduce plasma viraemia after infection, and HIV-1 incidence was higher in vaccine-treated than in placebo-treated men with pre-existing adenovirus serotype 5 (Ad5) immunity. We assessed vaccine-induced immunity and its potential contributions to infection risk. *Methods* To assess immunogenicity, we characterised HIV-specific T cells ex vivo with validated interferon- ELISPOT and intracellular cytokine staining assays, using a case—cohort design. To establish effects of vaccine and pre-existing Ad5 immunity on infection risk, we undertook flow cytometric studies to measure Ad5-specific T cells and circulating activated (Ki-67+/BcL-2lo) CD4+ T cells expressing CCR5. *Findings* We detected interferon--secreting HIV-specific T cells (range 163/106 to 686/106 peripheral blood mononuclear cells) ex vivo by ELISPOT in 77% (258/354) of people receiving vaccine; 218 of 354 (62%) recognised two to three HIV proteins. We identified HIV-specific CD4+ T cells by intracellular cytokine staining in 58 of 142 (41%) people. In those with reactive CD4+ T cells, the median percentage of CD4+ T cells expressing interleukin 2 was 88%, and the median co-expression of interferon or tumor necrosis factor (TNF), or both, was 72%. We noted HIV-specific CD8+ T cells (range 0.4—1.0%) in 117 of 160 (73%) participants, expressing predominantly either interferon alone or with TNF. Vaccine-induced HIV-specific immunity, including response rate, magnitude, and cytokine profile, did not differ between vaccinated male cases (before infection) and non-cases. Ad5-specific T cells were lower in cases than in non-cases in several subgroup analyses. The percentage of circulating Ki-67+BcL-2lo/CCR5+CD4+ T cells did not differ between cases and non-cases. *Interpretation* Consistent with previous trials, the MRKAd5 HIV-1 gag/pol/nef vaccine was highly immunogenic for inducing HIV-specific CD8+ T cells. Our findings suggest that future candidate vaccines have to elicit responses that either exceed in magnitude or differ in breadth or function from those recorded in this trial. *Funding* National Institute of Allergy and Infectious Diseases, US National Institutes of Health; and Merck Research Laboratories.

EDITOR'S NOTE: *The full text of this article is available with a free subscription at the above website.*

"Activation of a dendritic cell-T cell axis by Ad5 immune complexes creates an improved environment for replication of HIV in T cells"

Author(s): Perreau M, Pantaleo G, Kremer EJ

Reference: J Exp Med. 03 November 2008;Epub ahead of print.

<http://www.ncbi.nlm.nih.gov/sites/entrez/18981239?dopt=Abstract&holding=f1000,f1000m,isrctn>

Published Abstract: The STEP HIV vaccine trial, which evaluated a replication-defective adenovirus type 5 (Ad5) vector vaccine, was recently stopped. The reasons for this included lack of efficacy of the vaccine

and a twofold increase in the incidence of HIV acquisition among vaccinated recipients with increased Ad5-neutralizing antibody titers compared with placebo recipients. To model the events that might be occurring in vivo, the effect on dendritic cells (DCs) of Ad5 vector alone or treated with neutralizing antiserum (Ad5 immune complexes [IC]) was compared. Ad5 IC induced more notable DC maturation, as indicated by increased CD86 expression, decreased endocytosis, and production of tumor necrosis factor and type I interferons. We found that DC stimulation by Ad5 IC was mediated by the Fcγ receptor IIa and Toll-like receptor 9 interactions. DCs treated with Ad5 IC also induced significantly higher stimulation of Ad5-specific CD8 T cells equipped with cytolytic machinery. In contrast to Ad5 vectors alone, Ad5 IC caused significantly enhanced HIV infection in DC-T cell cocultures. The present results indicate that Ad5 IC activates a DC-T cell axis that, together with the possible persistence of the Ad5 vaccine in seropositive individuals, may set up a permissive environment for HIV-1 infection, which could account for the increased acquisition of HIV-1 infection among Ad5 seropositive vaccine recipients.

