

出國報告（出國類別：進修）

## 心血管疾病流行病學

服務機關：臺中榮總

姓名職稱：梁凱偉 主治醫師

派赴國家/地區：美國 波士頓

出國期間：July 6 to Aug. 18, 2024

報告日期：Sep. 3, 2024

## 目 次

摘要.....	6
目的.....	8
過程.....	8
心得.....	9
建議.....	10
附錄.....	11

## 摘要（含關鍵字）

心血管疾病研究的方向，可分為基礎研究，如細胞分子生物學實驗或動物實驗，或臨床研究含 clinical trial, epidemiological study, large data bank analysis 等。進行臨床研究需具備如 clinical epidemiology, biostatistics 等相關能力才能做好 clinical study。職心臟血管中心醫師梁凱偉，經申請美國哈佛大學公共衛生學院碩士錄取後，承蒙醫院的支持給予公假及經費補助前往 Boston 進修。

哈佛公衛碩士 (master of public health) 有許多修課選擇可以配合臨床醫師的工作需求 full-time, part-time, summer-focused, on-line 選擇組合種類很多，職選擇 summer-focused (summer x 3 years) (每年 summer 需修滿 15 學分，三年共 45 學分，3 年畢業取得 Master of Public Health)。

上課內容 學分比率 生物統計課程約佔 2/5，流行病學課程約佔 2/5，其他公共衛生相關課程佔 1/5。

第一年 2022 summer 共 6 週叫做 program of clinical effectiveness 已於 2022 年完成

第二年 2023 summer 共 7 週 已於 2023 年完成

第三年 2024 年 summer 共 6 週，畢業前共需修畢 45 學分，前兩年已完成 36.5 學分，本學期再修 10 學分， **Systematic Reviews and Meta-Analysis in Public Health and Clinical Medicine**—2.5 學分，上課內容 systemic review, 如何做文獻搜尋及評比，生物統計 meta-analysis 統計原理, effect sizes, basic meta-analysis calculations, cumulative meta-analysis, meta-regression, heterogeneity  $I^2$ , 及生物統計 Stata 軟體在 meta-analysis 教學，作業 : student group research project oral presentations 3 次，加 student group research final paper x1 (research paper using systemic review plus meta-analysis), **Medical informatics**—2.5 學分，主要介紹醫療資訊系統在醫學研究上的應用如 electronic health record, medical decision support system, 作業 : homework x3, student research project for medical informatics x1, student research project presentation x 2, **Global Cardiovascular Disease Prevention-methods, study designs and case studies** 2.5 學分 主要內容 心血管疾病 代謝，環境危險因素的研究現況，流行病學 survey method, cohort study/case-control study design and methods, 作業: homework x2, student research project for cardiovascular disease prevention x1, student research project oral presentation x 1, **Improvement in Quality of Health Care** 2.5 學分，主要上課內容，quality improvement, patient safety, health care equity etc. 作業: homework x1。

上課內容豐富，分量很多，且每個學門，每週都有作業要花時間研讀才能完成作業，有部分課程也有需提出該學分的相關研究計劃含口頭報告及 final research proposal or paper manuscript。一般臨床醫生要能做好的基礎研究並不容易，方法學上及時間上的限制很多，很

難做出比較深入或探討到 mechanism。臨床研究如果能做的好，也可以回答許多臨床治療上遇到的問題。但基本的能力如 biostatistics, epidemiology 等的訓練是很有幫助的。

關鍵字: 公共衛生，流行病學，生物統計，臨床研究

## 一、目的

學習臨床研究技能包含生物統計學，流行病學等，以應用於心血管疾病相關研究。

## 二、過程

心血管疾病研究的方向，可分為基礎研究，含細胞分子生物學實驗，動物相關實驗，或臨床研究含 epidemiological cohort study、case-control study、randomized control trial、large data bank analysis 等。進行臨床研究需具備如 clinical epidemiology、biostatistics 等相關能力才能做好 clinical study。職心臟血管中心醫師梁凱偉，經申請美國哈佛大學公共衛生學院碩士錄取後，承蒙醫院的支持給予公假及經費補助前往 Boston 進修。

