UF UNIVERSITY of FLORIDA

College of Public Health & Health Professions
College of Medicine
Public Health Surveillance
PHC 6937
Room G112, HPNP
Spring 2017
3 credits

Instructor Information

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Course Overview
The purpose of this course is to prepare students to be able to design, evaluate, and operate public health surveillance systems, and to be able to read scientific reports based on surveillance data critically.

Prerequisites
Principles of Epidemiology (PHC 6001) or at least one semester of introductory graduate-level coursework in epidemiologic methods.

Note: This syllabus will likely be revised as needed during the term.

Course Objectives
Students who complete this course will be able to carry out the following functions at a journeyman level:

- Identify diseases or conditions appropriate to put under public health surveillance

- Identify purposes of such surveillance activities
- Design surveillance systems to meet those purposes
- Evaluate a surveillance system using the CDC Framework
- Choose the likely best source of data for surveillance of particular diseases or health conditions
- Prepare case reports and data for use in a surveillance system
- Identify target audiences for dissemination of surveillance data
- Analyze and display surveillance data for various audiences
- Develop and present policy recommendations based on analysis of surveillance data
- Develop questions for further examination using other methods, based on analysis of surveillance data
- Critique a scientific report based on surveillance data.

Course meeting time:

Wednesdays from 12:50 to 3:50 pm

Text/Readings

Case study materials will be handed out at the beginning of the class at which the case study will be used, and made available electronically as soon as the case study work in class has been completed.

The course text is by McNabb et al., entitled **Transforming Public Health Surveillance: Proactive Measures for Prevention, Detection and Response**, published 2016 by Elsevier. It is available from on-line vendors at a reasonable price.

Each week there will be one or more required readings that could include textbook chapters, web-based documents, articles, or book chapters provided by the instructor. There will be brief but important assignments based on these readings.

You may find the following readings useful. Some will be assigned during the course.

Centers for Disease Control and Prevention. Framework for evaluating public health surveillance systems for early detection of outbreaks; recommendations from the CDC Working Group. MMWR 2004;53 (No. RR-5): pages 1-16. Prepared by James W. Buehler, M.D., Richard S. Hopkins, M.D., J. Marc Overhage, M.D., Daniel M. Sosin, M.D., Van Tong, M.P.H.

Hopkins RS. Design and operation of local and state infectious disease surveillance systems. Journal of Public Health Management and Practice 2005; 11(3): 184-190.

Sosin DM, Hopkins RS. Public Health Surveillance for Preparedness and Emergency Response. In: Principles and Practice of Public Health Surveillance, Lee LM, Teutsch SM, Thacker SB, St Louis ME, Eds. 2010, Oxford University Press, pages 306-320.

Sosin DM, Hopkins RS. Monitoring disease and risk factors: surveillance. Chapter in Pencheon D, Guest C, Melzer D, Muir Gray JA: Oxford Handbook of Public Health Practice, second edition. Oxford, 2006, pp 112-118.

Blueprint for a National Public Health Surveillance System for the 21st. Century. Rebecca A. Meriwether. Accessble at: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/Injury/Blueprint.pdf

CDC: Updated Guidelines for Evaluating Public Health Surveillance Systems, Recommendations from the Guidelines Working Group. Accessible at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm

CDC Chronic Disease Surveillance Indicators web site www.cdc.gov/nccdphp/CDI/overview.htm

Several pages on the Florida Department of Health, Bureau of Epidemiology, external web site:

Non-infectious: http://www.floridahealth.gov/statistics-and-data/survey-data/index.html
Infectious: http://www.floridahealth.gov/diseases-and-conditions/disease-reporting-and-management/index.html

Guest Lecturers

Many weeks, one hour or more of class time will be devoted to a guest lecture on a relevant topic in public health surveillance. Some such guest lectures will occur by video teleconference. The content provided by guest lecturers is an integral part of the course.

