



DEPARTMENT: University of Georgia, College of Public Health, Epidemiology & Biostatistics

COURSE NUMBER: EPID 7450E **SECTION NUMBER:** 1

CREDIT HOURS: 3 **SEMESTER:** Spring 2021

COURSE TITLE: [Transforming Public Health Surveillance](#)

CLASS LOCATION: Asynchronous, online with one synchronous session 17:30 – 18:50 each Monday

START/END: [13 JAN – 11 MAY](#)

INSTRUCTOR'S NAME: [Scott JN McNabb, PhD, MS](#); Affan Shaikh, MPH; and Caroline Baer, MPHc

INSTRUCTOR CONTACT INFORMATION

EMAIL:
scottjnmcnabb@emory.edu

EMAIL: ashaikh@publichealthpractice.com

PHONE: 404.725.8000

PHONE: 770.376.5890

EMAIL: cebaer@emory.edu

PHONE: 864.616.0590

MANDATORY OFFICE HOURS: Monday 17:30 – 18:50 EST

COURSE DESCRIPTION

[Transforming Public Health Surveillance \(TPHS\)](#) provides a review of the history, purposes, activities, uses, elements, data sources, models, analyses, actions, reports, evaluation, and ethical and legal issues of public health surveillance (PHS). It helps students understand the critical importance of the direct association between PHS and public health action, plus develop skills and competencies with the use of data-information-messages and the information and communication technologies that enable, enhance, and empower them. TPHS describes informatics approaches to enable and enhance data sharing, analytics, and visualization through interoperability that adapts to meet the challenges as PHS moves from analog to digital and demonstrates how PHS core functions (i.e., detection, registration, confirmation, analysis, feedback, communication, and response) will be enabled, enhanced, and empowered by these opportunities.

COURSE STRUCTURE

The 3-credit hour course is taught over 40-contact hours of on-line instruction, problem solving, and practical application in a 15-week period (c.f., day-by-day agenda).

RECOMMENDED TEXT

Transforming Public Health Surveillance Editors: SJN McNabb, J Mark Conde, L Ferland, W MacWright, Z Memish, S Okutani, M Park, P Ryland, A Shaikh, and V Singh. 2016 Elsevier ISBN: 978-0-7020-6337-4 E-ISBN: 978-0-7020-6621-4

COURSE GOALS & LEARNING OBJECTIVES

Goals

- Understand the principles and practice of public health surveillance (PHS), including how to establish a PHS program, how to collate and analyze data, and how to prepare and distribute a report
- Become familiar with various PHS models (e.g., syndromic, case- or indicator-based, predictive, sentinel, participatory, surveys, registries)
- Recognize the importance of the interdependence of PHS and public health action
- Become familiar with importance of information and communication technology (ICT) requirements and laboratory inputs
- Understand how to evaluate PHS
- Become familiar with PHS in developed and underserved countries

Learning Objectives

- Define PHS
- Describe and give examples of PHS types
- Explain and define different PHS terms
- Identify uses and state PHS objectives
- Describe the relationship between PHS and decision making
- List and describe data collection sources, methods, and models of PHS
- Identify key points in the development of PHS
- Describe the current state of PHS and its challenges
- Describe the different types and approaches used for conducting PHS
- Understand the benefits and limitations to public health data from differing types of PHS
- Describe the differences between vertical and integrated PHS
- Explain situations in which vertical PHS is warranted
- Explain the challenges involved with implementing vertical and integrated PHS
- Describe the role of integrated PHS in Early Warning & Response
- Describe the health system gains of integrating various PHS
- Describe the need for workforce development and capacity strengthening in epidemiology and its impact on PHS
- Determine how to prepare PHS data into a report for various audiences
- Describe the methods of evaluating PHS
- Compare and contrast PHS at international, national, state, and local levels
- Explain the role and limitations of surveys to PHS