哈佛公衛碩士有許多修課方式及年限的選擇，很有彈性，以方便臨床醫生做選擇能配合工作的上課方式，含 full time, part time, on-line, summer-focused 等多種選擇，申請時考慮還要兼顧 clinical works、選擇 summer-focused x 3 years (每年 summer 需修滿 15 學分，三年共 45 學分，3 年畢業取得 Master of Public Health)。上課內容 學分比率 生物統計課程約佔 2/5，流行病學課程 約 2/5，其他公共衛生相關課程約佔 1/5。

第一年 summer 叫做 program of clinical effectiveness，設定對象為完成臨床訓練的醫師想從事臨床研究所需要的知識與訓練，70%的學生是來自 Harvard Affiliated Hospitals (ex. Massachusetts General Hospital、Brigham and Women's Hospital、Children's Hospital、Beth Israel Deaconess Hospital、Danar Faber Cancer institute 等)，第一年 program of clinical effectiveness 已於 2022 年完成。

第二年 2023 年 summer 共 7 週，已於 2023 年完成。

第三年 2024 年 summer 共 6 週，畢業前共需修畢 45 學分，前兩年已完成 36.5 學分，本學期再修 10 學分， **Systematic Reviews and Meta-Analysis in Public Health and Clinical Medicine**—2.5 學分，上課內容 systemic review，如何做文獻搜尋及評比，生物統計 meta-analysis 統計原理，effect sizes, basic meta-analysis calculations, cumulative meta-analysis, meta-regression, heterogeneity  $I^2$ ，及生物統計 stata 軟體在 meta-analysis 教學，作業：student research project group oral presentations 3 次，加 student group research final paper x1 (research paper using systemic review plus meta-analysis), **Medical informatics**—2.5 學分，主要介紹醫療資訊系統在醫學研究上的應用，如 electronic health record, medical decision support system, 作業: homework x3, student research project for medical informatics x1, student research project presentation x 2, **Global Cardiovascular Disease Prevention-methods, study designs and case studies** 2.5 學分 主要內容 心血管疾病 代謝，環境危險因素的研究現況，流行病學 survey method, cohort study/case-control study design and methods, 作業: homework x2, student research project for cardiovascular disease prevention x1, student research

project oral presentation x 1, Improvement in Quality of Health Care 2.5 學分，主要上課內容，quality improvement, patient safety, health care equity etc. 作業: quality improvement project x1。

上課內容豐富，分量很多，且每個學門，每週都有作業要花時間研讀才能完成作業，有部分課程也有需提出該學分的相關研究計劃含口頭報告及 final research proposal or paper manuscript。一般臨床醫生要能做好的基礎研究並不容易，方法學上及時間上的限制很多，很難做出比較深入或探討到 mechanism。臨床研究如果能做的好，也可以回答許多臨床治療上遇到的問題。但基本的能力如 biostatistics, epidemiology 等的訓練是很有幫助的。

一般臨床醫生要能做好的基礎研究並不容易，方法學上及時間上的限制很多，很難做出比較深入或探討到機制。臨床研究如果能做的好，也可以回答許多臨床治療上遇到的問題。但基本的能力如 biostatistics, epidemiology 等的訓練是很有幫助的。目前流行的資料庫分析，電子病歷分析，基因流行病學等研究也需相關的訓練才能做好，做對的研究。

心臟血管中心 李文領  
主任

### 三、心得

1. Harvard Public Health School，課程要求高，每個課程，每週都有作業，平均一週都有 3-5 份左右的作業要完成，期末有考試，課後需花時間重新複習與了解上課內容，才能寫作業。作業在助教及教授詳細批改後，也會有回饋可以看。部分課程要提出該課程主題的研究計劃或 research manuscript 及做口頭報告接受老師及同學的 critical review.
2. 上課老師很重視學生的提問與回饋，有問題都直接課堂提問討論，互動很多，且會另有 office hours 讓學生個別申請討論或問問題，不管是年輕或資深的老師都非常熱心且在意學生的反應，多表示有問題可以直接 e mail 詢問都可以的。助教本身多為博士班學生兼任，也非常認真負責，協助同學對上課疑問的解答，或帶領一部分統計軟體實做的電腦 workshop.
3. 每個課程，會有 syllabus 載明，授課目標，授課大綱，參考資料，教授及助教 e mail, 聯絡方式，成績計算方式，那一份作業佔幾分，那一個考試佔幾分，都有明確規定，在學校建立的 canvas website，可以下載上課所有相關資料，含上課的教材檔案，交作業，參考教科書或文獻。
4. 課程結束後，學校有匿名的問卷 survey 相關的課程設計與學生的反應。這可能也是老師非常兢兢業業的理由，因為學校會評鑑他們的教學。
5. 統計軟體的教學，台灣臨床醫師習慣使用的 SPSS 他們反而不教此軟體（可能對專業的流行病學或生物統計研究者 不夠強大）。
6. 生物統計或臨床流行病學的老師，習慣教 SAS, 或 R, 或 Stata。
7. Stata 類似 SPSS 有許多拉出式選單 package，對非專業人士 比較可以入門。