[Return to Table of Contents](#)

7. OTHER PREVENTION APPROACHES

"Comparative crossover study of the PATH Woman's Condom and the FC Female Condom®"

Author(s): Schwartz JL, Barnhart K, Creinin MD, et al

Reference: Contraception. 01 December 2008;78(6):465-73.

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T5P-4TG8KG0-6&_user=10&_coverDate=12%2F31%2F2008&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C00050221&_version=1&_urlVersion=0&_userid=10&md5=823525038f9020689eb9c13f59624f15

Published Abstract: *Background* Only one female condom [FC1 Female Condom (FC1)] is currently marketed, but it is poorly utilized, perhaps due to difficulty with insertion, discomfort and suboptimal functional performance during intercourse. The Program for Appropriate Technology in Health (PATH) Woman's Condom (WC) was developed in an effort to overcome these obstacles. *Study Design* This was a randomized crossover study to evaluate the functional performance, safety and acceptability of the FC1 and WC. Seventy-five couples were assigned to one of two condom use sequences (WC/FC1 or FC1/WC) at three centers. Four condoms of the first type were used by couples in four acts of intercourse at home over a 2–4-week period. After a follow-up visit, these procedures were repeated with the second assigned condom type. In a substudy of participants (n=25), a colposcopy was performed prior and subsequent to the first condom use of each of the two condom types. Condom performance was evaluated by calculating measures of function from questionnaires completed by the couple after each condom use. Safety was evaluated by reported urogenital symptoms with a given condom during or immediately following condom use and colposcopic signs of genital irritation in the substudy. Acceptability of each given condom type was measured by questionnaire. *Results* Total condom failure (slippage, breakage, etc., divided by the number of female condoms opened) was 31% for the WC and 42% for the FC1. Total clinical failure (slippage, breakage, etc., divided by the number of female condoms used) was 17% for the WC and 24% for the FC1.

The proportion of condom failures was 10.9 percentage points less, and the proportion of clinical failure 6.7 percentage points less, when couples used the WC compared to the FC1 [90% CI: 18.5 to 3.3 and 12.6 to 0.8, respectively). Fewer women reported symptoms of urogenital irritation when using the WC vs. the FC1 either overall or when analyzing each use of the condom [woman as unit: 20 percentage points (90% CI: 30.5 to 9.3); condom use as unit: 12.3 percentage points (90% CI: 18.0 to 6.7)]. A similar result was seen for signs of urogenital irritation [woman as unit: 20 percentage points (90% CI: 42.7 to 4.8)]. Among participants with a preference, WC was preferred over the FC1 by twice as many males and by 2.6 times as many females. *Conclusions* While both female condoms were safe and acceptable in short-term use, the PATH Woman's Condom leads to less failure, was associated with fewer adverse events, and was more acceptable than the FC1 Female Condom.

"A big shift for China's AIDS fight: Condoms for those who need them"

Date: 18 November 2008

Source: *The Wall Street Journal*

Author(s): Nicholas Zamiska, Geoffrey A Fowler

<http://sec.online.wsj.com/article/SB122696770776235451.html>

AIDS, which has long thrived quietly on the fringes of Chinese society among drug addicts and recipients of tainted blood donations, is on the verge of going mainstream here.

One major cause is prostitution, a booming industry in China that has helped make sex the most common form of AIDS transmission in China.

China's hopes of stopping the disease from turning into the country's next health crisis may rest with the efforts of people like Guan Baoying, a 56-year-old activist who has defied standard government attitudes about high-risk groups such as prostitutes.

As a Beijing health bureaucrat until last year, Ms. Guan managed to convince the government to support regulations that require hotels to supply condoms to their guests -- with the result that even in five-star hotels, condoms are a standard part of the minibar. Today, she leads the charge as the head of a nongovernment organization that helps fund outreach work with backing from the Bill & Melinda Gates Foundation.

China has a condom problem. A recent survey of six major Chinese cities by the Joint United Nations Program on HIV/AIDS, known as UNAIDS, found that just 54% of Chinese would use a condom if they had sex with a new partner.