- Explain how 21st century challenges to PHS present both an opportunity for innovation and a necessity for transformation
- Describe the evolution of PHS, including Integrated Disease Surveillance and Response (IDSR) and the challenges
- Describe the different types and approaches for conducting PHS
- Demonstrate how ICT can improve the collection, analysis, and visualization of PHS data
- Describe the importance of big data, the internet, and social media for proactive PHS structures and systems
- Explain the most commonly used methods for evaluating PHS, as well as new models
- Describe the need and challenges of determining ROI, cost utility, cost effectiveness, and cost benefit analysis
- Describe recent outbreaks and the weaknesses they have demonstrated in national and international PHS
- Describe the importance, obligation, and authority mandated by domestic and global PHS governance
- Identify obstacles to sharing data and samples and how these barriers should be removed
- Define One Health and its importance to PHS
- Define bio-surveillance and how it supports PHS
- Recognize the importance and benefits of engaging communities in PHS
- Identify the current efforts by the international community and WHO on interoperability and standards
- Describe current approaches and advances in data manipulation and data visualization
- Describe an optimal process for policy makers, PHS personnel, and academic modelers to collaboratively inform policy decisions
- Explain the use of PHS to monitor the quality and capacity of health services, identify underserved populations, and inform new research priorities for ensuring health equity
- Describe future challenges that need to be addressed for continued success in the transformation of PHS
- Describe the technical and policy solutions that can be developed to transform PHS with an equity focus to strengthen efforts for global disease control, elimination and eradication, which leads to sustainable development
- Describe the need for workforce development and capacity strengthening in epidemiology and its impact on public health surveillance

Evaluation

The final grade will be determined as follows:

Performance Areas	% Final Grade
Class participation	30%
Student paper (minimum 1000 words)	30%
Final examination	35%
Class attendance	5%

Course Grading Scale

96 and above	A
90-95	A-
87-89	B+
83-86	B
80-82	B-
77-79	C
76 or below	F

Class participation (30%)

Students are expected to participate fully. Each student will be expected to contribute in the working groups, including group planning sessions. Unexcused absences will count against the final grade performance.

Student paper (minimum 1000 words) (30%)

Due 11:59pm on the last session of class before midterm break, students should choose one of these six topics and write an original paper while properly referencing it.

- Take a position for or against the statement ***public health information should be available as a legal right, when it's needed, where it's needed.***
- Write a careful and thoughtful analyses of Figure #3 in the book titled, ***Transforming Public Health Surveillance*** on types of data needed during different times/seasons/moments in the life of an epidemiologist.
- Write a careful and thoughtful analyses of the impediments and solutions to ***One Health.***
- Write a careful and thoughtful analyses of Figure #2 titled, ***Key Principles of e-Surveillance*** in the book titled, ***Transforming Public Health Surveillance.***

·Write a careful and thoughtful analyses of the impediments and potential improved health outcomes by providing internet access to all Africa.

·Write a careful and thoughtful analyses of how to strengthen the existing IHR framework.

Final examination (35%)

The final exam will be posted with clear guidelines on how and when to take it.

Class attendance (5%) Students are expected to watch each module.

COURSE CALENDAR

Week 1 – Vision of Transformed Public Health Surveillance (PHS) – Jan 13

Learning Objectives

- Define public health surveillance (PHS)
- Describe and give examples of PHS types
- Explain and define different PHS terms
- Identify uses and state the objectives for conducting PHS
- Describe the relationship between PHS and decision making
- List and describe data collection sources, methods, and models of PHS
- Demonstrate how ICT can improve the collection, analysis, and visualization of PHS data

Modules

The Next Generation of Public Health Surveillance by Scott McNabb, PhD, MS

Recommended Readings

McNabb et al. “**The Next Generation of Public Health Surveillance**” in *Transforming Public Health Surveillance*. Pg 1-10

Thacker, SB and DF Stroup. “Future Directions for Comprehensive Public Health Surveillance and Health Information Systems in the United States.” *American Journal of Epidemiology* 140, no. 5 (September 1, 1994): 383–97.