8. 哈佛醫學院（及牙醫學院，公衛學院）並沒有自己的附設醫院，但與 affiliated hospitals（Massachusetts General Hospital、Brigham and Women's Hospital、Children's Hospital、Beth Israel Deaconess Hospital、Danar Faber Cancer institute 等）幾乎合為一體，上課的老師不管是基礎（生物統計或流行病學相關研究人員）或臨床醫師幾乎 100%是 co-appointment 在醫院與學校都有 appointment. 陽明交通大學醫學院或中興大學醫學院可以多學習。

#### 四、建議（包括改進作法）

1. 鼓勵醫院工作同仁參加國際性認證的英語能力測驗，包含 TOEFL, TOEIC, IELTS 等，尤其是青年醫師，可考慮列入升等主治醫師的考核項目，醫院同仁多數不把英文聽說讀寫能力精進列為學習的目標之一，多數青年醫師都自我感覺良好。
2. 醫院從創院至今，種植了許多樹木，是醫院相對於其他一般醫院所沒有的景象，建議總務室，可以在每一株樹木（或含花草）加上簡單的說明，如樹種介紹，分佈地域，特色等，是很好的生態及環境教育。
3. 醫院目前與中興大學密切合作，建議研究部舉辦的外賓演講，可以提高中興大學老師的邀請比例，部分與醫院較相關的中興大學學院 如 醫學院，生命科學院，農學院 等 甚至可以將全部教師都列表排序為邀請演講名單。或發予部分中興大學老師中榮研究部的合聘或兼任研究員證書請他們來指導適合醫院可以做的研究。
4. 配合國家雙語政策，醫院定期舉行的研討會，可以考慮選擇一部分設定改為常規以英語進行，有些部科目前僅有邀請國外演講者，才以英語進行。（多年前內科部曾經每個月有一場 Grand Round 以英語進行）。
5. 醫院圖書館可以多舉辦文獻搜尋技巧的教學活動（如 PubMed, Embase, Covidence 等文獻資料庫的搜尋技巧）。
6. 數位醫學部可以多舉辦電子病歷（electronic health record）在醫學研究上的應用教學。

## 五、 附錄

### 附錄 上課內容

#### **BST 225: Systematic Reviews and Meta-Analysis in Public Health and Clinical Medicine**

<b>Day</b>	<b>Week 1</b> (July 29- August 2)	<b>Week 2</b> (August 5-9)	<b>Week 3</b> (August 12-16)
<b>Monday</b>	Introduction to M-A Clarifying the topic & evidence models Assessing study quality - Student introductions & group formation	Heterogeneity I: Subgroup analysis; Meta-regression; Effect size calculations Examples: Weight loss, ETS, Alcohol and stroke, Prenatal alcohol exposure	Evidence-based practice I Examples: Perioperative $\beta$ -blockers, masks for COVID-19 Group work
<b>Tuesday</b>	Searching the literature Publication bias <i>Example: weight loss maintenance</i> Guest: Paul Bain	Heterogeneity II: <i>Examples: BCG, Artificial sweeteners &amp; BMI</i>	Evidence-based practice II Examples: mammography, screening for depression Group work
<b>Wednesday</b>	Narrative reviews Statistical methods I:	Stata lab	Comparative effectiveness research



