The FDA and Clinical Trials: Application to COVID-19

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http://bit.ly/PharmaPolicy

#PharmaPolicy on Twitter

- Engage with course materials and current topics in drug law and policy by joining the conversation on Twitter!
- Counts toward participation!
- Be sure to tag the following in your tweets:
  - @DrSinhaEsq
  - #PharmaPolicy
- Optional additional tags: @US_FDA, #FDA, #CWA nondrug, #DrugLaw, #Opioids,
  #MedTwitter, #LawTwitter, #HealthPolicyTwitter
- Student tweets will be highlighted at the beginning of each class
- If you want help getting started on Twitter, schedule time during office hours

#PharmaPolicy
YouTube Channel

Question Sets for Videos:

Up to 10X
- MSG - 2021 Pharmaceutical Policy
- 10X Act - 2021 Pharmaceutical Policy
- Y/N Act - 2021 Pharmaceutical Policy
- FDA - 2021 Pharmaceutical Policy
- Internal Medicine - 2021 Pharmaceutical Policy
- History Today - 2021 Pharmaceutical Policy

Week 1 Videos

How can you start to...: 5+ years ago

Learn to choose patients with MS

What are some reasons for patient refusal?

What are some strategies to promote and improve patient health?

What are the challenges in the health care of patients with MS?

What are the challenges in the assessment and treatment of patients with MS?

What are the challenges in the assessment and treatment of patients with MS?
Course Expectations

Midterm Assignment:
— 800 word op-ed on a topic of your choosing.
— The topic must relate to the course or course materials.
— The topic must be pre-approved by Dr. Sinha by February 18th, and the op-ed is due by March 26th.

Please DO NOT wait until the last minute to clear your topic with me!

Newspaper Op-Eds

Course Expectations

Presentation:
— You will give a short presentation based on your op-ed
— Length will be determined by number of students in class (most likely 3-5 minutes)
— More details to come

Course Expectations

Final Exam:
— This will be a take-home exam consisting of a 2-page formatted policy memo
— On May 6th, I will give you instructions
— The policy memo will be due in one week (May 13th)
— More information to come

FDA and COVID-19

What did you learn from the podcasts?
FDA and COVID-19

Racial and Ethnic Health Disparities Related to COVID-19

One of the most disheartening aspects of the coronavirus disease 2019 (COVID-19) pandemic in the US is the disproportionate harm that it has caused to historically marginalized groups. Black, Hispanic, and Asian people have substantially higher rates of infection, hospitalization, and death compared with white people. According to an analysis by the Kaiser Family Foundation and the Epic Health Research Network, based on data from the Epic Health record system for 7.3 million Black patients, 1.3 million Hispanic patients, 1.4 million Asian patients, and 4.6 million White patients, as of July 25, 2020, the hospitalization rates and death rates per 10,000, respectively, were 24.6 and 56.3 for Black patients, 35.4 and 56.4 for Hispanic patients, 28.5 and 4.3 for Asian patients, and 28.3 and 3.3 for White patients. African Americans and Native Hawaiians/ Pacific Islanders have been disproportionately affected by COVID-19.

Clinical Trials

• Gold Standard: TWO randomized, double-blind, placebo-controlled studies
• Randomized?
• Double-blind?
• Placebo-controlled?
• Why two?

What did you learn from this article?
Evolution of Clinical Trials

• **Gold Standard**: TWO randomized, double-blind, placebo-controlled studies (pivotal trials)
• From 1995 to 2017:
  • Proportion of approvals supported by 2+ pivotal trials decreased from 81% to 53%
  • Proportion of trials supported by at least 1 trial using a comparator (standard of care or placebo) decreased from 96% to 83%
  • Number of indications supported by at least one trial of 6 months duration increased from 26% to 46%

• Does this concern you?

New Means of Science Communication during COVID-19

• Trial results by pre-print
• Trial results by press-release
• Rapid publication in big-name medical journals (NEJM, JAMA, the BMJ)
• Retraction of studies
• Drugs being studied:
  • Hydroxychloroquine
  • Dexamethasone
  • Remdesivir

Hydroxychloroquine

• Used to treat malaria and inflammatory conditions like lupus (SLE)
• Had some promise for SARS-CoV-1 so thought was it might help for SARS-CoV-2 (COVID-19)
• Studies have shown it has NO value in treatment or prevention of COVID-19 and is not risk-free (can cause irregular heart rhythms)
• Was initially given an EUA but later revoked

Dexamethasone

• Dexamethasone is a steroid that is commonly used in inflammatory conditions like multiple sclerosis
• The drug is generic, meaning it is fairly cheap
• Fewer incentives for manufacturers to study the drug (no $$$)
• Data suggests a role in hospitalized COVID-19 patients
• Data emerging on duration of use, populations who stand to benefit
**Tocilizumab**

- IL-6 associated with viral load, disease severity, and prognosis in COVID-19
- Tocilizumab (Actemra) is an FDA-approved IL-6 receptor monoclonal antibody
- Some data suggest improved survival, improved recovery time, and less need for higher levels of hospital care (floors to ICU)
- Another study found a much higher death rate in the tocilizumab group, so the trial was stopped
- Despite mixed evidence, often given with dexamethasone to hospitalized COVID patients
- Cost: $2200 (or more) per patient

**Remdesivir**

- Remdesivir is a drug that was first studied as a treatment for Ebola
- Remdesivir received an EUA and now has full FDA approval
- Priced at $3120 for a typical patient
  - Cost to produce is $1 per day
- Data thus far not great to support widespread use in COVID-19
  - World Health Organization recommended against the use of remdesivir in COVID-19 patients based on study finding “no important effect on mortality, need for mechanical ventilation, time to clinical improvement, and other patient-important outcomes.”

**Treatments for COVID-19**

- Bottom-line: no breakthrough treatments to date
- Long-haul COVID-19 will increase need for continuing treatment and long-term care
- Repurposing of drugs quicker than de novo drug development, but...
  - Only brand manufacturers have true incentive to conduct studies
  - Cheap, widely accessible medications may have promise but are understudied
- New drug development will be needed in the long run

**Any questions?**