

PHLD 9231 – Health Informatics & Decision Making

Fall 2016

COURSE SCHEDULE

Module	Subject(s) & Readings
1 (8/15-08/21)	<p>Course introduction, syllabus, assignments & logistics</p> <p>First, and foremost, introduce yourself in the folio's discussion area. Describe your relevant experience and your motivation for taking this course. This will be used for attendance verification.</p> <p>Read through the course syllabus and make sure you understand the course requirements and schedule of assignments (Both the syllabus and the schedule are in the Course Orientation Module).</p> <p>Watch the Multiple Regression in SPSS Video and share in general discussion area your experience with SPSS/Regression analysis.</p> <p>Review the "SpecificAims_example " and "SpecificAims_example 2" and the "M1_Lecture 1_research_proposal" to ascertain that you understand the requirements for this assignment.</p>

2

(08/22-08/28) **Subject: Information system basics, data, information, and informatics**

Readings:

Magnuson & O'Carroll (2014). Introduction to public health informatics. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 3-18).

Lumpkin and Magnuson. (2014). History and significance of information systems and public health. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 19-36).

Savel TG, Foldy S; CDC. (2012) The role of public health informatics in enhancing public health surveillance. *MMWR Surveill Summ*. 2012 Jul 27;61:20-24.

Kirkwood, J Jarris PE.(2012). Aligning Health Informatics Across the Public Health Enterprise *J Public Health Management Practice*, 18(3), 288–290

Araujo J, Pepper C, Richards J, Choi M, Xing J, Li W. (2009). The profession of public health informatics: still emerging? *Int J Med Inform*. 78(6):375-85.

M2 Quiz Due, Friday 9:00 AM

3

(08/29-9/04) On
campus
(meeting on
Sept 02)

Subject: Key Public Health Information Systems 1: Knowledge Based Systems & Web-based Data Query Systems (WDQS)

Readings:

IOM (Institute of Medicine). 2013. Digital dataimprovement priorities for continuous learningin

health and health care: Workshop summary. Washington, DC: TheNationalAcademies Press.

http://www.nap.edu/download.php?record_id=13424

Rambo N & Beahler CC (2010). Knowledge-Based Information Systems. In O'Carroll, Yasnoff, Ward, Ripp & Martin (eds), *Public Health Informatics & Information Systems*. (pg352-375).

Friedman DJ & Parrish RG. (2006) Characteristics, Desired Functionalities, and Datasets of State Web-based Data Query Systems. *Journal of Public Health Management and Practice JPHMP* 2(12): 119-129

Love, D, Shah G.H. (2006) Reflections on Organizational Issues in Developing, Implementing, and Maintaining State Web-based Data Query Systems. *Journal of Public Health Management and Practice JPHMP* 2(12): 184-188

Shah GH, Leep C, Alexander D. Profile-IQ: Web-Based Data Query System for Local Health Department Infrastructure and Activities. *Journal of Public Health Management and Practice*. 2014. 2014 Mar-Apr;20(2):168-74. doi: 10.1097/PHH.0b013e3182a1beb7.

Informatics Tool: HCUPnet

“HCUPnet is a free, on-line query system based on data from the Healthcare Cost and Utilization Project (HCUP). It provides access to health statistics and information on hospital inpatient and emergency department utilization.” ONLINE AT: <http://hcupnet.ahrq.gov/>

(9/05-9/11)

Readings:

Magnuson et al. (2014). Public Health Information Standards. In

Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 133-154). [New chapter; not in O'Carroll Book]

Hammond WE (2005). Themaking and adoptionofhealth data standards.Health Affairs.
24(5):1205-1213.

Chute CC(2000). Clinical classification terminology: somehistoryand current observations. JAMIA.
7(3): 298-303.

CiminoJJ. (1996). Codingsystems in healthcare.Methods ofInformation in Medicine. 35:273-4.