UNAIDS estimates that about 700,000 people in China carry the HIV virus, though accurate figures are difficult to come by. "The epidemic is starting to generalize," says Li Dongliang, a district director of the AIDS program of the Center for Disease Control and Prevention in Beijing.

To fight the tide, Ms. Guan embraces an approach already proven to work in other countries: give condoms to the very people at high risk of spreading the disease. Tens of thousands of massage parlors and karaoke bars double as brothels, where businessmen and migrant workers can contract the disease and carry it to their hometowns and families.

"These sex workers are disadvantaged people in society," says Ms. Guan. "No one cares about them."

Ms. Guan has become a regular at brothels such as one near Beijing's Wangfujing shopping district. She is friendly with Sun Jie, a 37-year-old procurer who employs the other male prostitutes here. Above the bed in his tiny, cigarette-strewn hotel room hangs a framed photo of him and the matronly AIDS worker.

"We have learned a lot from Ms. Guan," he says. He holds up a box of Partner brand condoms and a yellow bottle of lubricant, which helps prevent breaks in the skin that allow infection.

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EDITOR'S NOTE: The full text of this article is available for public access at the above website.

"Uganda: New hope for HIV-discordant couples"

Date: 14 November 2008

Source: *PlusNews*

<http://www.irinnews.org/report.aspx?ReportID=81472>

A new clinical trial to test the effectiveness of pre-exposure prophylaxis in stable sexual relationships has started in Uganda, with 3,900 discordant couples enrolled in a five-year study.

"The aim of the study is to find out whether pre-exposure prophylaxis [PrEP] prevents HIV acquisition within HIV discordant couples," said Dr Jonathan Wangisi, principal investigator of the study.

The AIDS Support Organisation (TASO), the Institute of Infectious Diseases (IDI) and the US Centres for Disease Control (CDC) will conduct the study in various districts of Uganda. The trials are being undertaken in partnership with the University of Washington, Seattle, and the Bill and Melinda Gates Foundation.

If successful, the project will present a new HIV-prevention method that focuses on a non-traditional high-risk group that has not adequately been targeted. According to the government, at least 42 percent of all new infections in Uganda occur in stable sexual relationships.

The study could also make PrEP a major tool in the fight against HIV/AIDS, and present discordant couples - where one partner is HIV-positive and the other negative - with a means to have children without fear of infecting the HIV-negative partner.

Wangisi said a pill with either tenofovir, or a combination of tenofovir and truvada - both highly effective life-prolonging antiretroviral (ARV) drugs - or a placebo, would be given to the HIV-negative partner. The pill is

to be taken orally every day at a time agreed among the participants in the different study sites.

Several recent studies have shown that the odds of the negative partner in a discordant heterosexual relationship becoming infected are very low when the positive person's viral load has dropped significantly as a result of treatment.

The study has a high risk of transmission, so all participating discordant couples will be counselled and encouraged to use all available HIV-prevention measures, including male circumcision, abstinence and condoms.

"PrEP is not a substitute for condoms or other proven HIV-prevention strategies, it is an addition," Wangisi said. "Condoms, if used regularly and properly, are the best medical intervention in HIV prevention for those that cannot abstain."

Dr Kihumuro Apuuli, director-general of the Uganda AIDS Commission, said the study was necessary because of the reported low condom use among HIV-discordant couples and few people knew the HIV status of their long-term sexual partners.

Only 21 percent of Uganda's 30 million people have ever been tested for HIV, but estimates have put the number of new infections at over 100,000 annually, and at least 1.1 million people are infected with HIV.

Modes of transmission include multiple sexual partners, which accounts for 37.3 percent; mutually monogamous partnerships, 35.1 percent, and mother-to-child transmission, 18.1 percent.

"10 years later female condom finally finds footing"

Date: 12 November 2008

Source: *Medill Reports (Northwestern University)*

Author(s): Ryan Graff

<http://news.medill.northwestern.edu/chicago/news.aspx?id=105117>

The market for the female condom is finally booming. But you won't find any evidence as you stroll through the aisles of your local pharmacy. A better place to look would be the ledgers of international HIV/AIDS relief organizations.

