PHS 904 Special Topics in Epidemiology: HIV/AIDS (1 credit)

COURSE DESCRIPTION and OBJECTIVES

This course provides an overview of the HIV/AIDS pandemic. Topics covered will include a review of the epidemiology of HIV/AIDS, the natural history of HIV disease, strategies for prevention and treatment, and local and global health impact with a focus on historically significant milestones as well as promising current and future research.

The objectives of the course are:

1. To describe the changing epidemiology and impact of HIV/AIDS in the U.S. and worldwide
2. To identify co-factors of and strategies to prevent HIV transmission
3. To understand how HIV progresses to AIDS and strategies to manage HIV disease
4. To examine current and future areas of research that aim to prevent transmission of HIV
5. To appreciate how descriptive and analytic epidemiological methods have contributed to the study of HIV/AIDS

COURSE ORGANIZATION

Course Director: Ajay K. Sethi, PhD, MHS
Assistant Professor
Department of Population Health Sciences
587 WARF
608-263-1756
aksethi@wisc.edu

Office Hours: Please email or phone me for an appointment

Meeting times and place:

Date: August 10-14, 2009
Time: MTuWThF 1:00-4:00 PM
Place: HSLC 1222
**Reading:**

Reading for this course will be research articles and Internet-based resources. These can be found in and after the course schedule and on the course website. Please read the material and links provided to maximize your learning in class and to promote a didactic learning environment.

Although a textbook is not required for this course, there are several texts available for your personal library depending on your individual needs and interests:

   
   This text is published annually and presents a balanced review of current research and information on HIV infection, HIV disease, and AIDS. Information is presented within biological, medical, and social frameworks.

   
   This monograph provides a comprehensive summary of the virology of and immunology of HIV. It is a basic science text and useful reference for HIV/AIDS researchers. A review of this book can be found on the course website.

   
   This textbook is a comprehensive guide for physicians who care for HIV-infected patients.

**Learn@UW:**

The course is administered through Learn@UW ([https://learnuw.wisc.edu/](https://learnuw.wisc.edu/)). Copies of the readings and links to websites are available on the course website.

Handouts for individual lectures may or may not be available online prior to class. If the handout is unavailable online the day before class, a hardcopy will be provided for you in class.

**Student Evaluation:**

You will be evaluated on your participation, attendance, and a daily quiz based on the readings assigned for that day. The total grade will be determined based on the following breakdown:

- 50% Class participation
- 25% Take-home quiz
- 25% In-class quiz
Out of respect to lecturers and your fellow students who are contributing their time and expertise to the success of the course, all students are expected to attend class. Class attendance is also a prerequisite for class participation completion of in-class quizzes. If you are absolutely unable to attend class, please notify the Course Director in advance of class to document your absence and reason.

In fairness to students who turn in their assignments on time, late assignments will be reduced one grade level (10%). This can be waived in advance for valid reasons. Please email the Course Director to document your request. Given the short length of the course, if you are aware in advance of the start of the course that you are unable to attend class, consider taking the course when it is more convenient for you.

NON-DISCRIMINATION POLICY

The UW-Madison is committed to creating a dynamic, diverse and welcoming learning environment for all students and has a non-discrimination policy that reflects this philosophy. Disrespectful behaviors or comments addressed towards any group or individual, regardless of race/ethnicity, sexuality, gender, religion, ability, or any other difference is deemed unacceptable in this class, and will be addressed publicly by the professor.
## COURSE SCHEDULE

### August 10, 2009

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity Description</th>
<th>Reading</th>
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<tbody>
<tr>
<td>2:30 – 2:45 PM</td>
<td>Break</td>
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Website: HIVInSite ([http://hivinsite.ucsf.edu](http://hivinsite.ucsf.edu)) |
August 11, 2009

1:00 – 2:00 PM  **Lecture: Epidemiology of HIV/AIDS in the U.S. and the world (Sethi)**

Reading:


2:00 – 2:15 PM  Break

2:15 – 3:00 PM  **Discussion Topic: Plasma HIV RNA as a prognostic indicator of CD4 decline**


Letters to the editor in response to the second article above.


