https://docs.google.com/document/d/1lwLv-PZXZTymWbPLTB3604dvnOvg2gKntIoBo7QH-6c/edit#heading=h.vw8bjo7xvcn9

**MS4SF Guide to Climate and Health Curriculum Reform in Med Schools**

**SAMPLE SYLLABI**

**Brown University Elective Syllabus: Climate Change & Health Pre-Clerkship [10 weeks]**

Students will be able to:

1. Describe the science of climate change and the multiple pathways by which climate change may impact human health
2. Evaluate epidemiologic papers investigating the human health effects of projected climate change
3. Use skills to communicate, orally and in writing, issues related to climate change with members of the  medical community, popular press, policy makers, and key stakeholders.
4. Describe the role of healthcare as both a major contributor to climate change and an important opportunity for innovating mitigation and adaptation strategies.

**Penn State Elective Syllabus: Climate Change, Health, Healthcare Delivery,  and  Sustainability [2 weeks]**

**Learning Objectives**

1. Discuss how the healthcare system could be designed to be sustainably developed.
2. Describe the health impacts of climate change.
3. Evaluate how the healthcare system may respond to emergencies related to climate change.
4. Create an intervention that improves the integration of climate change into population health.

Knowledge: Identify gaps in health system response to climate change health consequences. How does the health system need to respond to these climate change health consequences? Discuss possible system solutions

Skills: Resource connection, Recognition of climate change and health issues

Attitudes: Awareness of multiple impacts of climate change on health

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## **BROWN UNIVERSITY Crash Course on Climate Change & Health / Healthcare Sustainability [3 hrs]**

**Goals/Objectives:**

* Think critically about waste in the healthcare industry
* Understand your role in contributing to and reducing healthcare waste
* Learn how to communicate the health risks of climate change to a target audience
* Identify some salient health risks associated with climate change

**Topics:**

* How the healthcare industry contributes to excess waste and climate change
* Diseases and health concerns associated with progression of climate change

**Required Reading/Preparation:**

* Summary of the Green New Deal and implications for healthcare
  + <https://www.nytimes.com/2019/02/21/climate/green-new-deal-questions-answers.html>
* [Climate Change — A Health Emergency](https://www.nejm.org/doi/full/10.1056/NEJMp1817067?fbclid=IwAR2d_q792kIdG1a2omvkTVQgj0Zge-3C_k1dJWBvkrTiXGDA6Q1HXe4AVvg) NEJM

**Class Activities:**

IntrO: Why Are We Talking About This? A few facts about the climate impact of the healthcare system

Hospital Dumpster Diving Simulation (1 hr)

Discuss types of waste : Discuss the differential climate impact of red vs white trash and different types of waste (solid waste, regulated medical waste, pharmaceutical waste). Show sterile suturing kit as an example. Only one available- have it on a front table, with groups able to come up and observe/touch/take pics. Small Groups independently discuss the materials in each kit. Act out how the kit is used to get a feel for unnecessary components. What is used and what is just thrown away? Dr. Lockhart (PEM) advises that curved forceps are only needed for clamping bleeding vessels, removing certain foreign objects and that most injections can use 25 gauge syringe rather than 27, and that there is an extra cup for sterile rinsing when really the plastic container of the kit itself can be used as a rinse container.Where does the waste from each component of the kit end up? Think about supply chain waste (packaging, shipping, water) to bring the product to the hospital. Decide if there are any items that can be diverted from waste, and how that item could be diverted. Discuss any ideas for reducing waste, such as making out of different materials, not including certain components, reusing

Large group discussion (25-30 min). Share where groups thought the trash goes, ideas for reducing waste (what are the easy changes to make regarding waste, and what would have the largest impact on waste?) Discussion about what happens in the real world and are there ways to design waste management in hospital better to incentivize correct disposal by staff.

Examples of successful sustainable initiatives in healthcare

Blue wrap recycling <https://healthtrustpg.com/sustainability/blue-wrap-recycling/>

Green practices in the OR <https://jamanetwork.com/journals/jamasurgery/fullarticle/406778>

Items that can be repurposed

<https://practicegreenhealth.org/sites/default/files/2019-03/gorimpmod-meddevicerepr_r5_web.pdf>

Add pictures of items that can and cannot be repurposed and have class vote on it.

Reinterpreting Urgency (1 hour 20 min)

Analyze a  scientific paper about climate change and work with a team-member to translate the piece into messaging for a patient, a lawmaker, or a colleague. Split the class into groups. Can choose the article that they are interested in, does not matter if more than one group takes the same article, as it will be interesting to see differences in communication. Can also choose their own article, must be approveda.

Asthma and climate change: <http://gatehousenews.com/ristateofhealth/climate-of-suffering/?fbclid=IwAR1PEnk2QMXsURPlwrvXOod3kSF-6neMcq3ouiCNinIUt6uOb4Sb-JgIyhY>

Health impacts of hospital waste: <https://www.ncbi.nlm.nih.gov/pubmed/29072942>

Climate change and mental health: <https://www.ncbi.nlm.nih.gov/pubmed/31349129>

Climate Change and vulnerable groups: <https://www.ncbi.nlm.nih.gov/pubmed/29219089>

Candida Auris association with climate change <https://mbio.asm.org/content/10/4/e01397-19>

Give options for the type of message for each group to produce (groups can choose their preference): Stream of Twitter , essages/Social Media/Instagram Story/Post/Listicle, Visual/Audio media piece, Op-ed, Patient pamphlet

Independent working time (60 min). illustrate an idea around the concept described in the article, but don’t summarize the article

Group Presentations (30 min): Each group to present their concrete deliverable to class as if the class is their target audience. Class gives feedback, as if they are the target audience, on the message that they received: What was effective? What could be better? Did it accurately convey the information or the message? Is it at an appropriate reading level?

Helpful technical articles to be made available to class in advance:

<https://compose.ly/for-writers/7-tips-for-writing-a-great-listicle/>

<https://www.buzzsprout.com/how-to-make-a-podcast>

<https://blog.hootsuite.com/instagram-captions-drive-engagement/>

<https://www.digitaltrends.com/social-media/become-twitter-famous/>

<https://www.aafp.org/dam/AAFP/documents/journals/afp/PatientHandoutInstructions.pdf>

* + - Presentation on hospital waste audit findings from summer PCPM research  24 hours of waste from the MGH ED
    - Present case vignettes. Ex: You notice excessive red bag waste, what are some changes you would propose to reduce red bag waste? Who would you need to talk to? How would you change the behavior and practices of busy clinicians beyond just education and training?

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