The contraceptive, manufactured by Chicago-based Female Health Co., failed to catch on with consumers around the world after it was invented in the early 1990s. People giggled at it. Women weren't interested in using it. Many eventually forgot about it and assumed that the product had disappeared.

But the female condom survived quietly despite weak retail sales because of public health organizations. Now with a worldwide focus on the HIV/AIDS pandemic in developing nations, the female condom and the company that manufactures it have finally found some footing. Female Health broke a 10-year losing streak in 2006 when it made a \$282,000 profit – earning money for the first time in its history. By 2007 Female Health posted \$1.7 million in profit on revenue of \$19.3 million.

“It took many more years to make it work than we thought it would,” said O.B. Parrish, Female Health’s CEO and co-founder of the company. “But we’re now across the line.” The company has no debt.

Why is Female Health suddenly profitable? The worldwide budget for the prevention and treatment of HIV/AIDS has ballooned – from \$4 billion in 2004 to \$10 billion in 2007. And things may be getting better. Last summer the President's Emergency Plan for AIDS Relief committed \$48 billion to AIDS relief over the next five years. And the United Kingdom's Department for International Development announced a plan to commit \$12 billion over the next seven years. Another big customer is National AIDS Control Organization, in India.

FHC stands “to make a pretty good chunk of money” if it can capture even a small percentage of that business, said Tim Hanson, a senior analyst at Motley Fool, which lists FHC among its Hidden Gems. Hanson owns shares of Female Health.

The stock rose from \$1.20 in December 2006 to \$3.60 in October 2007 before settling at prices ranging from \$2.50 to \$3. It closed Wednesday at \$2.55.

There is some risk in relying on government spending, Hanson said, especially since many governments that poured billions into HIV/AIDS relief over the past few years have lately poured billions into saving their own financial systems.

Still, if the funding for HIV/AIDS continues, there is certainly room for Female Health to grow. Last year over 11 billion male condoms were shipped to various part of the world grappling with HIV/AIDS, compared to just 26 million female condoms, said Donna Felch, Female Health’s chief financial officer.

“We’ve just barely begun to enter that market,” Felch said. In some parts of Africa 70 percent of new AIDS cases are in women, she said. The female condom is the only AIDS-protection product that women themselves control. She expects as more and more women get to know and accept the product that Female Health will ship even more.

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EDITOR'S NOTE: *The full text of this article is available for public access at the above website.*

[Return to Table of Contents](#)

8. NON-HIV STIS AND REPRODUCTIVE HEALTH

"In Phase III, Gardasil prevents HPV in men"

Date: 13 November 2008

Source: *FierceBiotech*

Author(s): Maureen Martino

<http://www.fiercebiotech.com/story/phase-iii-gardasil-prevents-hpv-men/2008-11-13>

It looks like Gardasil may not just be for girls anymore: a Phase III study of Merck's HPV vaccine found that the jab prevented 90 percent of external genital lesions caused by the disease men aged 16 to 26. In a study of 4,000 men, only three subjects who got the shot developed lesions; there were 31 cases in the placebo group. Gardasil prevents lesions caused by types 6, 11, 16 and 18

Merck said that the company remains on track to submit an sBLA for Gardasil for use in men by the end of 2008. The findings were presented at the European Research Organization on Genital Infection and Neoplasia (EUROGIN) International Multidisciplinary Conference.

[Return to Table of Contents](#)

9. POLITICS AND POLICY

"Adolescents are under-represented in clinical research"

Date: 18 November 2008

Source: *in-Pharma Technologist.com*

Author(s): Phil Taylor

<http://www.in-pharmatechnologist.com/Publications/Pharmaceutical-Science/OutSourcingPharma/Clinical-Development/Adolescents-are-under-represented-in-clinical-research/?c=W1FT1f7k%2BpKSKcXNXkNInA%3D%3D>

Recent European legislation designed to increase the number of children in clinical trials has had a positive impact in ensuring that paediatric patients are included in medicine testing.