Homework

See class project description. Almost every week one document that builds toward the final project will be required to be handed in, either on paper or as an electronic document. These documents will be graded and will contribute to the final project grade, while also helping the student and instructor assure that adequate progress is being made on the project. During many class sessions each of you will make a brief report in class on your progress, up through that assignment.

You will also turn in, by the Tuesday evening of almost every week, a brief document in which you answer three questions about the assigned reading(s) for that week. Briefly, these questions are: (1) What are the 5 main points made in this document or chapter? (2) Does the document make a logical argument, so that the conclusions are supported by the data or arguments presented in the document? (3) Do you agree with the

conclusions or main points made here? Why or why not? (Those of you with a classical education may recognize these domains as grammar, logic and rhetoric.)

Class Participation

This class is generally highly interactive, with several case-studies involving small-group work and reporting back to the whole class. Participation in the case studies and class discussions is an important learning modality for the course material. Absence from class, inadequate preparation for class, or inadequate participation during class, will result in the student learning the material less well, and in a waste of time for both students and instructor. Class attendance and participation will count toward the course grade. Use of internet-connected devices or telephones during class will not be permitted, unless required for one of the case-studies or requested by the instructor. Computers may be used for note-taking during class.

Presentations

Many of the intermediate products of your semester-long project will be presented to the class, usually informally in less than 5 minutes. These presentations provide an opportunity for you to organize your thinking, and the discussion following each presentation will enable you to learn from other students' experiences and their solutions to shared problems. At the end of the course, you will make a formal 15-minute presentation on your completed project for the rest of the students and the instructor.

Course project.

Each student will carry out a course project. Work on the project will begin right after the first class session, and proceed in well-defined stages throughout the term. Each week you will hand in material that reflects your progress on your project. Each week, the instructor will read these materials and give you 1:1 written guidance on your project by e-mail before the next class session. Some weeks, you will also make a brief class presentation. Also see separate handout on class project. For some condition they choose as their topic, students will propose a surveillance system from scratch; for others, students will review available information on existing systems and propose modifications.

- Brief class presentations will include aspects of
    - Choice of conditions to be put under public health surveillance
    - Purpose and likely utility of surveillance system in support of public health and preventive interventions
    - Current state of the art of surveillance for this condition
    - Case or indicator definition(s)
    - Design of a surveillance system
    - Data source(s) for the surveillance system
    - Choice of system attributes to be focus of evaluation, and formative evaluation against these attributes
    - How data from the surveillance system will be presented for various audiences

- o Estimated cost of the system
- ■ These will also be topics in your final paper at the end of term, and your final presentation.
- ■ As a group we will pick an additional condition of current interest to work on collectively in the same way as your individual projects
- ■ Term paper corresponding to in-class presentation: a more in-depth assessment of surveillance options for a student-chosen disease, health condition, risk factor or hazard, building on class presentations, addressing surveillance goals and the criteria in the CDC and ECDC guidelines for surveillance system evaluation. This paper will be thoroughly referenced as to the sources of information that serve as the basis for assertions of fact. You will also turn in the slides you used in your final presentation.

Course Outline

While we have 15 scheduled class meetings (because we meet on a Wednesday), one of those class meetings late in the term will be shortened because of the College of Public Health and Health Professions Research Day (date not available as of this writing).

Date	Topic	Lecturer	
Week 1 January 4, 2017	Introduction of course, course process and course requirements What is public health surveillance? – lecture o Purposes of surveillance at national, state and local levels o Relationship to public health program planning and evaluation o Relationship to planned epi studies o Historical sketch	Hopkins	Required reading: CDC Self-study course SS1978: Principles of Epidemiology in Public Health Practice, chapter 5. Before the first class meeting, take the self-assessment quiz send your answers to the instructor. Class activity: case study on designing an infectious disease surveillance system: Paralytic disease in Ababo. Homework: 1. Read lesson 5, on public health surveillance, work the exercises, and prepare to come to class on 1/11 ready to discuss the material including the exercises. 2. Project: Write a paragraph or two about a proposed topic for your course project, including why you are interested in it and why it would be important. Send this paragraph to Dr. Hopkins by 5 pm on Tuesday, January 12.
Week 2 January 11, 2017	How do public health programs work? o Goals o Methods o Evaluation	Hopkins	Lecture and discussion on public health programs. Class activities: Review readings and exercises from CDC self-study course, chapter 5.