3:00 – 4:00 PM  **Lecture: Prevention of mother-to-child transmission of HIV (Sethi)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>1:00 – 2:00 PM</td>
<td><strong>Lecture:</strong> Prevention of parenteral transmission of HIV</td>
</tr>
<tr>
<td></td>
<td>Wodak A, Cooney A. Do needle syringe programs reduce HIV infection</td>
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<td>among injecting drug users: a comprehensive review of the international</td>
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<td>2:00 – 2:15 PM</td>
<td><strong>Break</strong></td>
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<tr>
<td>2:15 – 3:00 PM</td>
<td><strong>Discussion Topic:</strong> Treatment of STIs to prevent transmission of HIV</td>
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<td></td>
<td>(Sethi)</td>
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<tr>
<td></td>
<td>Grosskurth H, Mosha F, Todd J, Mwijarubi E, Klokke A, Senkoro K, Mayaud</td>
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<td></td>
<td>treatment of sexually transmitted diseases on HIV infection in rural</td>
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<td></td>
<td>Wawer MJ, Sewankambo NK, Serwadda D, Quinn TC, Paxton LA, Kiwanuka N,</td>
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<td>Wabwire-Mangen F, Li C, Lutalo T, Nalugoda F, Gaydos CA, Moulton LH,</td>
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<td>Meehan MO, Ahmed S, Gray RH. Control of sexually transmitted diseases</td>
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<td>for AIDS prevention in Uganda: a randomised community trial. Rakai</td>
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<td>Grosskurth H, Mosha F, Todd J, Mwijarubi E, Klokke A, Senkoro K,</td>
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<td>for AIDS prevention in Uganda: a randomised community trial. Rakai</td>
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<td>Celum C, Wald A, Hughes J, Sanchez J, Reid S, Delany-Moretlwe S, Cowan</td>
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<td>F, Casapia M, Ortiz A, Fuchs J, Buchbinder S, Koblin B, Zwerski S, Rose</td>
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<td></td>
<td>acquisition in herpes simplex virus 2 seropositive women and men who</td>
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<td>have sex with men: a randomised, double-blind,placebo-controlled trial.</td>
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<td>Watson-Jones D, Weiss HA, Rusizoka M, Changalucha J, Baisley K, Mugeye</td>
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<td>K, Tanton C, Ross D, Everett D, Clayton T, Balira R, Knight L, Hambleton</td>
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<td></td>
<td>I, Le Goff J, Belec L, Hayes R; HSV trial team; Steering and Data</td>
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<td></td>
<td>Monitoring Committees. Effect of herpes simplex suppression on incidence</td>
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<td>3:00 – 4:00 PM</td>
<td><strong>Lecture:</strong> HIV Vaccines (O’Connor)</td>
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<td><strong>Reading:</strong></td>
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<tr>
<td></td>
<td>Fauc  AS, Johnston MI, Dieffenbach CW, Burton DR, Hammer SM, Hoxie JA,</td>
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<tr>
<td></td>
<td>Martin M, Overbaugh J, Watkins DI, Mahmoud A, Greene WC. HIV vaccine</td>
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</tbody>
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### August 13, 2009

**Take-home quiz due at beginning of class**

| 1:00 – 2:00 PM | **Lecture:** Wisconsin’s approach to the HIV epidemic (Vergeront)  
Website: Wisconsin Department of Health Services  
([http://dhs.wisconsin.gov/aids-hiv/index.htm](http://dhs.wisconsin.gov/aids-hiv/index.htm)) |
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<td>2:00 – 2:15 PM</td>
<td><strong>Break</strong></td>
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| 2:15 – 3:15 PM | **Discussion Topic:** Male circumcision to prevent HIV transmission  
| 3:30 – 4:00 PM | **In class quiz**                                                                                                                                 |

### August 14, 2009

| 1:00 – 2:00 PM | **Lecture:** Clinical management of HIV infection (Graziano)  
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<td>2:00 – 2:15 PM</td>
<td><strong>Break</strong></td>
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</table>
| 2:15 – 3:15 PM | **Lecture:** Treatment of HIV in Uganda (Graziano)  
Website: AVERT ([http://www.avert.org/](http://www.avert.org/)) |
| 3:15 – 3:30 PM | **Break**                                                                                                                                   |
| 3:30 – 4:00 PM | **Lecture:** Future directions in HIV/AIDS research (Sethi)                                                                                   |
PRIMARY AND ADDITIONAL READING

Identification of the HIV epidemic


Major U.S. cohort studies


Pathophysiology of HIV Disease


**Incubation period of HIV**


**Genetics of HIV transmission**


**Plasma HIV RNA as a prognostic indicator of CD4 decline**


13. Letters to the editor in response to the second article above.


### Epidemiology of HIV/AIDS in the United States and world


### HIV testing


### Sexual transmission of HIV


Prevention of mother-to-child transmission of HIV


Treatment of sexually transmitted infections to prevent HIV transmission


Prevention of parenteral transmission of HIV


**HIV vaccines**


**Male circumcision to prevent HIV transmission**


Websites

1. Wisconsin Department of Health Services:  
   http://dhs.wisconsin.gov/aids-hiv/index.htm

2. Centers for Disease Control and Prevention, HIV/AIDS:  
   http://www.cdc.gov/hiv/

3. Centers for Disease Control and Prevention, Global Aids Program:  
   http://www.cdc.gov/nchstp/od/gap/about.html

4. Joint United Nations Programme on HIV/AIDS, UNAIDS:  
   http://www.unaids.org/en/

5. World Health Organization, HIV/AIDS:  
   http://www.who.int/topics/hiv_infections/en/

6. HIVInSite:  
   http://hivinsite.ucsf.edu

7. AIDSinfo:  
   http://www.aidsinfo.nih.gov/

8. AVERT:  
   http://www.avert.org
FACULTY

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