But a commentary published in the journal *Clinical Pharmacology & Therapeutics* (December 2008 issue) argues that adolescents remain overlooked by clinical researchers.

The authors - Bill Kapogiannis and Donald Mattison – point out that data collated by the US National Institute for Allergy and Infectious Disease (NIAID) found that only 5.4 per cent of 9,500 participants in HIV trials conducted at the institute were adolescents, while other research indicates similarly low levels in cancer studies.

They suggest that low participation rates in trials may be one reason why adolescents experience poor survival rates in cancer trials compared to children and adult patients

Kapogiannis and Mattison believe that it is critical that adolescents are actively recruited into clinical trials in order to avoid the risk of unpredictable pharmacological responses to medicines.

Physical changes, such as puberty, can change adolescent patients' response to medicines, they note. And "in addition to physical changes, adolescents are susceptible to psychosocial factors that can affect taking

the drug as directed, and place them at risk for additional disorders,” according to Kapogiannis and Mattison.

Adherence to medication regimens is a well-recognised problem with adolescents. Peer pressure, a wish to be more independent, and the use of illicit drugs or alcohol and mood disorders are all factors that are seen with adolescents and can impair compliance.

“Adolescents are exposed to many marketing campaigns and are at risk for misuse of products, but few studies look at this group,” write the authors. For example, studies suggest a third of adolescents use over-the-counter medicines at higher than the recommended label dose

Kapogiannis and Mattison also point out that the high rate of clinical trials in children masks the fact that in many cases they involve drugs predominantly marketed and used in adults.

Increasing the recruitment of adolescents into trials requires a wide-ranging approach that solves challenges relating to “trial design, safety, legal, ethical, regulatory, and operational factors,” according to the authors.

“Ethical research with adolescents should focus on two goals: protection from research risk and appropriate inclusion in clinical research that will improve our understanding of therapeutics,” they conclude.

"Poland set to remove tax block for clinical trials"

Date: 18 November 2008

Source: *in-Pharma Technologist.com*

Author(s): Phil Taylor

<http://www.in-pharmatechnologist.com/Publications/Pharmaceutical-Science/OutSourcingPharma/Clinical-Development/Poland-set-to-remove-tax-block-for-clinical-trials/?c=W1FT1f7k%2BpKhyX%2FEGhRMtw%3D%3D>

One of the obstacles to the development of Poland's clinical research market is due to be removed next month, according to local consultancy firm Polish Market Research.

PMR notes that the amendment to Poland's tax code, effective from December 1, will amend the list of "expert services" compiled under Article 27 of the country's Goods and Services Tax Act and make clinical research taxable in the client's country, rather than Poland.

That should make operating the country less of a headache for contract research organisations (CROs) and pharmaceutical developers alike, as VAT would not be imposed on foreign companies, and CROs located in Poland could claim a refund.

The situation in Poland has been confusing for contractors, with four separate categories under which CROs operate, some of which are Goods and Services Tax-exempt – attracting a value-added tax rate of 22 per cent - and some which are not. Complicating matters still further, individual tax inspectors have

extensive freedom to interpret how a case should be categorised.

Despite the tax break, however, the lengthy and complicated procedure of trial registration with Poland's CEBK (Central Register of Clinical Trials) remains the key barrier to the development of the clinical research market.

In 2007 the Polish clinical trial market- defined as Phase I-IV clinical trials and bioequivalence tests, totalled nearly PLN 630m (€167m), a rise of 10 per cent on 2006. PMR research published back in July suggested that the size of the market could increase to PLN 800m (€212m) in 2010, but said at the time this would only be possible "if the Health Ministry manages to implement less formalised requirements for submission of clinical trial applications before the end of 2009."

Polish drug sector on the up?

Meanwhile, a new report from Research and Markets indicates that the Polish drug market as a whole will show "modest growth" out to 2012 as the government keeps tight control of the pharmaceutical budget.

To date Poland has kept its drugs bill down by restricting the number of new innovative medicines that receive reimbursement, relying instead on older generic drugs for many therapeutic categories.