Glossary ofPublicHealthInformatics Organizations, Activities, andTerms (Adapted from**NACCHO (PowerPointslides) Theory:Grounded Theory**

Borycki E, Kuziemyky C, Cummings E et al. (2011). Use of Grounded Theory in Health Informatics. 23rd International Conference of the European Federation for Medical Informatics User Centered Networked Health Care - A. Moen et al. (Eds.) MIE 2011 / CD / Workshops.

Urquhart, C., & Fernández, W. (2013). Using grounded theory method in information systems: the researcher as blank slate and other myths. *Journal of Information Technology*, 28(3), 224-236.

Assignment:**Research proposal deliverable 1 due on 09/11****M4 Quiz Due, Friday 9:00 AM**

5 **Subject:KeyPublicHealthInformation Systems 2 : VitalStatistics &Morbidity Data**

(9/12-09/18)

Readings:

Rothwell et al. (2014). TheNationalVital Statistics System.In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 309-328). [New Chapter]

Hopkins & Magnuson (2014). Informatics in Disease Prevention and Epidemiology.In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 257-276). [New Chapter]

Merrick et al (2014). Public Health Laboratories.In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 295-308). [New Chapter]

Reichman NE&Schwartz-Soicher O. (2007). Accuracy of birth certificate data by risk factors and outcomes: analysis of data from New Jersey.American Journal of Obstetrics &Gynecology.

Method:Probabilistic Record Linkage

Shah GH,LertwacharaK, &AyansoA. (2010). RecordLinkagein Healthcare: applications, opportunities, and challengesforPublicHealth.*InternationalJournal ofHealthcare Delivery Reform Initiatives*, 2(3):28-46.

M5 Quiz Due, Friday 9:00 AM

6 Subject: Key Public Health Information Systems 2: Syndromic Surveillance & Toxicology

(9/19-9/25)

Readings:

Garrett N. (2014). Setting National Policies and Standards for Immunization Information Systems. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 355-371). [New Chapter]

Kilbourne, E. (2014). Informatics in Toxicology and Environmental Public Health. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 277-293). [New Chapter]

Henning KJ (2004). What is syndromic surveillance? *MMWR*. 53:7-11.

Siegrist D & Pavlin J (2004). Bio-ALIRT Biosurveillance Detection Algorithm Evaluation. *MMWR* 53:152-158.

Jackson ML et al. (2007). A simulation study comparing aberration detection algorithms for syndromic surveillance. *BMC Medical Informatics & Decision Making*. 7(6).

RAND. Syndromic Surveillance: An Effective Tool for Detecting Bioterrorism?

http://www.rand.org/content/dam/rand/pubs/research_briefs/2005/RB9042.pdf

NACCHO Webinar: <http://www.naccho.org/events/surveillance-webinar.cfm> at the archive site

Method: Practice-based research

Mays, Glen P. Gulzar H. Shah and Kay Lovelace. (2012). Practice Based Research in Public

Health. *NACCHOExchange: Promoting Effective Local Public Health Practice*. 11(1) 1-5.

Shah, Gulzar H., Glen Mays, and Kay Lovelace. (2012). Diffusion of Practice-based Research in Local Public Health: What Differentiates Adopters from Non-Adopters? *Journal of Public Health Management and Practice JPHMP*.

Assignment:

Research proposal deliverable 2 due on 09/25

M6 Quiz Due, Friday 9:00 AM

7

(9/26-10/2) On
campus
(meeting on
Sept 30)

Subject: Security, Privacy & Safety

Readings:

Yasnoff, W.A. (2014). Privacy, Confidentiality, and Security of Public Health Information. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer. (p. 155-172). [New Chapter]

Ash, J. S., Berg, M., & Coiera, E. (2004). Some unintended consequences of information technology in health care: the nature of patient care information system-related errors. *JAMIA*,

11(2), 104-12.