<b>Day</b>	<b>Week 1</b> (July 29- August 2)	<b>Week 2</b> (August 5-9)	<b>Week 3</b> (August 12-16)
	effect sizes, basic meta-analysis calculations, $I^2$  <i>Example: BCG vaccine</i>		Network meta-analysis  Examples: oral diabetes medications, cubital tunnel decompression  Group work
<b>Thursday</b>	Statistical methods II: publication bias, cumulative M-A  <i>Examples: BCG vaccine, ETS</i>	Drug safety  <i>Examples: Avandia, Vioxx, antidepressants, vaccines</i>	Student presentations: Final results and conclusions (3 groups)
<b>Friday</b>	Student presentations: Topic clarification & search protocol	Student presentations: Literature search and preliminary results	Student presentations: Final results and conclusions (3 groups)

**Evaluation:** Working in groups of 4 to 5 individuals, students will be expected to carry out a written systematic review and meta-analysis of a public health or clinical topic of their own choosing. Groups and topics will be identified during the first week of class, but please note that the topic must have a sufficient number of extant studies (at least 10) to permit the use of the techniques that will be studied in the course. Intermediate results will be presented and discussed in class as follows:

- August 2: Study protocol: precise topic, search strategy, inclusion/exclusion criteria.
- August 9: Search results, evidence table, and statistical issues.
- August 15-16: Final presentation of results and conclusions.

Each group will prepare one paper, to be submitted on Canvas by Saturday, August 17, at 5:00 pm. The content of the written paper should be based on the PRISMA consensus statement, which will be discussed in class (<http://www.prisma-statement.org/Links to an external site.>). Grades will be based on the written paper (60%), presentations (20%), and on class participation (20%).

Course schedule Week 1: Foundations and Methods		
Week	Topic	Reading
<b>Monday July 31</b>	<b>Introduction: The Quality Problem and the Improvement Solution</b> <i>Jafet Arrieta, MD DrPH, MMSc</i> <i>Senior Director, IHI</i> <i>Pedro Delgado, MSc</i> <i>Vice President, IHI</i>	Required: • Langley GL, Moen RD, Nolan KM, Nolan TW, Norman CL, Provost LP. The Improvement Guide. 2nd Edition. San Francisco: Jossey-Bass; 2009 (Chapters 1-3).
<b>Tuesday August 1</b>	<b>Physician Leadership of improvement and the kindness paradigm</b> <i>Guest: Bob Klaber, MD, OBE Pediatrician, Director of Strategy at Imperial NHS Trust</i>	Required: • Klaber R E, Bailey S. Kindness: an underrated currency BMJ 2019; 367 :l6099 doi:10.1136/bmj.l6099 • West, M. Bailey, S. and Williams, E. (2020) The Courage of Compassion Supporting Nurses and Midwives to Deliver High-Quality Care. Kings Fund, London.
<b>Wednesday August 2</b>	<b>Better Quality Through Better Measurement</b> <i>Guest: Robert Lloyd, PhD</i> <i>Vice President Improvement Science/Sr. &amp; Improvement Advisor, IHI</i>	Required: • IHI's Open School Whiteboard videos: • Family of Measures • Run Charts Part 1 • Run Charts Part 2
<b>Thursday August 3</b>	<b>Improving your System: Getting Started, Diagnostic Tools</b> <i>Jafet Arrieta, MD, DrPH, MMSc</i> <i>Senior Director, IHI</i> <i>Pedro Delgado, MSc</i> <i>Vice President, IHI</i> <i>Guest: Dan Henderson MD, MPH</i> <i>Chief Medical Officer at instED</i>	Required: • Quality Improvement Essentials Toolkit: IHI. Institute for Healthcare Improvement. (n.d.).

