San Diego State University
Graduate School of Public Health
Division of Epidemiology and Biostatistics

PH 649: Border and Global Public Health Surveillance (3.0 units)
Spring 2007
Friday (4:00-5:40pm) and Lab (3 hours, TBD)

Hepner Hall 122

SYLLABUS
(Subject to change)

Instructor:	Alfonso Rodriguez, Ph.D, DVM, MPVM
E-mail:	arodrigu@dhs.ca.gov
Office Phone	(619) 688-0178
Office Hours:	After class or by appointment

Required Textbook: Teutsch SM and Churchill RE. *Principles and Practice of Public Health Surveillance* (2nd. Edition), Oxford University Press, 2000.

OVERVIEW
Dramatic increases in the volume and speed of international travel, either for tourism or migration, and trade in recent years have increased opportunities for diseases to spread across international boundaries. In addition, some emergent diseases, such as SARS, are good examples of how rapidly an initially local outbreak can become a global health emergency. The expected arrival of the next influenza pandemic and the intentional release of infectious agents are also looming public health threats.

After a disaster, either man-made or natural, there is a need to rapidly collect basic epidemiologic information and implement a surveillance system that will guide public health and mitigation efforts. Efficient local and global surveillance systems are also key to rapidly detect and contain international disease outbreaks. International cooperation is needed for the detection, alert and response to cross-border public health emergencies. That is especially true among neighboring countries, such as in the U.S.-Mexico border region. Besides public health emergencies, other health issues, such as HIV/AIDS, obesity and diabetes, have become global epidemics that require monitoring to assess disease trends, identify populations at risk and evaluate public health interventions.

Prerequisites: Public Health 601 and 602.

LEARNING OBJECTIVES
Upon the completion of this course, the students should be able to:

1. Recognize and analyze priority global health issues and surveillance systems to monitor those health issues and detect and respond to health emergencies;
2. Use international, national and local sources of health surveillance information to assess public health issues;

3. Recognize the unique characteristics of the California-Mexico border region and the challenges and strategies to enhance collaboration between neighboring countries with different cultures, health systems, priorities and great disparities in availability of resources;
4. Describe methods for collecting data from a variety of sources to conduct a rapid health assessment in an emergency situation in order to develop recommendations for allocation of resources and addressing needs,
5. Discuss the U.S and Mexican epidemiologic surveillance systems and their specific approaches to detect and respond to outbreaks and other public health emergencies. Describe U.S and Mexico collaborative surveillance projects;
6. Conduct a systematic evaluation of a surveillance system; and
7. Organize and deliver a clear and concise oral presentation summarizing the results of the evaluation exercise.

COURSE ORGANIZATION/REQUIREMENTS

Class time will consist of lectures, guest presentations, informal discussions of readings and in-class videos and student presentations. Laboratory (field work) time will include site visits that will be arranged at hours other than class time.

Class Participation (10%): Students are fully expected to become familiar with the weekly readings, to prepare questions and comments to share with other seminar participants, and to actively participate in discussions. Your attendance at each class is also fully expected. (10% of total grade—instructor evaluation will be used)

Written Report (60%): Each student, in consultation with faculty, will select a global health issue. Then, the student will identify two relevant international and/or national web-based surveillance systems and conduct a systematic comparative evaluation of those systems. The report should be up to 20 pages in length. Additional detailed evaluation guidelines will be provided. The report will be due on 04/13/07 and should be submitted to the mailbox of Dr. Alfonso Rodriguez, Graduate School of Public Health, no later than 5:00 p.m. on the due date. (60% of total grade—instructor evaluation will be used)

Oral Presentation of Report (30%): Students will give a professional quality oral presentation of their evaluation report at the end of the semester. Guidelines will be distributed. (10% of total grade— instructor evaluation will be used)

Standards for evaluations for student presentations (15 minutes per student)

Content must include: 1) General information on the global health issue under surveillance; 2) overview of the web-based surveillance systems; 3) Comparative discussion of strengths and limitations of the surveillance systems.
Presentation: PowerPoint (required)
Judged on: Overall content, accuracy and conciseness; Quality of audiovisuals.