Assignments

- Introduce Yourself
- Session Evaluation
- Case Study 1 – Establishing PHS in a Refugee Setting

Week 2 – Current State I – History and Concepts – Jan 18

Learning Objectives

- Identify key points in the development of PHS
- Describe the current state of PHS and its challenges
- Describe the different types and approaches used for conducting PHS
- Understand the benefits and limitations to public health data from differing types of PHS

Modules

Foundations of Public Health Surveillance by Paige Ryland, MPH

	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·Rolak, H., and Contreary, K. et al. “Past Contributions” in Transforming Public Health Surveillance. Pg 13 ·“60 Years of Public Health Science at CDC.” MMWR 55(02). December 22, 2006. http://www.cdc.gov/mmwr/pdf/wk/mm55su02.pdf ·Nsubuga, P, O Nwanyanwu, JN Nkengasong, D Mukanga, and M Trostle. “Strengthening Public Health Surveillance and Response Using the Health Systems Strengthening Agenda in Developing Countries.” <i>BMC Public Health</i> 10, no. Suppl 1 (December 3, 2010): S5. doi:10.1186/1471-2458-10-S1-S5. ·McNabb SJN, S Chungong, M Ryan, T Wuhib, P Nsubuga, W Alemu, V Carande-Kulis, and G Rodier. “Conceptual Framework of Public Health Surveillance and Action and its Application in Health Sector Reform.” <i>BMC Public Health</i> 2002,2:2 ·Nsubuga P, N Eseko, T Wuhib, N Ndayimirije, S Chungong, and SJN McNabb. “Structure and Performance of Infectious Diseases Surveillance and Response, United Republic of Tanzania, 1998.” <i>Bull WHO</i> 2002;80:196-203 ·McNabb SJN “Comprehensive Effective and Efficient Global Public Health Surveillance.” <i>BMC Public Health</i> 2010: 10(Suppl 1):S3 ·Principles & Practice of Public Health Surveillance, 3rd Edition, Edited by Lee, Teutsch, Thacker, and St. Louis, Published by Oxford University Press, 2010 <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 3 – Current State II – Supply and Demand of Workforce – Jan 25

<p>Learning Objective</p> <ul style="list-style-type: none"> ·Describe the need for workforce development and capacity strengthening in epidemiology and its impact on PHS 	<p>Modules</p> <ul style="list-style-type: none"> ·Supply and Demand of the Public Health Workforce by Jeffrey Engel, Peter Nsubuga <p>Recommended Readings</p> <ul style="list-style-type: none"> ·Nsubuga, P., Engel, J. et al. “Supply and Demand for the Public Health Workforce” in Transforming Public Health Surveillance. Pg 99 <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 4 – Current State III – Reactive vs Proactive – Feb 1

Learning Objectives

- Describe the differences between proactive and reactive PHS
- Articulate how Electronic Health Records (EHRs) enable proactive PHS
- Describe the importance of big data, internet, and social media for upcoming proactive surveillance structures and systems
- Identify a health-related scenario (other than HIV) in which genetic PHS could be applied and describe specific analyses, possible genomic patterns that define populations by geography and risk behavior, and subsequent inferences
- Discuss the benefits of using genetic PHS to guide disease prevention and control programs and policies
- Discuss how descriptive, predictive, and prescriptive analytics provide actionable information to public health professionals
- Identify and discuss the importance of each of the building blocks of public health analytics
- Describe potential economic and logistical barriers to effectively analyzing and using electronic PHS data
- List the primary considerations of predictions in a predictive PHS
- Identify a health-related scenario and discuss what types of data and analyses would be useful to develop a predictive PHS

Modules

- **Models of Public Health Surveillance** by Meeyoung Park

Recommended Readings

- Richards, *et al.* “**Models of Public Health Surveillance**” in Transforming Public Health Surveillance. Pg 32

Assignments

- Session Evaluation

Week 5 – Current State IV – Integrated vs Vertical – Feb 8

Learning Objectives

- Describe the differences between vertical and integrated PHS
- Explain situations in which vertical PHS is warranted
- Explain the challenges involved with implementing vertical and integrated PHS
- Describe the role of integrated disease surveillance and response (IDSR) in early warning & response
- Describe the health systems gains of integrating PHS

Modules

- Integrated versus Vertical Public Health Surveillance** by Vivek Singh
- CDC Perspectives and Strategy on Emerging Public Health Surveillance Issues and Opportunities** by Chesley L. Richards