That could change, the report suggests, as "favourable economic conditions are set to fuel increased healthcare spending over the next few years, which should hopefully transcend into slightly more liberal policies on innovative medicines."

An increasing number of private hospitals - estimated to be around 150 at present -should also drive expansion of the drug market over the next five years, it said.

"Fighting AIDS at home"

Date: 16 November 2008

Source: *The Washington Post*

Author(s): Robert C Gallo

<http://www.washingtonpost.com/wp-dyn/content/article/2008/11/14/AR2008111403132.html>

A lasting legacy of both President Bush and recent Congresses will be the largest global health initiative in the history of mankind. Bush's efforts to reduce HIV infection and mortality rates through the President's Emergency Plan for AIDS Relief (PEPFAR) have made the first real dent in Africa's HIV/AIDS plight. PEPFAR's success should illustrate for the next administration the benefits that would come from creating a similar program to battle the rise of HIV infections in America's inner cities.

When PEPFAR was launched in 2003, only about 50,000 people in Sub-Saharan Africa were receiving antiretroviral treatment for HIV/AIDS. Few Americans realize that through this program, our nation has supported lifesaving antiretroviral treatment for more than 1.7 million people around the world and prevention programs that have helped HIV-positive women give birth to nearly 200,000 HIV-free infants.

At the University of Maryland School of Medicine's Institute of Human Virology, we see the progress PEPFAR is making. Our institute treats more than 200,000 HIV-positive patients through its PEPFAR grants; we are helping to implement the program in six African and two Caribbean nations. We see firsthand the good that PEPFAR has accomplished -- good that could come of having a PEPFAR-style program for America's inner cities.

Sadly, in 2008, some places in the United States, chiefly poor urban areas, are home to the same rising HIV/AIDS statistics as those of some Third World countries. Our institute is in the epicenter of the growing HIV/AIDS pandemic in Baltimore; it provides medication and therapy to more than 5,000 HIV-positive city residents.

The most recent statistics from the U.S. Centers for Disease Control and Prevention show that Maryland leads the 50 states per capita in the rise of HIV/AIDS. Baltimore is one of many cities in need of a PEPFAR-style program to reduce infection rates and increase longevity. Though this pandemic is most prevalent in cities along the Interstate 95 corridor, including Miami, the Baltimore metropolitan area and the Washington metro area, infection rates show that it has spread throughout the nation.

A PEPFAR plan for America's inner cities would help to neutralize and diminish the number of people contracting HIV and the number dying of AIDS. It could provide access to prescribed care and medical therapies so patients with HIV can live a normal lifespan (many don't even realize this is possible). An effort to help these Americans, among our country's poorest, could also strengthen U.S. international relations, sending a message to the world that America recognizes that is not different from other countries and that we, too, have an HIV/AIDS pandemic.

Such a program could also help build clinical infrastructure for diagnosis and treatment in inner cities. Federal and state officials have already allocated enormous sums to fight bioterrorism. But in the past seven years, more Americans have been the victims of HIV/AIDS than have been affected or killed by any bioterrorist attack. In any case, a PEPFAR-style program focused on our inner cities would certainly help prepare people in the event of a bioterrorist attack.

Education is the key to managing and preventing HIV infection. This country needs a program that can teach people about prevention and early detection. As long as socioeconomic conditions prevail, those living in HIV/AIDS "hot spots" without education about the disease and facing other life challenges -- such as mental illness, drug abuse, homelessness and lack of health insurance -- will be at risk even if we do develop an AIDS vaccine.

At the same time that many in this country and around the world are working diligently to develop an AIDS vaccine, we must actively address the growing HIV/AIDS pandemic in the United States. When an AIDS vaccine does become available, a program to reduce HIV infection in our inner cities would ensure that our nation is educated and positioned to readily distribute the medicine, helping to put an end to this terrible disease. In the meantime, the program would help stabilize our growing HIV pandemic and stop the spread of HIV.

