4.27: Economics and Medicine with the Host of Freakonomics, M.D., Dr. Anupam Bapu Jena

Season	4
Type	Plenary Session

We Discuss:

- Introduction [1:00]
- MGH [10:00]
- Podcast [26:50]
- Papers [32:00]
- Good ideas [40:30]
- Mortality [1:03:00]
- Debate [1:09:00]

Plenary Session 4.27 Show Notes

Overview

Conversation with Dr. Bapu Jena

- **YouTube**
  - Watch this conversation on YouTube
- **Introduction [1:00]**
  - Dr. Bapu Jena

        - Dr. Jena is an Associate Professor of Health Care Policy and Medicine at Harvard Medical School
            - He studied economics and biology at MIT
                - He received his MD and PhD in Economics from the University of Chicago
                    - He completed his residency in internal medicine at Massachusetts General Hospital

- **MGH [10:00]**
    - <u>The prevalence and nature of postinterview communications between residency programs and applicants during the match</u>
        - Jena et al., Academic Medicine

> ⚕ *"Although postinterview communications may help applicants and programs gauge each other's interest, both types of statements about ranking preferences can be misinterpreted by applicants who may view them as signals that they will match at certain programs. In our study, almost 20% of respondents reported that programs' nonspecific statements did not reflect applicants' Match outcomes, possibly reflecting applicants' wishes to interpret such communications optimistically. It is also possible that residency program faculty, having participated in multiple Matches, may interpret applicants' communications of interest with more skepticism than applicants apply to programs' statements.5 We recommend that faculty advisors caution students that statements of interest by residency programs are common and should not be interpreted as binding or implicit commitments." - Jena et al.*

    - <u>Duty hour reform in a shifting medical landscape</u>
        - Jena & Prasad., JGIM

- Sexually transmitted diseases among users of erectile dysfunction drugs: analysis of claims data
    - Jena et al., Annals of Internal Medicine
- Malpractice risk according to physician specialty
    - Jena et al., NEJM
- After publishing these two papers during residency, Dr. Jena had the opportunity to pursue fellowship or begin his career
    - He ended up choosing to join the faculty at Health Policy at Harvard in Barbara McNeil's division
        - Remaining an internist allowed Dr. Jena to focus on research and the opportunity to think very broad about the way society and medicine interact
- How many a doctor economists are there?
    - It depends on how you define "economists"
        - If you define economist by having a PhD in economics, this number is maybe 10 to 15
            - If you define a health economist more broadly, to include people who have PhDs in health policy and focus in economics, then this number probably doubles
                - In the grand scheme of things, there are probably less than 100

- **Podcast [26:50]**
    - Freakonomics, M.D.

> ⚕ *Each week, physician and economist Dr. Bapu Jena will dig into a fascinating study at the intersection of economics and healthcare. He takes on questions like: Why do kids with summer birthdays get the flu more often? Can surviving a hurricane help you live longer? What do heart surgery and grocery-store pricing have in common? You can follow the show on Apple Podcasts, Stitcher, Spotify, or wherever you get your podcasts*

> "I've always loved what the *Freakonomics* podcast and the series of books has been about because it really is, in my mind, what is most interesting to me, and that's not true for everybody, but it's the aspects of medicine that are aspects of economics that are most interesting. It's going to big data, thinking about economic issues, but really with a clever in creative lens." - Dr. Jena

- Why Fridays May Be Dangerous for Your Health (Freakonomics, M.D. Ep. 9)

> ⚕ *When researchers analyzed which day of the week most drug-safety alerts are released — and what it means for public health — they were stunned. So was Bapu Jena. He talks with them and a physician this week about the "Friday Effect," a common problem with big repercussions for the safety of the medications.*

- **Papers [32:00]**
  - Malpractice risk according to physician specialty
    - Jena et al., NEJM

Table 1. Summary Statistics for Physician Specialties.*

Specialty	Physician-Years of Coverage	No. of Physicians	Physician Age	Coverage Years per Physician
	no.		*yr*	*no.*
All physicians	233,738	40,916	49.0±9.5	7.2±4.4
Anesthesiology	29,952	5,037	45.6±8.5	7.2±3.9
Cardiology	4,155	777	49.8±8.9	5.9±4.4
Dermatology	3,627	532	47.8±9.9	8.0±5.1
Diagnostic radiology	4,905	808	48.6±9.1	6.6±4.3
Emergency medicine	1,631	352	43.2±8.1	4.8±3.3
Family general practice	25,758	4,975	48.9±9.7	6.2±4.2
Gastroenterology	3,981	639	50.2±8.6	7.0±4.7
General surgery	7,352	1,205	48.9±9.4	7.2±4.5
Gynecology	2,577	459	53.0±9.1	5.8±3.9
Internal medicine	27,268	4,905	47.8±9.4	7.2±4.6
Nephrology	1,373	248	47.2±9.1	7.3±5.0
Neurology	3,037	519	48.4±8.4	6.6±4.8
Neurosurgery	1,927	351	48.6±8.2	5.1±3.2
Obstetrics and gynecology	10,385	1,899	47.5±9.0	6.2±3.5
Oncology	1,207	245	49.8±7.9	6.1±3.5
Ophthalmology	5,203	807	50.0±9.9	7.6±4.9
Orthopedic surgery	11,928	2,224	48.3±8.9	6.0±4.4
Pathology	20,717	3,094	51.8±9.6	9.5±4.3
Pediatrics	7,381	1,616	45.8±9.4	5.2±4.1
Plastic surgery	11,882	1,862	47.4±9.0	7.6±4.4
Psychiatry	19,011	3,011	52.5±8.7	6.6±3.5
Pulmonary medicine	2,362	380	47.5±8.2	7.7±5.0
Thoracic–cardiovascular surgery	3,187	437	50.6±9.1	8.7±4.6
Urology	2,328	368	51.9±9.3	7.3±4.9
Other specialty	20,604	4,166	47.3±9.7	5.4±4.0