Recommended Readings

- Singh, V., *et al.* “**Integrated versus Vertical Public Health Surveillance Systems**” in Transforming Public Health Surveillance. Pg 50
- Richards, C., *et al.* “**CDC Perspectives and Strategy on Emerging Public Health Surveillance Issues and Opportunities**” in Transforming Public Health Surveillance. Pg 24

	<p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
<p>Week 6 – Current State V – Evaluation – Feb 15</p>	
<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Explain the most commonly used methods for evaluation of PHS, as well as, the newly introduced models ·Describe the Work Process Analysis evaluation framework ·Articulate the elements of PHS evaluation unaccounted for within the CDC’s guidelines and the need for a new approach 	<p>Modules</p> <ul style="list-style-type: none"> ·Reactive versus Proactive Public Health Surveillance by Joy Sylvester ·New Evaluation Methods for Public Health Surveillance by Isabelle Devaux and Ngozi Erundu

	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·Erondy, E. “New Public Health Surveillance Evaluation Model” in Transforming Public Health Surveillance. Pg 69 ·Devaux, I. et al. “New Matrix for Evaluatio of Public Health Surveillance Systems” in Transforming Public Health Surveillance. Pg 81 ·McNabb SJN, A Surdo, A Redmond, J Cobb, J Wiley, S Chakrabarti, H Duncan, N Qualls, and M Moore.”Applying a New Conceptual Framework to Evaluate Public Health Surveillance and Action, Hillsborough County, Florida, 2002.” Ann Epidemiol 2004;14(9):640-45 ·Center for Disease Control and Prevention. “Framework for Evaluating Public Health Surveillance Systems or Early Detection of Outbreaks Recommendations from the CDC Working Group.” MMWR 2004. 53 (RR-5) ·Centers for Disease Control and Prevention. “Updated Guidelines for Evaluation Public Health Surveillance Systems: recommendations for the Guidelines Working Group.” MMWR 2001: 50 (RR-13). ·Wuhib T, TL Chorba, V Davidiants, W MacKenzie, and SJN McNabb. “Assessment of the Infectious Diseases Surveillance System of the Republic of Armenia: an Example of the Surveillance Systems in the Republics of the Former Soviet Union.” BMC Public Health 2002.2:3 <p>Assignments</p> <ul style="list-style-type: none"> ·Case Study – Evaluation of PHS during Chikungunya Outbreak ·Session Evaluation
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Week 7 – Governance Unlocks Transformation I – Feb 22

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Describe the importance, obligation, and authority mandated by PHS governance ·Identify gaps and solutions for governance of global PHS ·Describe recent outbreaks and the weaknesses they have demonstrated in national and international public health surveillance systems ·Describe how an outbreak can impact the world economy 	<p>Modules</p> <ul style="list-style-type: none"> ·Keeping Our World Safe by Integrating Public Health and Global Security by Scott JN McNabb ·Global Public Health Surveillance, Governance, and Viral Sovereignty by Scott JN McNabb
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	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·Chungong, S. “Policies, Standards, and Best Practices for Public Health Surveillance” in Transforming Public Health Surveillance. Pg 115 ·Heymann, D. “Keeping Our World Safe by Integrating Public Health and Global Security” in Transforming Public Health Surveillance. Pg 126 ·WHO International Health Regulations (2005).” <i>WHO</i>. http://www.who.int/ihr/9789241596664/en/index.html. ·McNabb, SJN et al. “Triumphs, Trials, and Tribulations of the Global Response to MERS Coronavirus.” <i>The Lancet. Respiratory Medicine</i> 2, no. 6 (June 2014): 436–37. doi:10.1016/S2213-2600(14)70102-X. ·Zumla, AL, et al. “Middle East Respiratory Syndrome in the Shadow of Ebola.” <i>The Lancet. Respiratory Medicine</i> 3, no. 2 (February 2015): 100–102. doi:10.1016/S2213-2600(14)70316-9. <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 8 – Governance Unlocks Transformation II – Mar 1