Unless we develop a program to fight HIV infection in America's inner cities, our urban centers will continue to face an even more daunting pandemic. To improve the health of millions of Americans and to reduce our

HIV infection rates, the next administration should craft and implement a PEPFAR plan targeting our inner cities.

"Swaziland: Promise to heal the health service"

Date: 14 November 2008

Source: *IRINNews.org*

<http://www.irinnews.org/report.aspx?ReportID=81481>

Moved by the deplorable conditions he found on a tour of Swaziland's hospitals and clinics, Prime Minister Sibusiso Dlamini has vowed to reform the healthcare system.

"If you don't do what I have just said about improving hospitals, you must just hit the road and head home," Dlamini instructed Minister of Health and Social Welfare Benedict Xaba.

Like the Prime Minister and the rest of cabinet, Xaba was appointed to his job in November by King Mswati III, after the general election on 19 September.

Along with a food crisis and high unemployment, the deteriorating health in a country with less than one million people poses the greatest threat to the long-term development of this landlocked, resource-poor nation.

At Raleigh Fitkin Memorial (RFM) Hospital in the central town of Manzini, the country's industrial hub, where the premier and health minister paid a visit this week, sophisticated diagnostic machines lie idle, lacking spare parts or simply a competent technician to run them.

Problem to be poor

"Patients lie on floors; people with contagious disease are crowded in with others patients. The queues are endless. One of our greatest fears working here is catching HIV," one of the nursing staff told IRIN.

"From time to time there are shortages of basics, like rubber gloves, but you can't stop assisting people; you can't shun a bleeding person because he or she may be HIV-positive." UNAIDS estimates that over a quarter of the sexually active adult population is HIV positive.

The hospital, built in 1930 with American money, was the first to offer medical assistance to Swazis, when the country was still under British colonial rule.

Twenty years ago it was a no-frills, well-maintained facility, but modest renovations have not kept pace with a doubling of the urban population, whose newcomers tend to dwell in poor informal settlements ringing the town.

"The poor cannot afford doctors, so the RFM emergency room is their primary healthcare [clinic]," said Joseph Mamba, a social welfare worker in Manzini.

Hearing from hospital staff, administrators and patients about these Dickensian conditions, a visibly angry Dlamini ordered improvements to start by the end of 2008.

Health officials hope the premier's passion is not short-lived, and that the health ministry can be reformed. In the recent past it was led by members of the royal family, who have been pilloried in the press for being reportedly unqualified and incompetent.

The perennial problems of low morale and the brain-drain of qualified staff to other countries are not likely to be rectified until the government reprioritises its spending and increases the budget allocation to the health sector.

Life expectancy in Swaziland is just 33 years, according to the UN Development Programme. A decade ago a population of 1.2 million was projected for 2008; now there are fewer than one million, and only 9 percent of men and 12 percent of women can expect to see their 65th year.

"Bush looks back on past relief efforts in Africa"

Date: 12 November 2008

Source: *Associated Press*

Author(s): Christine Simmons

<http://www.washingtonpost.com/wp-dyn/content/article/2008/11/12/AR2008111202955.html>

President Bush, reflecting on his time in office, said Wednesday that "one of the most uplifting" experiences of his nearly eight-year tenure has been witnessing the gains Africa has made in education and fighting hunger and disease.

Speaking at a charity dinner, Bush called the work done for Africa by his administration and family "a labor of love." Before his remarks, he accepted the Bishop John T. Walker Distinguished Humanitarian Service Award, which pays tribute to leaders in humanitarian fields for Africa.

The dinner benefits Africare, a U.S.-based charity that aims to improve the quality of life in Africa by addressing needs in food security, agriculture, health and HIV/AIDS.

His voice rising, Bush said the heart of the U.S. policy in Africa is knowing that its people have the "talent and ambition and resolve to overcome" great challenges.

"We do not believe in paternalism. We believe in partnership, because we believe in the potential of the people on the continent of Africa," he told an audience of about 1,500 in a hotel ballroom. "One of the most uplifting (experiences) has been to witness a new and more hopeful era dawning on the continent."