	Types of public health interventions		Homework: 1. Write an updated paragraph on proposed topic for class project, and send to instructor by 5 pm on Tuesday, January 17. 2. Read Chapter 3 in McNabb, and answer the three standard questions: what does it say, is it logical, do you agree? Send your answers to instructor by 5 pm on Tuesday, January 17

Week 3
January 18,
2017
	Some public health programs and approaches to their surveillance needs
	    o Tuberculosis control
	    o Syphilis control
	    o Family Planning
	    o Cervical cancer prevention
	    o Tobacco use prevention
	    o General communicable disease control
	Program logic models
	
	Surveillance and research
	Surveillance and the HIPAA Privacy Rule
		Hopkins	Activities:
			
			1. Lecture.
			2. Class discussion, chapter 3, McNabb
			3. Case study: Surveillance in New York City, first part.
			
			Homework:
			1. Write draft surveillance case definition for your project, and send to instructor by 5 pm on Tuesday, January 26. Be prepared to present briefly at class on January 27.
			2. Read Chapter 4 in McNabb, and answer the three standard questions: what does it say, is it logical, do you agree? Send your answers to instructor by 5 pm on Tuesday, January 24.
			3. For background, read Hopkins RS. Design and operation of local and state infectious disease surveillance systems. Journal of Public Health Management and Practice 2005; 11(3): 184-190.

Week 4 January 25, 2017	Data sources and system design	Hopkins + Guest lecture (invited): a public health leader's perspective on	Activities: 1. Project: present your proposed case definition. 2. Class discussion, chapter 4, McNabb Homework: 1. Write a few paragraphs about the purpose(s) of your proposed surveillance system (or improvements), and send to instructor by 5 pm on Tuesday January 24.

		surveillance (Janet Hamilton, FL DOH)	2. Read Chapter 7 in McNabb and answer the three standard questions: what does it say, is it logical, do you agree? Send your answers to instructor by 5 pm on Tuesday, January 31. 3. Read CDC: Updated Guidelines for Evaluating Public Health Surveillance Systems, Recommendations from the Guidelines Working Group (Accessible at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm) and answer the three standard questions: what does it say, is it logical, do you agree? Send your answers to instructor by 5 pm on Tuesday, January 31.
Week 5 February 1, 2017	Case-based surveillance , including vital statistics (birth and death records), reportable diseases, National Notifiable Disease Surveillance System, role of CSTE	Guest lecture: Leah Eisenstein (reportable disease data management)	1. Project: present your proposed purposes for surveillance. 2. Class discussion, CDC Guidelines for surveillance system evaluation. 3. Class discussion, chapter 7, McNabb Homework: 1. Review the three talks at Syndromic Surveillance 101 module 1 at http://thci.org/syndromic101/details.aspx?aid=63183f89-983f-423d-92df-c8199879e4ff Modules 2 through 4 are optional. Answer the standard three questions about this material, and submit to the instructor by 5 pm on Tuesday, February 7. 2.Read: Centers for Disease Control and Prevention. Framework for evaluating public health surveillance systems for early detection of outbreaks; recommendations from the CDC Working Group. MMWR 2004;53(No. RR-5): pages 1-16. Answer the three standard questions about this document, and submit to the instructor by 5 pm on Tuesday, February 7. 3. Write a description (less than one page) on your proposed system design, and submit to the instructor by 5 pm on Tuesday, February 7.
Week 6 February 8, 2017	Syndromic surveillance	Hopkins; Guest lecture on ESSENCE-FL (David Atrubin, FL DOH)	Case study using syndromic surveillance (New York City part 2) Student presentations on proposed system design for their project. Homework: Students will pick one of the following topics to prepare a presentation on at the next class. Address (at a minimum) survey sampling methods, methods for collecting data, survey instrument content, and methods of analyzing, accessing and presenting the data.