<b>Friday</b> <b>August 4</b>	<b>Leading Improvement with Patients and Families</b> <b>Guests: Linda Kenney</b> <b>Director, Peer Support Programs at The Betsy Lehman Center for Patient Safety</b> <b>Frederick Van Pelt, MD, MBA Chief Clinical Transformation Officer, UAB Medicine</b> <b>Maureen Bisognano</b> <b>President Emerita and Senior Fellow, IHI</b>	Required: • Bisognano M and Schummers D. Flipping healthcare: an essay by Maureen Bisognano and Dan Schummers. <i>BMJ</i> . 2014; 349: g5852. • Mate KS, Salinas G. Flipping Primary Health Care: A Personal Story. <i>Healthcare</i> . 2014 Dec; 2(4):280-283.
<b>Week 2: Improvements in the Field</b>		
<b>Monday</b> <b>August 7</b>	<b>Equity, Justice and Improvement</b> <b>Guests:</b> <i>Mona Hanna-Attisha, MD, MPH, Associate Dean for Public Health and C. S. Mott Endowed Professor of Public Health at Michigan State University</i> <b>Magdala Cherry, MD</b> <i>Health Equity Clinical Specialist, Google</i>	Required: • Mate, Kedar S., and Ronald Wyatt. "Health Equity Must Be a Strategic Priority." <i>NEJM Catalyst</i> , 27 Mar. 2018. • Wyatt R, Laderman M, Botwinick L, Mate K, Whittington J. <i>Achieving Health Equity: A Guide for Health Care Organizations</i> . IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2016.
<b>Tuesday</b> <b>August 8</b>	<b>The Patient Safety Improvement Imperative</b> <b>Guests:</b> <b>Ruben Azocar, MD, MHCM, FCCM, FASA Vice President for Perioperative Services at Beth Israel Deaconess Medical Center</b> <b>Laura Rock, M.D.</b> <i>Assistant Professor of Medicine at Beth Israel Deaconess Medical Center</i>	Required: • Bates DW et al. The Safety of Inpatient Health Care. <i>N Engl J Med</i> . 2023 Jan 12;388(2):142-153. doi: 10.1056/NEJMsa2206117. PMID: 36630622.
<b>Wednesday</b> <b>August 9</b>	<b>Improvement at a National Level (Scotland)</b> <b>Guest: Dr Jason Leitch, MPH</b> <i>National Clinical Director, Scottish Government</i>	Required: • Dayan M and Edwards N (2017), <i>Learning from Scotland's NHS</i> . Research report. Nuffield Trust. • "The Scottish Improvement Journey: A Nationwide Approach to Improvement." <i>Scottish Government</i> , 20 Apr. 2018.

<b>Thursday</b> <b>August 10</b>	<b>Government Policy: A driver for health care quality, equity, and innovation</b> <b>Guest: Ryan Schwarz, MD, MBA</b> <i>Chief, Office of Payment &amp; Care Delivery Innovation. Massachusetts Executive Office of Health and Human Services</i>	Required: <ul style="list-style-type: none"> <li>• CMS leadership's strategic vision for Medicaid (2021):  <a href="https://www.healthaffairs.org/doi/10.1377/fofront.20211115.537685/">https://www.healthaffairs.org/doi/10.1377/fofront.20211115.537685/</a></li> <li>• MassHealth's primary care payment reform efforts (2023):  <a href="https://link.springer.com/article/10.1007/s11606-023-08063">https://link.springer.com/article/10.1007/s11606-023-08063</a></li> </ul>
<b>Friday</b> <b>August 11</b>	<b>Making change happen and Joy in Work</b> <b>Maureen Bisognano</b> <i>President Emerita and Senior Fellow, IHI</i> <b>Jafet Arrieta, MD, DrPH, MMSc</b> <i>Senior Director, IHI</i>	Required: <ul style="list-style-type: none"> <li>• Hilton K, Anderson A. IHI Psychology of Change Framework to Advance and Sustain Improvement. Boston, Massachusetts: Institute for Healthcare Improvement; 2018. (Available at <a href="http://ihi.org">ihi.org</a>)</li> <li>• Perlo J, Balik B, Swensen S, Kabcenell A, Landsman J, Feeley D. IHI Framework for Improving Joy in Work. IHI White Paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2017. (Available at <a href="http://ihi.org">ihi.org</a>)</li> </ul>
<b>Week 3: Leading Transformational Change</b>		
<b>Monday</b> <b>August 14</b>	<b>Introduction to Improvements in the Field (Microsystem Improvement)</b> <b>Pedro Delgado, MSc</b> <i>Vice President, IHI</i> <b>Jafet Arrieta, MD, DrPH, MMSc</b> <i>Senior Director, IHI</i>	Required: <ul style="list-style-type: none"> <li>• Likosky, Donald S (2014). Clinical microsystems: a critical framework for crossing the quality chasm. J Extra Corpor Technol 46:33-7.</li> <li>• Berwick DM. A user's manual for the IOM's 'Quality Chasm' report. Health Affairs. 2002 May-Jun;21(3):80-90.</li> </ul>
<b>Tuesday</b> <b>August 15</b>	<b>There is No Quality without Equity</b> <b>Guests:</b> <b>Camille Burnett, PhD, MPA, RN</b> <i>Vice President Equity IHI</i> <b>Bram Wispelwey, MD, MPH</b>	Required: <ul style="list-style-type: none"> <li>• Review <a href="https://www.risetohealthequity.org/">https://www.risetohealthequity.org/</a></li> <li>• Leveraging Clinical Decision Support for Racial Equity: A ... (n.d.).  <a href="https://catalyst.nejm.org/doi/full/10.1056/CAT.22.0076">https://catalyst.nejm.org/doi/full/10.1056/CAT.22.0076</a></li> </ul>