Rudolph, B. Shah, G.H., Love D. (2006). Small Numbers, Disclosure Risk, Security and Reliability Issues in Web-based Data Query Systems. *Journal of Public Health Management and Practice JPHMP* 2(12): 176-183

Theory: Theoretical framework for public health agency performance

Handler A, Issel M, Turnock B. A conceptual framework to measure performance of the public health system. *Am J Public Health*. 2001 Aug;91(8):1235-9.

8

(10/3-10/09)

Subject: Key Public Health Information Systems 4: Morbidity, Risk Factors and Utilization**Readings:**

Tomines, A. (2014). Risk Factor Information Systems. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer. (p. 329-353). [New Chapter]

Blewett LA & Davern M. (2006) Meeting the need for state-level estimates of health insurance

coverage: use of state and federal survey data. *Health Services Research* 41(3):946-975.

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, & web survey services. *J of Computer-Mediated Comm* 10(3).

Bonomi AE et al. (2006) Ascertainment of intimate partner violence using two abuse measurement frameworks. *Injury Prevention* 12:121-124.

Gilchrist VJ et al (2004). A Comparison of the National Ambulatory Medical Care Survey

(NAMCS) Measurement Approach With Direct Observation of Outpatient Visits. *Medical Care*.

42(3):276-280.

Theory: Diffusion of Innovations

Dearing JW. (2009). Applying Diffusion of Innovation Theory to Intervention Development. Res

Soc Work Pract. 2009 Sep 1;19(5):503-518.

M8 Quiz Due, Friday 9:00 AM

9

Subject: Introduction to Clinical HIT

(10/10-10/16)

Readings:

Fu, P., Tomines, A., & Dickey, L. (2014). Delivery of Preventive Medicine in Primary Care. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer. (p. 469-488). [New Chapter]

Park T. (2011). "Information Liberation: Changing Behavior and Changing Policies" YouTube

Video by Todd Park, U.S. Chief Technology Officer

(http://www.youtube.com/watch?v=n4WpQGfPt_E)

Park T. (2012) "Use Of Health Informatics by Doctors, Employers and Hospitals In Cincinnati", YouTube Video Todd Park, U.S. Chief Technology Officer at TEDMED 2012

(<http://www.youtube.com/watch?v=c-p8lx7o8Yw>)

Chopra A, & Mostashari F. (2011). "Aneesh Chopra & Farzad Mostashari at TEDMED 2011"

YouTube Video at <http://www.youtube.com/watch?v=ALGkuIZ2MMk>

Tang, P. C., Ash, J. S., Bates, D. W., Overhage, J. M., & Sands, D.Z. (2006). Personal Health Records: Definitions, Benefits, and Strategies for Overcoming Barriers to Adoption. J Am Med Inform Assoc, 13(2), 121-126.

Jamal, A., McKenzie, K., & Clark, M. (2009). The impact of health information technology on the quality of medical and health care :a systematic review. *Health Information Management Journal*, 38(3), 26-37.

Kazley, A.S.&Ozcan, Y.A. (2008). Do hospitals with electronic medical records (EMRs) provide higher quality care? *Medical Care Research & Review*, 65(4): 496-513.

Theory: Technology, Organization, Environment (TOE) Framework

Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: across-country assessment of the facilitators and inhibitors. *European Journal of Information Systems*, 12(4), 251.

M9 Quiz Due, Friday 9:00 AM

10 **Subject: Management of IT/IS: Project Management Strategy & Implementation**

(10/17-10/23)

Readings:

Glaser, J.P., & Salzberg, C. (2011). *The Strategic Application of Information Technology in Health Care Organizations*. 3rd Ed. Chapters 1&2. Jossey-Bass.

McLaughlin D.B. & Hays J.M. (2008). Project management. In *Healthcare Operations Management*. (pg 100-135).