			1. BRFSS history, purpose and methods http://www.cdc.gov/brfss/about/about_brfss.htm 2. BRFSS prevalence and trends analysis tool on CDC website http://www.cdc.gov/brfss/data_tools.htm. How to access Florida smoking prevalence data. 3. BRFSS WEAT analysis tool http://nccd.cdc.gov/s_broker/WEATSQL.exe/weat/index.hsql. How to access Florida smoking prevalence data 4. How to access Florida BRFSS data on current smoking through FL DOH website http://www.floridacharts.com/charts/ChronicDiseases/default.aspx 5. http://www.cdc.gov/prams/pramstat/ Mother's smoking behavior during pregnancy, West Virginia, 2011. http://www.cdc.gov/prams/pramstat/ What is PRAMS? 6. How to find past-year marijuana use for Florida, 2013-2014 from National Survey of Drug Use and Mental Health (NSDUH). What is NSDUH?
Week 7 February 15, 2017	Survey-based surveillance: BRFSS PRAMS NHANES NSDUH etc	Hopkins Guest lecture on Florida BRFSS, invited	Student presentations on BRFSS, PRAMS, and NSDUH Lecture on survey-based surveillance. Homework: 1. Required reading for next class: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/CrossCuttingI/Recommended_CSTE_Surveillanc.pdf . Address the usual three questions and submit answers to the instructor by 5 pm on Tuesday, February 21. 2. Apply the CDC surveillance system evaluation criteria to your proposed system in a preliminary formative evaluation. Indicate which criteria are most important for your system (for example, is timeliness more important than positive predictive value, or vice versa?). Should be less than one page. Turn in document by 5 pm on Tuesday, February 21.
Week 8 February 22, 2017	Evaluating a surveillance system	Hopkins	Project: student presentations on evaluation criteria for their system Lecture on surveillance system evaluation Presentation of case study on surveillance for mental health and substance abuse disorders. Read McNabb chapter 24 on data quality, and answer the three standard questions: what

			does it say, is it logical, do you agree? Turn in your answers by 5 pm on Tuesday, February 28. Project: Describe data source for your project, and refine your project case definition. Turn in this document by 5 pm on Tuesday, February 28.
Week 9 March 1, 2017	Data quality	Hopkins	Class discussion and lecture on data quality Brief student presentations on data source and surveillance case definition. Required reading: McNabb Chapter 10, on policies, standards and best practices for public health surveillance. Answer the three standard questions: what does it say, is it logical, do you agree? Turn in your answers by 5 pm on Tuesday, March 14. Project: Describe what steps you would take in your proposed surveillance system to assure data quality. Turn in document by 5 pm on Tuesday, March 14.
Week 10 March 15, 2017	Surveillance in the outbreak context	Hopkins	Case study on surveillance for infectious diseases Student presentations on how they would assure data quality. Required reading for next week: McNabb chapter 11. Answer the three standard questions: what does it say, is it logical, do you agree? Turn in your answers by 5 pm on Tuesday, March 21. Project: prepare a mock-up of what a periodic surveillance summary would look like for your proposed system, and identify the audience and frequency for that summary. Turn in your document by 5 pm on Tuesday, March 21.
Week 11 March 22, 2017	Surveillance and health security	Hopkins Guest lecture from Florida Cancer Data System (invited)	Presentation of mock-ups of surveillance summaries. Lecture on relationship of surveillance to global and national health security. Homework review: CDC Chronic Disease Surveillance indicators web site www.cdc.gov/nccdphp/CDI/overview.htm Florida Cancer Data System static web site http://fcds.med.miami.edu/inc/welcome.shtml And interactive data page https://fcds.med.miami.edu/scripts/fcdspubrates/production/doSelection.aspx?selection=map Homework assignment: Review thee three documents and, for each, identify two