<b>Wednesday</b> <b>August 16</b>	<b>Physician Leadership of Improvement; Improving Primary Care &amp; IHI Site Visit</b> <b>Guests:</b> <b>Kirsten Messinger, MD, MHCDS</b> <i>Director of Provider Engagement, Regional Medical Director, Medical Director of Sexual and Reproductive Health, and Operations Lead for Telehealth at the Cambridge Health Alliance</i> <b>Mary Catherine Arbour, MD, MPH</b> <i>Associate Physician for Research, Division of Global Health Equity at Partners HealthCare at Home</i>	<b>Required:</b> <ul style="list-style-type: none"> <li>James BC, Lazar JS. Chapter 7: Sustaining and Extending Clinical Improvements: A Health System's Use of Clinical Programs to Build Quality Infrastructure. In:</li> <li>Nelson EC, Batalden, PB, Lazar JS, eds. <i>Practice-based Learning and Improvement: A Clinical Improvement Action Guide (2nd edition)</i>. USA: Joint Commission Resources; 2007: 95-108</li> </ul>
<b>Thursday</b> <b>August 17</b>	<b>There is No Planet B: Improvement and Environmental Sustainability</b> <b>Guests:</b> <b>Carlos Faerron, MD, MSc, Adjunct faculty at the Department of Oral Health Policy and Epidemiology at Harvard University and at the University of Maryland Graduate School</b> <b>Elizabeth E Hansen, MD, PhD Pediatric Anesthesiologist, Seattle Children's Hospital. Assistant Professor   University of Washington Department of Anesthesiology and Pain Medicine</b>	<b>Required:</b> <ul style="list-style-type: none"> <li>Guzmán CAF, Aguirre AA, Astle B, Barros E, Bayles B, Chimbari M, El-Abbadi N, Evert J, Hackett F, Howard C, Jennings J, Krzyzek A, LeClair J, Maric F, Martin O, Osano O, Patz J, Potter T, Redvers N, Trienekens N, Walpole S, Wilson L, Xu C, Zylstra M. "A framework to guide planetary health education." <i>Lancet Planet Health</i>. May, 2021;5(5):e253-e255</li> </ul>
<b>Friday</b> <b>August 18</b>	<b>Lessons to Take Home and Where you Might Go from Here...</b> <b>Pedro Delgado MSc</b> <i>Vice President, IHI</i> <b>Jafet Arrieta, MD, DrPH, MMSc</b>	<b>Required:</b> <ul style="list-style-type: none"> <li>McCannon J, Delgado P, Bisognano M. "Ten Lessons from Health Care on Quality Improvement." <i>Stanford Social Innovation Review (Blog)</i>. August 23, 2019.</li> </ul>