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Describe global best practices for PHS governance ·Identify appropriate ethical considerations on both the individual and population levels ·Identify why countries may be hesitant to share data and samples and how these barriers should be removed. ·Identify gaps and impediments in the governance for domestic and global PHS and propose interventions 	<p>Modules</p> <ul style="list-style-type: none"> ·Impact of Governance on Eradication and Elimination by Affan Shaikh
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	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·Shaikh, A. et al. “Smart Governance for Public Health Surveillance” in Transforming Public Health Surveillance. Pg 150 ·Nuzzo, J. et al. “Achieving the Right Balance in Governance of Public Health Surveillance” in Transforming Public Health Surveillance. Pg 169 ·Armstrong KE, SJN McNabb, LD Ferland, T Stephens, A Muldoon, JA Fernandez, and S Ostroff. “Capacity of Public Health Surveillance to Comply with Revised International Health Regulations, USA.” Emerg Infect Dis 2010;16(5):May 2010 ·Memish ZA, SJN McNabb, F Mahoney, F Alrabiah, N Marano, QA Ahmed, J Mahjour, RA Hajjeh, P Formenty, FH Harmanci, H El Bushra, TM Uyeki, M Nunn, N Isla, M Barbeschi, and the Jeddah Hajj Consultancy Group. “Establishment of Public Health Security in Saudi Arabia for the 2009 Hajj in Response to Pandemic Influenza A (H1N1).” Lancet 2009;374:1786-91 <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
<p>Week 9 – Student Paper – Mar 8</p>	
	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·Iskander JK, Wolicki SB, Leeb RT, Siegel PZ. Successful Scientific Writing and Publishing: A Step-by-Step Approach. [Erratum appears in Prev Chronic Dis 2018;15. http://www.cdc.gov/pcd/issues/2018/18_0085e.htm.] Prev Chronic Dis 2018;15:180085. DOI: http://dx.doi.org/10.5888/pcd15.180085

	<p>Assignments</p> <p>Students should choose one of these six topics and write an original paper while properly referencing it.</p> <ul style="list-style-type: none"> ·Take a position for or against the statement <i>public health information should be available as a human right, when it's needed, where it's needed.</i> ·Write a careful and thoughtful analyses of Figure #3 in the book titled, Transforming Public Health Surveillance on types of data needed during different times/seasons/moments in the life of an epidemiologist. ·Write a careful and thoughtful analyses of the impediments and solutions to <i>One Health</i>. ·Write a careful and thoughtful analyses of Figure #2 titled, <i>Key Principles of e-Surveillance</i> in the book titled, Transforming Public Health Surveillance. ·Write a careful and thoughtful analyses of the impediments and potential improved health outcomes by providing internet access to all Africa. ·Write a careful and thoughtful analyses of how to strengthen the existing IHR framework.
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Week 10 – Collaboration Fuels Transformation I (One Health) – Mar 15

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Define “one health” and its importance to PHS future ·Identify current efforts and systems that use “one health” ·List examples demonstrating the intersection between human, animal, and environmental health 	<p>Modules</p> <ul style="list-style-type: none"> ·Public Health Surveillance Collaborations from a CDC by Michael F. Iademarco ·One Health for the 21st Century by Victor Del Rio Vilas <p>Recommended Readings</p> <ul style="list-style-type: none"> ·Mazet, J., <i>et al.</i> “One Health in the Twenty-first Century.” in <i>Transforming Public Health Surveillance</i>. Pg 181 <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 11 – Collaboration Fuels Transformation II – Mar 29

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Describe current approaches and advances in data manipulation and data visualization ·Describe how machine learning approaches are relevant to PHS ·Define the impact of ICT on collaboration 	<p>Modules</p> <ul style="list-style-type: none"> ·Contributions of Military Public Health Surveillance to Global Public Health Security by Paige Ryland ·Nonprofit Associations and Cultivating Collaboration to Advance Public Health Surveillance by Laura C. Streichert
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- Define the three types of interoperability and its importance to PHS
- Identify the current efforts by the international community and WHO on interoperability and system standards
- Describe gaps and impediments to collaboration
- Define Biosurveillance and how it supports and differs from PHS
- Describe the DOD's future vision for Biosurveillance and how they plan to achieve this vision
- Describe the role that military can and has played in public health
- Identify the US DoD's current initiatives to improve collaboration and information sharing
- Explain the role and importance of associations in PHS
- List different types of associations
- Describe the importance of clinicians and clinical facilities to PHS
- Define the differing priorities that often exist between clinicians or clinical facilities and public health units, and how these differing priorities can present challenges to achieving optimum PHS data
- Describe possible actions that can be used to enhance the relationship between clinical medicine and public health practitioners to strengthen PHS