			strengths and two weaknesses of (1) the data presented and (2) the method of presentation. Turn this document in by 5 pn Tuesday, March 28 Project: prepare draft of complete semester-long project following supplied outline, and submit to instructor by 5 p on Tuesday, March 28.
Week 12 March 29, 2017	Surveillance for chronic disease	Hopkins	Lecture on chronic disease surveillance Discussion of issues in preparing final project documents. Homework: Review document for states on how to prepare injury surveillance indicator data http://thci.org/syndromic101/details.aspx?aid=63183f89-983f-423d-92df-c8199879e4ff SENSOR program http://www.cdc.gov/niosh/topics/pesticides/overview.html Occupational surveillance indicators http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5601a1.htm PRAMS web site http://www.cdc.gov/prams/ Perinatal Periods of Risk (PPOR) http://www.citymatch.org/projects/perinatal-periods-risk-ppor Review these five documents and, for each, identify two strengths and two weaknesses of (1) the data presented and (2) the method of presentation. Turn this document in by 5 pm Tuesday, April 4. Revise draft final project document and submit to instructor on or before 5 pm, Tuesday April 11 Read McNabb chapter 21 and answer the three standard questions: what does it say, is it logical, do you agree? Turn in your answers by 5 pm on Tuesday, April 4.
Week 13	Surveillance for injuries and	Hopkins	Lecture: surveillance for injuries and MCH

| April 5, 2017 | MCH; Informatics and public health surveillance. | | Lecture/discussion on advances in clinical informatics and their relationship to public health surveillance

Homework: read McNabb chapters 25 and 29. For each chapter, answer the three standard questions: what does it say, is it logical, do you agree? Turn in your answers by 5 pm on Tuesday, April 11.
Homework: continue working on final paper |
| Week 14 April 12, 2017 | Predictions, modeling and PH surveillance | Hopkins | Lecture/discussion on modeling and prediction: using surveillance data and supplementing it.
Last questions on final projects

Project: turn in final presentation by 5 pm on Tuesday, April 18. Include your text, your presentation slides (no more than 10 to 12), and a mock-up of your periodic surveillance summary. |
| Week 15 April 19, 2017 | Final student presentations | All | Student presentations |

Evaluation/Grading
This course will be graded following the policies described here http://gradcatalog.ufl.edu/content.php?catoid=2&navoid=762#grades.

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0	0	0	0	0

Non-Punitive Grades and Symbols:
Zero Grade Points Not Counted in GPA

W = Withdrew
U = Unsatisfactory

The following table shows the various course requirements and their contribution to the overall course grade.

Requirement	Due date	% of final grade (must sum to 100%)
Class participation	April 20	25%
8 assignments	various	40%
Presentation of design, evaluation, and uses of data from your surveillance system	April 20	15%
Paper due	April 13	20%

Policy Related to Class Attendance

Absences must be conveyed to the course instructor in advance whenever possible, or on the day of the absence for illness or emergency. Students are expected to attend and be prepared to participate in all class sessions. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis. According to the UF Graduate School Catalog (link below) "In general, acceptable reasons for absences from class include illness, serious family emergencies, special curricular requirements, military obligation, severe weather conditions, religious holidays, and participation in official University activities. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Other reasons also may be approved." For more information on UF's attendance policy, visit http://gradcatalog.ufl.edu/content.php?catoid=2&navoid=762#attendance

Policy Related to Make-up Exams or Other Work
Make-up work will be allowed by the course instructor on an individual basis after an excused absence. Students should consult with the professor for new deadlines for assignments. For more information see http://gradcatalog.ufl.edu/content.php?catoid=2&navoid=762

Statement of University's Honesty Policy
University of Florida Academic Honesty Statements
Students and faculty will adhere to the following policies for academic honesty and honor.