Aspevig, J. (2014). Project Management and Public Health Informatics. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer. (p. 211-231). [New Chapter]

Kaplan, B., & Harris-Salamone, K. D. (2009). Health IT Project Success and Failure: Recommendations from Literature and an AMIA Workshop. *J Am Med Inform Assoc*, 16(3), 291-299.

Vest JR, Menachemi N, Ford EW. (2012). Governance's role in local health departments' information system and technology usage. *Journal of Public Health Management & Practice*. 18(2):160-68.

Method:The Balanced Scorecard

Hasan H & Tibbits H. (2000). Strategic management of electronic commerce: an adaptation of the balanced scorecard. *Internet Research: Electronic Networking Applications and Policy*. 10(5): 439-450.

Assignment:

Summary data from a public health information system due On 10/23

M10 Quiz Due, Friday 9:00 AM

*** 11***

Subject:Policy/meaningful use of EHRs/Regional Extension Centers(I)

(10/24-10/30) On campus (meeting on Oct. 28)

Magnuson, J.A. (2014). Public Health Informatics: The Path Forward. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 647-652). [New Chapter]

Galbraith, Kyle. (2013)What's So Meaningful about Meaningful Use?Hastings Center Report. 43(2): 15-17

McBrideM.(2012) 6 thingsyou need to know about theMU2 final rule.Important meaningful use revisions--some optional, somemandatory--willbe effective as early as January1. Med Econ. 89(18):58-61

Wright A, Henkin S, Feblowitz J, McCoy AB,Bates DW, Sittig DF.(2013). Early results of the meaningful use program for electronic health records.N Engl JMed. 2013 Feb 21;368(8):779-80.

SheaCM, MaloneR, Weinberger M, ReiterKL, Thornhill J, Lord J, Nguyen NG, WeinerBJ. (2013). Assessing Organizational Capacity for Achieving Meaningful Use of Electronic Health Records. *Health Care Manage Rev*. 2014 Apr-Jun; 39(2): 124–133.

CherryBJ, Ford EW, PetersonLT. (2011).Experiences with electronic health records: early adopters in long-term care facilities. *Health CareManageRev*. 36(3):265-74. doi:10.1097/HMR.0b013e31820e110f.

Dimick C. (2011). RECs on a mission. Assessing the Regional Extension Center program. *Source*. JAHIMA. 2011 Nov-Dec;82(11):26-30.

Theory:The Health Belief Model

NancyK. Janz,and MarshallH. Becker.(1984).The Health Belief Model:A Decade Later. Health Education Quarterly 11(1):1-47.

No Quiz

12 **Subject:Policy/meaningful use of EHRs/Regional Extension Centers(II)**

(10/31-11/06)

Readings:

Foldy, S. (2014). National Public Health Informatics, United States.In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer; 2014. (p. 573-601). [New Chapter]

Hogan, S.O. &Kissam,S.M. (2010). Measuring meaningful use. Health Affairs. 29(4):601-606.

Halmaka, J.D. (2010). Makingthe most of federal health information technology regulations. Health Affairs. 29(4):596-600.

Hillestad, R., Bigelow, J. H., Chaudhry, B., Dreyer, P., Greenberg, M. D., Meili, R. C., et al. (2008). IDENTITY CRISIS: An Examination of the Costs and Benefits of a Unique Patient Identifier for the U.S. Health Care System. Santa Monica, CA: RAND Corporation. Summary.

iHeathbeat. (2008). Privacy Advocates Reject Unique Patient Identifier Study.
<http://www.ihealthbeat.org/features/2008/privacy-advocates-reject-unique-patient-identifier-study.aspx?p=1>

Brand B. (2011) TheHITECH Act and Meaningful Use –Implications for Population and Public Health: Meaningful Use for Public Health Professionals: Basic Training.Meaningful Use for Public Health Professionals:Basic Training.Online at
<http://www.cdc.gov/EHRmeaningfuluse/docs/MU%20Boot%20Camp%20Obj%201.pdf>

Theory:Institutional theory

Scott WR. (2003). Organizations: Rational, Natural, and Open Systems. PrenticeHall. 5th ed. pages 134-141.