## HPM512: Medical Informatics

Session #	Date	Time	Lecture Title	Lecturer
1	Tuesday 7/9/2024	2:00 - 2:45 PM	Introduction	David Bates
2	Tuesday 7/9/2024	2:45 - 3:30 PM	Inpatient Clinical Information Systems	Jonathan Einbinder
3	Wednesday 7/10/2024	2:00 - 2:45 PM	Outpatient Clinical Information Systems	David Bates
4	Wednesday 7/10/2024	2:45 - 3:30 PM	Clinical Decision Support Systems	David Bates
5	Thursday 7/11/2024 (HW1 due)	2:00 - 2:45 PM	Standards 101	Jonathan Einbinder
6	Thursday 7/11/2024	2:45 - 3:30 PM	Measuring and Reporting on Quality	David Bates
7	Friday 7/12/2024	2:00 - 2:45 PM	Privacy, Confidentiality, Security, and HIPAA	Jonathan Einbinder
8	Friday 7/12/2024	2:45 - 3:30 PM	Interoperability	David Bates
9	Monday 7/15/2024 (HW2 due)	2:00 - 2:45 PM	Methods of Evaluation 1	David Bates
10	Monday 7/15/2024	2:45 - 3:30 PM	Methods of Evaluation 2	David Bates
11	Tuesday 7/16/2024	2:00 - 2:45 PM	Clinical Documentation	David Bates
12	Tuesday 7/16/2024	2:45 - 3:30 PM	Medication, Laboratory & Radiology Testing	David Bates
13	Wednesday 7/17/2024	2:00 - 2:45 PM	<b>Initial Presentations</b>	Drs. Bates and Einbinder
14	Wednesday 7/17/2024	2:45 - 3:30 PM	<b>Initial Presentations</b>	Drs. Bates and Einbinder
15	Thursday 7/18/2024	2:00 - 2:45 PM	Artificial Intelligence	David Bates
16	Thursday 7/18/2024	2:45 - 3:30 PM	<i>Bio-surveillance</i>	<i>Mauricio Santillana</i>
17	Friday 7/19/2024	2:00 - 2:45 PM	Healthcare Analytics	Jonathan Einbinder
18	Friday 7/19/2024	2:45 - 3:30 PM	Patient Health Records, Social, and Mobile	David Bates
19	Monday 7/22/2024 (HW3 due)	2:00 - 2:45 PM	<i>Population Management</i>	<i>Jason Wasfy</i>
20	Monday 7/22/2024	2:45 - 3:30 PM	<i>Genes and Environment</i>	<i>Chirag Patel</i>
21	Tuesday 7/23/2024	2:00 - 2:45 PM	<i>Research Infrastructure &amp; Instrumenting the Enterprise</i>	<i>Shawn Murphy</i>

Session #	Date	Time	Lecture Title	Lecturer
22	Tuesday 7/23/2024	2:45 - 3:30 PM	<i>Epic Implementation, Maintenance &amp; Organizational Issues</i>	Gianna Zuccotti
23	Wednesday 7/24/2024	2:00 - 2:45 PM	<i>Natural Language Processing &amp; Large Language Models</i>	Li Zhou
24	Wednesday 7/24/2024	2:45 - 3:30 PM	<i>Improving Nursing Care with HIT</i>	Patti Dykes
25	Thursday 7/25/2024	2:00 - 2:45 PM	<b>Final student presentations</b>	Drs. Bates Einbinder
26	Thursday 7/25/2024	2:45 - 3:30 PM	<b>Final student presentations</b>	Drs. Bates Einbinder
27	Friday 7/26/2024	2:00 - 2:45 PM	<b>Final student presentations</b>	Drs. Bates Einbinder
28	Friday 7/26/2024	2:45 - 3:30 PM	<b>Final student presentations</b>	Drs. Bates Einbinder
Thursday	7/11/2024	2:00 PM EST	<b>Homework #1</b>	Questions Cyberday
Monday	7/15/2024	2:00 PM EST	<b>Homework #2</b>	Implementing a guideline in a information syst
Wednesd ay	7/17/2024	2:00 PM EST	<b>Initial Student Presentations</b>	
Monday	7/22/2024	2:00 PM EST	<b>Homework #3</b>	Clinical Issue (describe a p amenable to AI)
Thursday	7/25/2024	2:00 PM EST	<b>Final Student Presentations</b>	
Friday	7/26/2024	5:00 PM EST	<b>Final Paper</b>	



## **GHP213- Global Cardiovascular Disease Prevention – methods, study designs and case studies**

**7/9/2024: Goodarz Danaei**

**Overview of cardiovascular diseases (CVD): history of CVD prevention, current levels and recent trends and determinants**