"I understand that the University of Florida expects its students to be honest in all their academic work. I agree and adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."

"All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate."

"We, the members of the University of Florida, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

For more information regarding UF's policy on Academic Honesty, please visit
http://gradcatalog.ufl.edu/content.php?catoid=2&navoid=762#Academic_Honesty

For details on how suspected honor code violations will be handled, please refer to http://regulations.ufl.edu/wp-content/uploads/2012/09/4042.pdf

Citations and Plagiarism
The two key purposes of citation are to: 1) give appropriate credit to the authors of information, research findings, and/or ideas (and avoid plagiarism), and 2) facilitate access by your readers to the sources you use in your research.

Quotations: When directly quoting an outside source, the borrowed text, regardless of the amount, must be surrounded by quotation marks or block quoted. Quoted text over two lines in length should be single-spaced and indented beyond the normal margins. Every quote must include a source—the author, title, volume, page numbers, etc.—whether an internal reference, footnote, or endnote is used in conjunction with a bibliography page.

Paraphrasing or Citing an Idea: When summarizing an outside source in your own words or citing another person's ideas, quotation marks are not necessary, but the source must be included. This includes, but is not confined to, personal communications from other students, faculty

members, experts in the field, summarized ideas from published or unpublished resource, and primary methods derived from published or unpublished sources. Use the general concept of "when in doubt – cite."

Plagiarism is a serious violation of the academic honesty policy of the College. If a student plagiarizes others' material or ideas, UF Policies on Honesty and honor code violations, noted above, will be followed .

Generally speaking, the three keys of acceptable citation practice are: 1) thoroughness, 2) accuracy, and 3) consistency. In other words, be sure to fully cite all sources used (thoroughness), be accurate in the citation information provided, and be consistent in the citation style you adopt. All references should include the following elements: 1) last names along with first and middle initials; 2) full title of reference; 3) name of journal or book; 4) publication city, publisher, volume, and date; and 5) page numbers referenced. When citing information from the Internet, include the WWW address at the end, with the "access date" (i.e., when you obtained the information), just as you would list the document number and date for all public documents. When citing ideas or words from an individual that are not published, you can write "personal communication" along with the person's name and date of communication.

Statement Related to Accommodations for Students with Disabilities
If you require classroom accommodation because of a disability, you must first register with the Dean of Students Office (http://www.dso.ufl.edu/). The Dean of Students Office will provide documentation to you, which you then give to the instructor when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health
Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the UF Counseling & Wellness Center, 352-392-1575. Visit their web site for more information: http://www.counseling.ufl.edu/.

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-1161 or check out the web site at: www.health.ufl.edu/shcc.

Crisis intervention is always available 24/7 from: Alachua County Crisis Center: (352) 264-6789 or http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx

Do not wait until you reach a crisis to come in and talk to me or to these providers. Many students have been helped through stressful situations impacting their academic performance. You are not alone, so do not be afraid to ask for assistance.

Project: Student presentations on purpose(s) of proposed surveillance system.
Required reading for this class: Hopkins RS. Design and operation of local and state infectious disease surveillance systems. Journal of Public Health Management and Practice 2005; 11(3): 184-190. (will be distributed)

Homework: identify system design -- proposed data source and method of data acquisition -- for your proposed surveillance system. Write a few paragraphs and submit to instructor by 5 pm on Tuesday February 9.

Required reading: Review Syndromic Surveillance 101 module 1 at http://thci.org/syndromic101/details.aspx?aid=63183f89-983f-423d-92df-c8199879e4ff Modules 2 through 4 are optional.

Centers for Disease Control and Prevention. Framework for evaluating public health surveillance systems for early detection of outbreaks; recommendations from the CDC Working Group. MMWR 2004;53(No. RR-5): pages 1-16. Prepared by James W. Buehler, M.D., Richard S. Hopkins, M.D., J. Marc Overhage, M.D., Daniel M. Sosin, M.D., Van Tong, M.P.H.