GRADING POLICY

Basis of Grade:

Class participation	10% (10 points)
Student research project	60% (60 points)
Class presentation	30% (30 points)

Grade Distribution:

A- to A	90-100 points
B- to B	80-89 points
C- to C	70-79 points
D- to D	60-69 points
F	Below 60 points

COURSE OUTLINE AND ASSIGNMENT DUE DATES

Week 1 (01/19/07) **Introduction to the Course**; Video (Global Health): discussion

Week 2 (01/26/07) **Global health**

Week 3 (02/02/07) **Public Health Surveillance**

Week 4 (02/09/07) **Sources of surveillance data**
- Notifiable diseases
- Periodic surveys
- Vital records
- Registries
- Administrative data
- Others: environmental indicators, WNV

Week 5 (02/16/07) **Sources of surveillance data** (Cont.)

Week 6 (02/23/07) **Evaluation of surveillance systems**

Week 7 (03/02/07) **Surveillance: developed vs. developing countrie**s
- U.S Surveillance System
- Mexican Surveillance System
- International Health Surveys
- Data quality issues

Week 8 (03/09/07) **Global health surveillance systems**
- Consequences of international outbreaks
- WHO: GOARN
- GPHIN
- Regional Surveillance Networks
- PROMED

	• Others: DOD Surveillance System, Geosentinel • International Health Regulations • Challenges of global surveillance
Week 9 (03/16/07)	**Global health surveillance systems (Cont.)** • Pandemic influenza surveillance
Week 10 (03/23/07)	**Rapid Epidemiologic Assessments** • Principles and Practice • Field examples
Week 11 (03/30/07)	**SPRING RECESS**
Week 12 (04/06/07)	**Border health issues and border surveillance** • Characteristics of the U.S-Mexico Border Region • Border/Binational health issues • Binational collaboration in public health
Week 13 (04/13/07)	**Cross-border Surveillance Projects** (field visit) • EWIDS, BIDS • Binational Syphilis Elimination Project • CureTB **Written Report Due (By 5:00PM)**
Week 14 (04/20/07)	**CDC Division of Global Health and Quarantine**. **Laboratory issues in global surveillance** (field visit)
Week 15 (04/27/07)	Final project presentations
Week 16 (05/04/07)	Final project presentations
Week 17 (05/11/07)	Final project presentations

READINGS REQUIREMENTS DUE DATES

Week 2 (01/26/07): Global health

- Frenk, J. and Gomez-Dantes, O., 2002. Globalization and the challenges to health systems. Health Affairs (21) 3: 160-165
- CDC, 2002. Protecting the Nation's Health in an Era of Globalization: CDC's Global Infectious Disease Strategy. Pages: 1-25. *Available at: http://www.cdc.gov/globalidplan/global_id_plan.pdf*
- Hodges JR, Kimball AM., 2005. The global diet: trade and novel infections. Globalization and Health 1:4. *Available at: www.globalizationandhealth.com/content/1/1/4*

Week 3 (02/02/07): Public Health Surveillance

- Principles and Practice of Public Health Surveillance, Pages: 1-29; 160-162; 253-264; 275-286
- Bravata DM, McDonald KM, Smith WM, et al., Systematic review: surveillance systems for early detection of bioterrorism-related diseases. Ann. Int. Med. 2004;140:910-922.
- Silk, B.J. and Berkelman, R.L., 2005. A review of strategies for enhancing completeness of notifible diseases reporting. J Public Health management Practice, 11(3), 191-200

Week 4 (02/09/07): **Sources of surveillance data**

- Principles and Practice of Public Health Surveillance, Pages: 30-75; 260-275; 293-300