* Plus–minus values are means ±SD. All calculations were performed with the use of a database of physicians covered by a large, multistate liability insurer. The numbers of physician-years and physician observations are reported for all physicians between the ages of 30 and 70 years during the period from 1991 through 2005.

Jena et al.

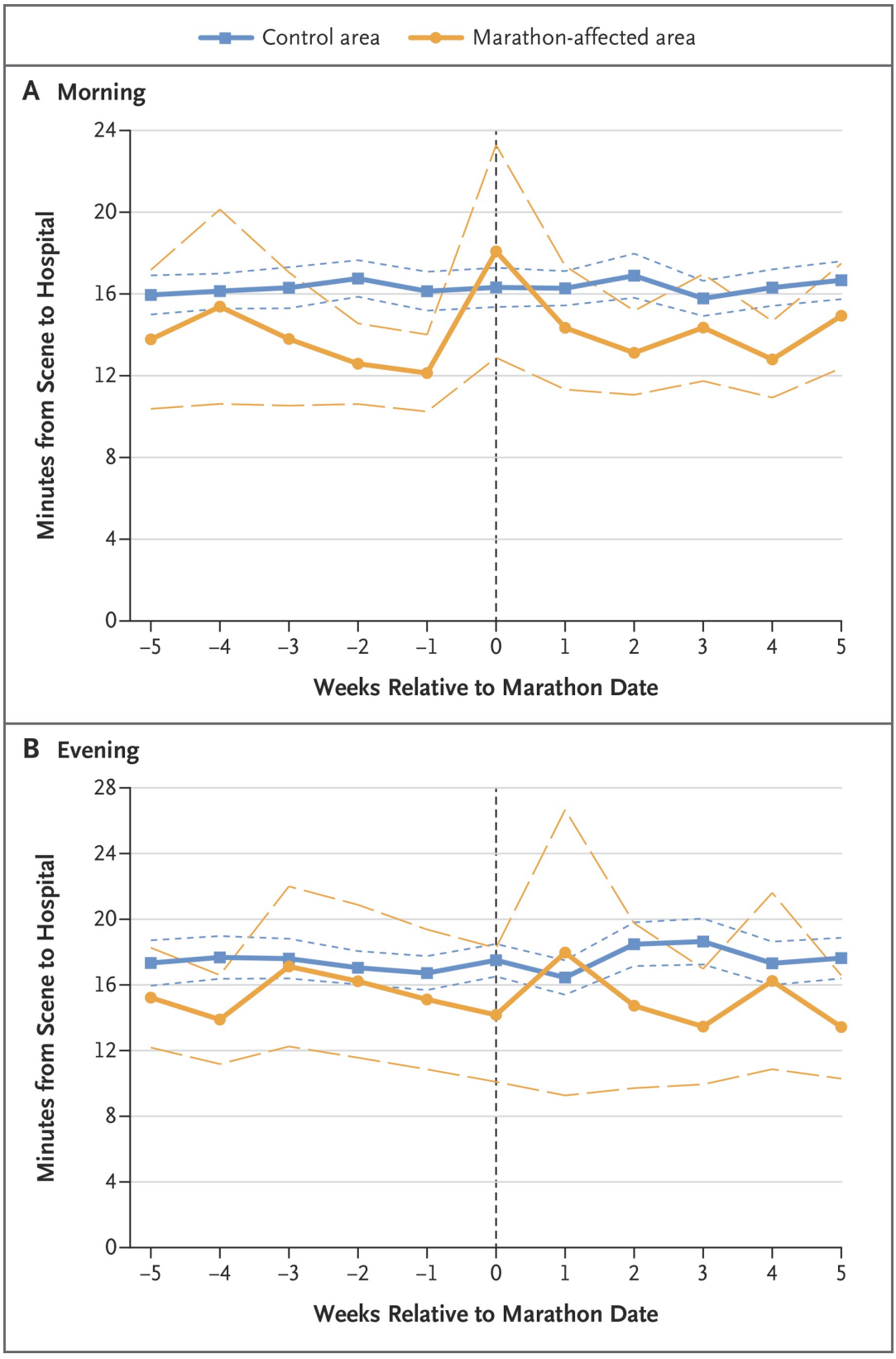
- Prespecified falsification end points: can they validate true observational associations?
  - Prasad & Jena., JAMA
    - There are several economics techniques that are particularly adept at inferring causal relationships from observational data
      - One of those tools is pre specified falsifications analyses