**7/10/2024: Joel Schwartz**

**Environmental causes of cardiovascular disease**

**Homework 1 due 7/13/2024 by 11:59 PM.**

**Preproposal due 7/13/2024 by 11:59 PM.**

**7/11/2024: Natalie Slopen**

**Psychosocial and socioeconomic causes of CVD**

**Optional R session:**

**Time: 2:00 PM - 3:00 PM 7/11/2024 (today)**

**lab\_code.RDownload lab\_code.R**

**slides.pdfDownload slides.pdf**

**7/12/2024: Eric Rimm**

**Diet and CVD**

**7/15/2024: Goodarz Danaei**

**Physiological risk factors of CVD**

**7/16/2024: Goodarz Danaei**

**Cross-sectional studies; analysis of complex health systems**

## **In-Class Activity**

**Activities\_cross-sectional surveys.docx**Download **Activities\_cross-sectional surveys.docx**

**Cross-sectionoal\_Activity4\_sum of squares.xlsx**Download **Cross-sectionoal\_Activity4\_sum of squares.xlsx**

**7/17/2024: Goodarz Danaei**

**Causal inference using counterfactuals**

**In-class activity**

**Activities\_causal inference.docx**Download **Activities\_causal inference.docx**

**7/18/2024: Goodarz Danaei**

**Causal graphs, confounding, and selection bias**

**Optional R session:**

**Time: 12:00 PM - 1:00 PM 7/18/2024 (today)**

**Location: GHP Conference Room 1110 (on the 11th Floor of Building 1)**

**slides.pdf**Download **slides.pdf**

**code.R**Download **code.R**

**nhanes\_2003\_06\_v2.dta**Download **nhanes\_2003\_06\_v2.dta**

**NHANES13\_14\_16jul2017.csv**Download **NHANES13\_14\_16jul2017.csv**

**NHEFS\_CHD\_16july2017.csv**Download **NHEFS\_CHD\_16july2017.csv**

**7/19/2024: Goodarz Danaei**

**Observational studies conceptualized as emulating a target trial**

**7/22/2024: Paige Williams**

**Prospective cohort studies and survival analysis**

**GHP213\_Cohort Studies, Survival Analysis, and Cox.pptx**Download GHP213\_Cohort Studies, Survival Analysis, and Cox.pptx

**GHP213\_Cohort Studies, Survival Analysis, and Cox.pdf**Download GHP213\_Cohort Studies, Survival Analysis, and Cox.pdf

**Reminder for Assignments**

**Proposal presentation slides due 07/25/2024 by 5:00 pm**

**Homework 2 due 7/28/2024 by 11:59 PM**

**Complete Proposal due 7/28 by 11:59 pm**

**7/23/2024: Murray Mittleman**

**Case-control studies**

**Study Critique Questions: GHP213 – Case-control Study Critique 2024 - Questions only.pdf**Download GHP213 – Case-control Study Critique 2024 - Questions only.pdf

**Reminder for Assignments**

**Proposal presentation slides due 07/25/2024 by 5:00 pm**

**Homework 2 due 7/28/2024 by 11:59 PM**

**Complete Proposal due 7/28 by 11:59 pm**

**7/24/2024: Ankur Pandya**

**Disease prediction models and cost-effectiveness studies**

**Proposal presentation slides due 07/25/2024 by 5:00 pm**

**Homework 2 due 7/28/2024 by 11:59 PM**

**Complete Proposal due 7/28 by 11:59 pm**

**7/25/2024: Vilma Irazola**

**Randomized and cluster-randomized intervention trials**

			Synchronous	Asynchronous	Assessments
Pre-Course	Pre-Work. Introduction to MPH 104	Understanding MPH 104			
Week 1 (Jul. 6-17)	Socioeconomic Status and Health (Wang); Race/Ethnicity and Health (Wang)	Week 1	With Natalie Slopen on Wed., Jul. 12 at 7:00pm ET		
Week 2 (Jul. 18-24)	Deep Dive #1 (Wang, Williams)			Required discussion board	
Week 3 (Jul. 25-31)	Public Health Interventions and Evaluations (Wang)	Week 3	With Monica Wang on Tue., Jul. 25 at 8:00pm ET	Midcourse survey	
Week 4 (Aug. 1-7)	Deep Dive #2 (Slopen, Williams, Wang)			Discussion board	Community Needs Assessment Exercise
Week 5 (Aug. 8-14)	Health Advocacy (Wang); Op-Ed Writing (Daniloff Mancusi)	Week 5	With Miranda Daniloff Mancusi* on Thu., Aug. 10 at 7:00pm ET		
Week 6 (Aug. 15-18)	Independent Work; Course Wrap-Up (Slopen)		With Miranda Daniloff Mancusi* on Tue., Aug. 15 at 9:00am	Discussion board	Op-Ed

*\* While it is possible to attend both of Miranda's sessions for extra feedback, you can only receive points for one session.*