Week 5 (02/16/07): Sources of surveillance data (Continuation)

- Principles and Practice of Public Health Surveillance, Pages: 76-94; 316-342

Week 6 (02/23/07): Evaluation of surveillance systems

- Centers for Disease Control and Prevention. Updated guidelines for evaluating public health surveillance systems: recommendations from the guidelines working group. MMWR 2001;50(No. RR-13), *Available at: http://www.cdc.gov/mmwr/PDF/RR/RR5013.pdf*

Week 7 (03/02/07): Surveillance: developed vs. developing countries

- Principles and Practice of Public Health Surveillance, Pages: 253-258; 287-315
- Secretaria de Salud, Mexico. Official Mexican Standard NOM-017-SSA2-1994 for epidemiological surveillance (posted on Blackboard)

Week 8 (03/09/07): Global health surveillance systems

- Cash, R.A., and Narasinham, V., 2000. Impediments to global surveillance of infectious diseases: consequences of open reporting in a global economy. Bulletin of the World Health Organization, 78(11):13581367
- Grein, T.W., Kamara, K.O., et al., 2000. Rumors of disease in the global village: outbreak verification. Emerging Infectious Diseases, 6(2):97-102

Week 9 (03/16/07): **Global health surveillance systems (Cont.)/ Pandemic Influenza**

- WHO Global Influenza Surveillance. *Available at: http://www.who.int/csr/disease/influenza/influenzanetwork/en/index.html*

- U S Pandemic Influenza surveillance. *Available at:* *http://www.hhs.gov/pandemicflu/plan/pdf/S01.pdf*

Week 10 (03/23/07): **Rapid Epidemiologic Assessments**

- World Health Organization, Communicable disease control in emergencies: a field manual, 2005 (Chapter 1). *Available at:*

http://www.who.int/hac/techguidance/pht/communicable_diseases/field_manual/en/

- Centers for Disease Control and Prevention (CDC). Rapid health response, assessment, and surveillance after a tsunami--Thailand, 2004-2005.MMWR Morb Mortal Wkly Rep. 2005 Jan 28;54(3):61-4.
- World Health Organization, Communicable disease control in emergencies: a field manual, 2005 (Annex 2)

Week 11 (03/30/07): SPRING RECESS

Week 12 (04/06/07): **Border health issues and border surveillance**

- Doyle, T.J. and Bryan, R.T., 2000. Infectious disease morbidity in the U.S Region bordering Mexico, 1990-1998. The Journal of Infectious Diseases, 182:1503-10.
- Calvin L, Avendaño B and Schwentesius R., December 2004. The economics of food safety: The case of green onions and hepatitis A outbreaks. Available at: http://www.ers.usda.gov/publications/vgs/nov04/VGS30501/VGS30501.pdf

Week 13 (04/13/07): Cross-border Surveillance Systems

- Weinberg, M., Waterman, S., Alvarez Lucas, C., et al., 2003. The US-Mexico Border Infectious Disease Surveillance Project: Establishing Bi-National border surveillance. Emerging Infectious Diseases (9) 1: 97-102
- Early Warning Infectious Disease Surveillance Project. *Available at* *www.bt.cdc.gov/planning/guidance05/pdf/appendix2.pdf* and *http://www.borderhealth.org/usmbhc_early_warning_infectious_disease_surveillance_project.php?curr=programs*

Week 14 (04/20/07): **CDC Division of Global Health and Quarantine**; **Laboratory issues**

- Institute of Medicine, 2005. Measures to Enhance the Effectiveness of CDC Quarantine Station Expansion Plan for U.S. Ports of Entry. *Available at:* *http://www.iom.edu/project.asp?id=22845*
- Institute of Medicine, 2005. Human Resources at U.S. Ports of Entry to Protect the Public's Health. Interim Letter Report. *Available at:* *http://www.iom.edu/report.asp?id=24542*