    - Confounding in the association of proton pump inhibitor use with risk of community-acquired pneumonia
        - Jena et al., JGIM
    - “Natural Experiments” in Health Care Research
        - Khullar & Jena., JAMA Health Forum
- **Good ideas [40:30]**
    - We have courses in statistical analysis, medical writing, etc., but we don't have courses in how to have good ideas
        - This is a disservice, since there is latent creativity in really intelligent individuals that we should be using
            - When doing these think tank activities, it's critical to keep in mind that the majority of the ideas generated will be bad
                - This is a necessary step in the process and will ultimately result in tenable outcomes

> "By kind of training your brain to think about the world in this way, when something presents itself to serendipitously, you know, absorb it in a way that you would otherwise" - Dr. Jena

    - One part of the issue that people do not want to undergo this process is that our academic culture values output > creativity
        - This is why there are a lot of subpar papers and less innovative work
            - We don't value that process of developing the art of thinking about ideas and coming up with ideas, because there's no measurable output for some period of time
    - Testing healthcare workers for latent tuberculosis: Is it evidence based, bio-plausible, both or neither?
        - Gill & Prasad., The American Journal of Medicine
- **Mortality [1:03:00]**

- Delays in emergency care and mortality during major US marathons
  - Jena et al., NEJM


Control area
Marathon-affected area
A Morning
Minutes from Scene to Hospital
24
20
16
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8
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Weeks Relative to Marathon Date
B Evening
Minutes from Scene to Hospital
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Weeks Relative to Marathon Date

Jena et al.

- Authorship Inflation in Medical Publications
  - Tilak et al., Inquiry

Table 2. Trends in Authorship According to Study Design.

	Mean no. of authors per article by year and change compared with the baseline year					
Study type	1960	1970	1980	1990	2000	2010
Single-center RCT	3.5	3.3	4.8	11.3	7.0	9.3
Unadjusted difference compared with 1960 (*P* value)		−0.2 (.95)	1.3 (.63)	7.8 (.05)	3.5 (.18)	5.8 (.04)
Adjusted difference compared with 1960 (*P* value)		−0.1 (.96)	1.3 (.63)	5.0 (.05)	3.6 (.18)	5.8 (.03)
Multi-center RCT	5.3	4.5	6.0	8.3	9.1	14.0
Unadjusted difference compared with 1960 (*P* value)		−0.8 (.88)	0.7 (.54)	3.0 (.43)	3.8 (.32)	8.7 (.02)
Adjusted difference compared with 1960 (*P* value)		−0.6 (.92)	0.6 (.52)	2.7 (.59)	3.5 (.39)	8.4 (.03)
Observational study	2.6	3.3	3.9	5.6	7.1	10.1
Unadjusted difference compared with 1960 (*P* value)		0.7 (.17)	1.3 (.01)	3.0 (<.001)	4.5 (<.001)	7.5 (<.001)
Adjusted difference compared with 1960 (*P* value)		0.6 (.14)	1.2 (.01)	2.9 (<.001)	4.4 (<.001)	7.4 (<.001)
Decision analysis/cost-effectiveness	NA	NA	2.5	3.7	4.6	9.6
Unadjusted difference compared with 1980 (*P* value)				1.2 (.68)	2.1 (.48)	7.1 (.03)
Adjusted difference compared with 1980 (*P* value)				1.5 (.61)	2.4 (.43)	8.5 (.02)
Meta-analysis	NA	6.0	1.7	4.0	4.0	5.9
Unadjusted difference compared with 1970 (*P* value)			−4.3 (.17)	−2.0 (.55)	−2.0 (.55)	−0.1 (.96)
Adjusted difference compared with 1970 (*P* value)			−4.3 (.15)	−2.0 (.54)	−2.0 (.54)	−0.2 (.93)

Note. The table reports average unadjusted number of authors per article published in each decade from 1960 to 2010, by study type. It also reports unadjusted difference in the average number of authors per article between the baseline year (1960 in most instances) and subsequent years, as well as adjusted differences estimated from publication-level multivariate linear regression of the number of authors as a function of year indicator variables and sample size of each publication. NA implies no articles of a given study type existed in our sample in that year. RCT = randomized controlled trial.

Tilak et al.

- **Debate [1:09:00]**

> "I think life is too short. You got to be grateful and be happy for what you have and I certainly am" - Dr. Jena

  - The profound difference between seeing and looking
    - TEDMED Talk by Dr. Jena
- **Other people mentioned:**
  - Vineet Arora, MD, MAPP
  - Wes Pegden
  - Steven Levitt
- **Other literature mentioned:**

Plenary Session is a podcast on medicine, oncology, & health policy.

Host: Vinay Prasad, MD MPH from University of California, San Francisco.

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