Recommended Readings

- Russel, K., *et al.* "**Contributions of Military Public Health Surveillance to Global Public Health Security**" in Transforming Public Health Surveillance. Pg 206
- Streichert, L., *et al.* "**Nonprofit Associations and Cultivating Collaboration to Advance Public Health Surveillance.**" in Transforming Public Health Surveillance. Pg 223

Assignments

- Session Evaluation

Week 12 – Informatics Enables Transformation I – Apr 5

Learning Objectives

- Define new tools and approaches for PHS analytics
- Identify strengths and weaknesses of various analytic approaches
- Discuss the balance of key attributes in PHS
- Identify potential sources of error in PHS
- Describe best practices for validation and verification of PHS
- Explain how transmission models can be used to inform disease prevention and control programs
- Describe and compare different classes of transmission models

Modules

- Public Health Surveillance and Informatics** by Jennifer Ward
- Interoperability and Standards for Public Health Surveillance** by Joy Sylvester
- Governance Issues in Public Health Surveillance Informatics** by Brian Dixon

Recommended Readings

- Lazarus R, M Klompas, FX Campion, SJN McNabb, X Hou, J Daniel, G Haney, A DeMaria, L Lenert, and R Platt. "**Electronic Support for Public Health: Validated Case Finding and Reporting for Notifiable Diseases using Electronic Medical Data.**" [JAMIA 2009;16:18-24](#)

<ul style="list-style-type: none"> ·Describe an optimal process for policy makers, personnel, and academic modelers to collaboratively inform policy decisions ·Describe how pathogen sequence data can enhance traditional epidemiologic analysis ·Explain the three levels of systems analysis that use genetic data 	<p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 13 – Informatics Enables Transformation II – Apr 12

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Describe the benefits of the standardization of EMR/EHR ·Describe the importance of data quality as data pools and data streams grow exponentially ·Define the general enterprise technology principles ·Describe the benefits of ecosystems in local level PHS ·Describe the importance of data quality as data pools and data streams grow exponentially ·Define the general enterprise technology principles 	<p>Modules</p> <ul style="list-style-type: none"> ·Public Health Informatics Amphibians in Surveillance by Brian Lee ·Public Health Surveillance Innovations in mobile Health by Marion McNabb <p>Recommended Readings</p> <ul style="list-style-type: none"> ·TBD <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 14 – New Data, Analytics, and Intelligence Enlightens Transformation – Apr 19

<p>Learning Objectives</p> <ul style="list-style-type: none"> ·Define the major components of e-Surveillance™ ·Discuss innovations and opportunities in PHS Recognize the importance and benefits of engaging communities in PHS ·Identify the current efforts by the international community and WHO on interoperability and system standards ·Describe current approaches and advances in data manipulation and data visualization ·Explore potential impacts of enhanced e-Surveillance™ and m-Health 	<p>Modules</p> <ul style="list-style-type: none"> ·Necessary Challenge of Verifying and Validating Public Health Data by Richard S Hopkins ·The Human Interaction Required for Visualizing and Manipulating Information by Matthew Dollacker ·Public Health Modeling and Data Mining by Prm Singh ·Supply and Demand of the Public Health Workforce by Jeffrey Engel, Peter Nsubuga <p>Recommended Readings</p> <ul style="list-style-type: none"> ·TBD <p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation
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Week 15 – Impacts of Transformed PHS – Apr 26