M11 Quiz Due, Friday 9:00 AM**13 Subject: Evaluation 1: Organizations' & Individuals' Needs for Information**

(11/07-11/13)

Readings:

Fu, P., Tolentino, H., & Franzke, L. (2014). Evaluation for Public Health Informatics. In Magnuson JA, Fu PC. (Eds). *Public Health Informatics and Information Systems*. London: Springer. (p. 233-254). [New Chapter]

Haggard LM, Burnett SJ. (2006) Measuring the impact of a Web-based data query system: the logic model as a tool in the evaluation process. *J Public Health Manag Pract*. 2006 Mar-Apr;12(2):189-95.

Elson, R. B., Faughnan, J. G., & Connelly, D. P. (1997). An industrial process view of information delivery to support clinical decision making: implications for systems design and process measures. *J Am Med Inform Assoc*, 4(4), 266-278.

Revere, D., et al. (2007). Understanding the information needs of public health practitioners: a literature review to inform design of an interactive digital knowledge management system. *J Biomed Inform*, 40(4), 410-421.

McKnight, L. K., Stetson, P. D., Bakken, S., Curran, C., & Cimino, J. J. (2002). Perceived Information Needs and Communication Difficulties of Inpatient Physicians and Nurses. *J Am Med Inform Assoc*, 9(90061), S64-69.

Choo C.W. (1996). The knowing organization: How organizations use information to construct meaning, create knowledge and make decisions. *International Journal of Information Management*. 16(5), 329-340.

Theory: Theory of Professional Information Seeking

Leckie, G. J., Pettigrew, K. E., & Sylvain, C. (1996). Modeling the information seeking of professionals: a general model derived from research on engineers, healthcare professionals, and lawyers. *Library Quarterly*, 66(2), 161-193.

Tool: Logic Model

Cooksy, L. J., Gill, P., & Kelly, P. A. (2001). The program logic model as an integrative framework for multimethod evaluation. *Evaluation and Program Planning*, 24, 119-128.

Research proposal deliverable 3 due on 11/13**M13 Quiz Due, Friday 9:00 AM**

14

(11/14-11/20)

Subject: Evaluation 2: Evaluation & Measurement**Readings:**

Burton-Jones, A., & Straub, D. W. (2006). Reconceptualizing system usage: An approach and empirical test. *Information Systems Research*, 17(3), 228-246.

Devaraj, S., & Kohli, R. (2003). Performance impacts of information technology: is actual usage the missing link. *Management Science*, 49(3), 273-289.

Van Der Meijden, M. J., Tange, H. J., Troost, J., & Hasman, A. (2003). Determinants of success of inpatient clinical information systems: a literature review. *J Am Med Inform Assoc*, 10(3), 235-243

Theory: DeLone & McLean Success Model

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information

Systems Success: A Ten-Year Update. [Article]. *Journal of Management Information Systems*,

19(4), 9-30.

M14 Quiz Due, Friday 9:00 AM

15

(11/21-11/27)

NO CLASS - Thanksgiving Holiday

16

(11/29-12/4) On campus (meeting on **Dec 2**) **Subject: Organizational accountability and patient satisfaction**

- Kabene Chpt 8 (Health Service Quality ...)
- Gamm, LD. (1996). *HCMR*. 21(2): 74-86.

- Kazley, AS, et al (2012). Hlth Care Mgmt Rev, 37(1):23-30.
- McCullough, JS, et al (2010) Health Aff, 29(4), 647-654

17

(12/05-12/11)

Final Exam: Open Book Essay Style.

The exam will be timed for 3 hours. It will be made available **on Monday 12/05 at 12:00 AM (midnight)**

and must be submitted through **Folio** by **midnight of Tuesday 12/06** (by 11:59 PM; that provides about 48 hours).