Bush was honored for U.S. initiatives that have supported education, helped to suppress HIV/AIDS and helped to end hunger in African countries.

The White House has said the President's Emergency Plan for AIDS Relief has supported care for more than 6.6 million people worldwide and allowed nearly 200,000 children in Africa to be born HIV-free through mother-to-child prevention work. The U.S. has trained more than 700,000 teachers, distributed more than 10 million textbooks and provided hundreds of thousands of scholarships to help girls go to school in Africa.

Bush defended his large contributions to Africa against those who say "What good does it do me, Mr. President, for our government to support Africa?"

"One, it is in our national security interest that we defeat hopelessness. It is in our economic interest that we help economies grow," he said. "And it is in our moral interest that when we find hunger and suffering, the United States of America responds in a robust and effective way."

The dinner is in memory of Bishop John T. Walker, the first African-American Episcopal Bishop of Washington and the longtime chairman of Africare's board.

[Return to Table of Contents](#)

10. HIV/AIDS FUNDING

Statehealthfacts.org Provides New Data on HIV/AIDS Funding

<http://www.statehealthfacts.org/>

Updated Data on HIV/AIDS Funding, StateHealthFacts.org: The Web site has been updated to include HIV/AIDS data from the National Alliance of State and Territorial AIDS Directors for all states and the nation for the 2007 fiscal year. The data include figures for total federal funding; Housing Opportunities for Persons with AIDS funding; CDC funding for HIV/AIDS and sexually transmitted infection prevention; Substance Abuse and Mental Health Services Administration funding; and Office of Minority Health HIV/AIDS funding. In addition, the site has added new data from NASTAD on the Ryan White Program for the 2007 fiscal year (Kaiser Family Foundation release, 11/13).

[Return to Table of Contents](#)

11. PHARMACEUTICAL INDUSTRY

"Philips iPill targets treatment for digestive tract diseases"

Date: 17 November 2008

Source: *Healthcare IT News*

Author(s): Sam Collins

At this week's opening of the American Association of Pharmaceutical Scientists Annual Meeting and Exposition in Atlanta, Philips Research will announce its new intelligent pill technology "iPill", targeted at assisting drug development and enabling new therapies for digestive tract disorders such as Crohn's disease, colitis and colon cancer.

In 2001, the first camera pill was approved by the Federal Drug Administration (FDA) for diagnostic applications.

Now seven years later, for the first time, researchers from Dutch-based Philips will present their iPill technology - the next generation to the camera pill. The iPill is a capsule, the same size as a camera pill, and has been designed to be swallowed and to pass through the digestive tract naturally. It can be electronically programmed to control the delivery of medicine according to a pre-defined drug release profile.

The iPill determines its location in the intestinal tract by measuring the local acidity of its environment. Distinct areas of the intestinal tract have distinct pH (a measure of acidity) profiles: the stomach is highly acidic and upon exiting the stomach the acidity of the gut sharply decreases and then becomes progressively less acidic from the upper intestine onwards.

Armed with this pH information and data about capsule transit times, the location in the gut can be determined with good accuracy. The iPill releases medicine from its drug reservoir via a microprocessor controlled pump, allowing accurate programmable drug delivery. In addition, the capsule is designed to measure local temperature, and report measurements wirelessly to an external receiver unit.

"The combination of navigational feedback, electronically-controlled drug delivery and monitoring of the intestinal tract promises to make iPill technology a valuable research tool for drug development," said leading pharmaceutical drug delivery expert Karsten Cremer of Pharma Concepts GmbH, Basel (Switzerland).

"In particular, I recognize the potential of this technology to improve drug candidate profiling and selection, which could ultimately accelerate the development of new drugs."

Henk van Houten, senior vice president of Philips Research and head of the Healthcare research program, said: "As part of Philips's commitment to provide integrated solutions for patient care, we are exploring the potential benefits of our technologies in the therapeutic arena. We foresee that technologies like the iPill, that combine electronics with diagnostic and therapeutic properties, will open up the possibility of targeting almost any kind of drug to a specific location in the intestinal tract."