<p>Learning Objectives</p>	<p>Modules</p> <ul style="list-style-type: none"> ·Research and Innovations Guiding Public Health Surveillance in the 21st Century by Paige Ryland
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<ul style="list-style-type: none"> ·Describe an optimal process for policy makers, PHS personnel, and academic modelers to collaboratively inform policy decisions ·Explain the use of PHS to monitor the quality and capacity of health services, identify underserved populations, and inform new research priorities for ensuring health equity ·Describe future challenges that need to be addressed for continued success in the transformation of PHS ·Describe the technical and policy solutions that can be developed to transform PHS with an equity focus to strengthen efforts for global disease control, elimination and eradication, which leads to sustainable development 	<p>Recommended Readings</p> <ul style="list-style-type: none"> ·TBD
	<p>Assignments</p> <ul style="list-style-type: none"> ·Session Evaluation ·Final Examination

RECOMMENDED READING LIST

This literature gives background on the issues discussed in class.

- “WHO | International Health Regulations (2005).” *WHO*.
<http://www.who.int/ihr/9789241596664/en/index.html>.
- “60 Years of Public Health Science at CDC.” *MMWR* 55(02). December 22, 2006.
<http://www.cdc.gov/mmwr/pdf/wk/mm55su02.pdf>
- Nsubuga, P, O Nwanyanwu, JN Nkengasong, D Mukanga, and M Trostle. “Strengthening Public Health Surveillance and Response Using the Health Systems Strengthening Agenda in Developing Countries.” *BMC Public Health* 10, no. Suppl 1 (December 3, 2010): S5. doi:10.1186/1471-2458-10-S1-S5.
- Thacker, SB and DF Stroup. “Future Directions for Comprehensive Public Health Surveillance and Health Information Systems in the United States.” *American Journal of Epidemiology* 140, no. 5 (September 1, 1994): 383–97.
- McNabb, SJN, AT Shaikh, JB Nuzzo, AI Zumla, and DL Heymann. “Triumphs, Trials, and Tribulations of the Global Response to MERS Coronavirus.” *The Lancet. Respiratory Medicine* 2, no. 6 (June 2014): 436–37. doi:10.1016/S2213-2600(14)70102-X.
- Zumla, AL, S Perlman, SJN McNabb, A Shaikh, DL Heymann, B McCloskey, and DS Hui. “Middle East Respiratory Syndrome in the Shadow of Ebola.” *The Lancet. Respiratory Medicine* 3, no. 2 (February 2015): 100–102. doi:10.1016/S2213-2600(14)70316-9.
- McNabb SJN, S Chungong, M Ryan, T Wuhib, P Nsubuga, W Alemu, V Carande-Kulis, and G Rodier. “Conceptual Framework of Public Health Surveillance and Action and its Application in Health Sector Reform.” [BMC Public Health 2002,2:2](#)
- Wuhib T, TL Chorba, V Davidiants, W MacKenzie, and SJN McNabb. “Assessment of the Infectious Diseases Surveillance System of the Republic of Armenia: an Example of the Surveillance Systems in the Republics of the Former Soviet Union.” [BMC Public Health 2002,2:3](#)
- Nsubuga P, N Eseko, T Wuhib, N Ndayimirije, S Chungong, and SJN McNabb. “Structure and Performance of Infectious Diseases Surveillance and Response, United Republic of Tanzania, 1998.” [Bull WHO 2002;80:196-203](#)

- McNabb SJN, A Surdo, A Redmond, J Cobb, J Wiley, S Chakrabarti, H Duncan, N Qualls, and M Moore."Applying a New Conceptual Framework to Evaluate Public Health Surveillance and Action, Hillsborough County, Florida, 2002." [Ann Epidemiol 2004;14\(9\):640-45](#)
- Memish ZA, SJN McNabb, F Mahoney, F Alrabiah, N Marano, QA Ahmed, J Mahjour, RA Hajjeh, P Formenty, FH Harmanci, H El Bushra, TM Uyeki, M Nunn, N Isla, M Barbeschi, and the Jeddah Hajj Consultancy Group. "Establishment of Public Health Security in Saudi Arabia for the 2009 Hajj in Response to Pandemic Influenza A (H1N1)." [Lancet 2009;374:1786-91](#)
- McNabb SJN "Comprehensive Effective and Efficient Global Public Health Surveillance." [BMC Public Health 2010: 10\(Suppl 1\):S3](#)
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