

Applying Principles of Behavioral Economics to Colorectal Cancer Screening



WEO Colorectal Cancer Screening Committee

May 17, 2024

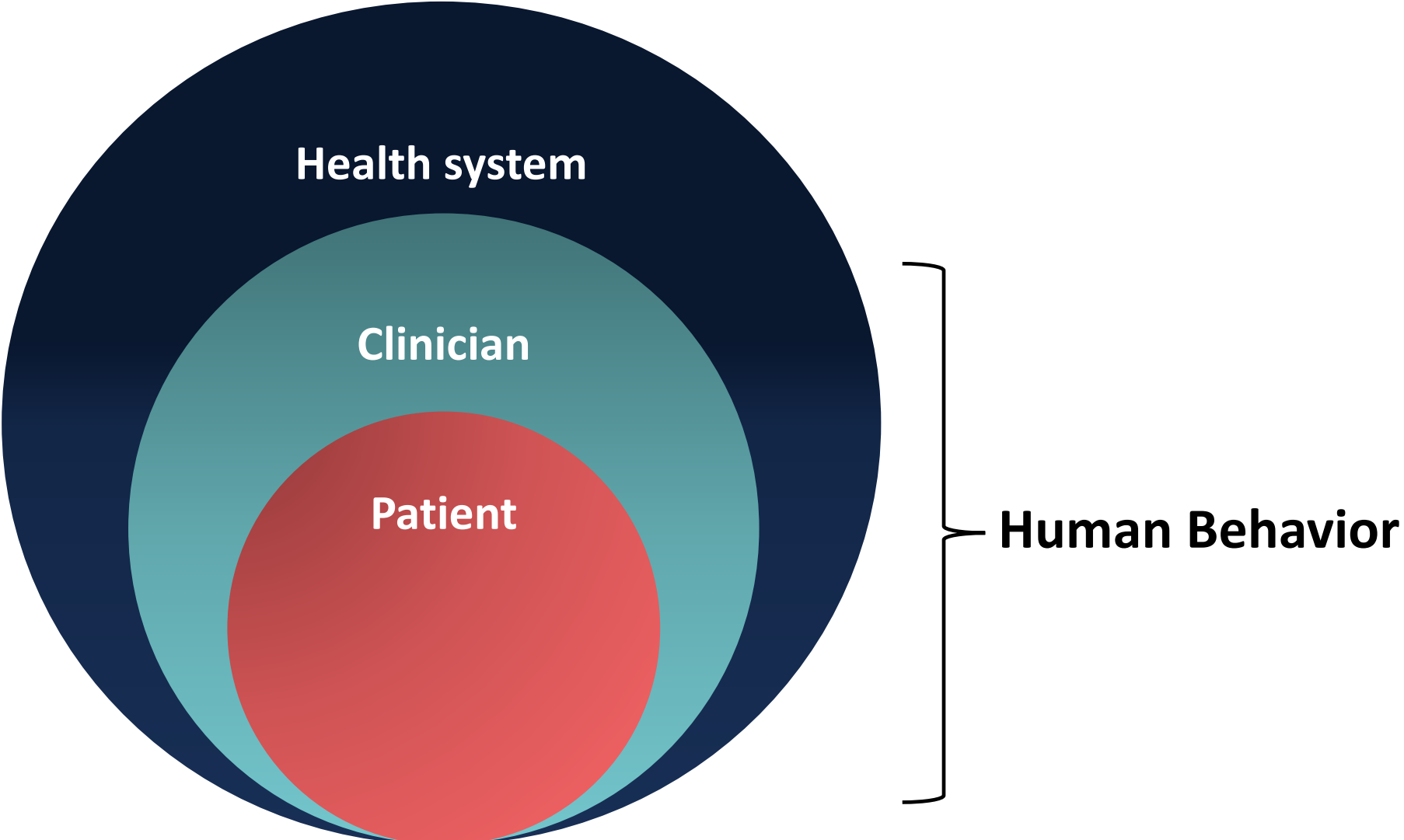
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Associate Professor of Medicine and Health Policy, University of Pennsylvania

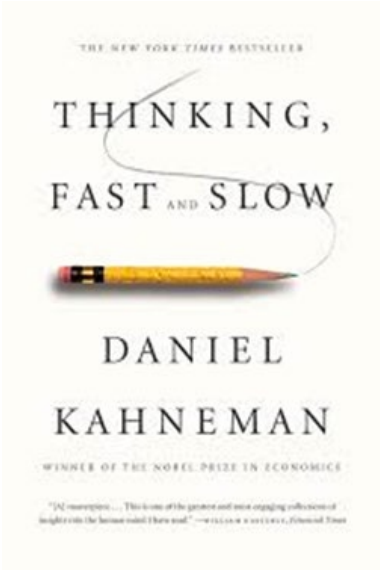
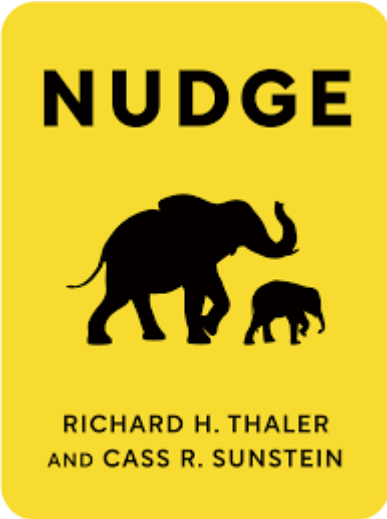
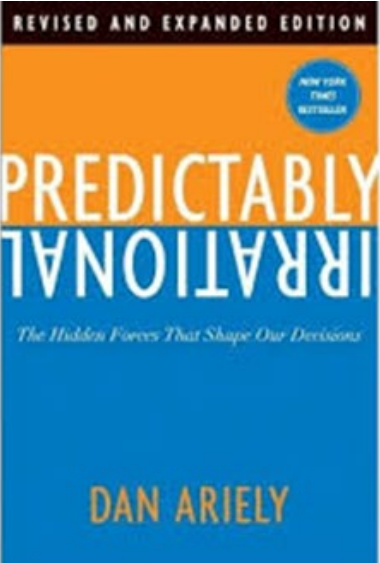
Director, Population Health Lab

Associate Chief Innovation Officer, Penn Medicine

Barriers to uptake of CRC screening



Behavioral economics



Intersection of psychology and economics showing that humans have systematic biases in thinking and acting

Present-time bias

Status quo bias

Social influence

Mehta SJ et al. CGH, 2014

Add Travel Protection For Your Trip

*Please select yes or no.

✓ Highly Recommended

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- **Peace of mind:** Insurance for loss, damage or theft of your belongings throughout your entire trip
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Choice
architecture

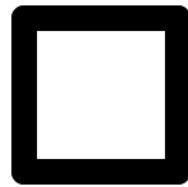
Social
norms

Financial
incentives

Colorectal cancer screening



314 primary care patients



vs.



10%

vs.

29%

opt-in

opt-out

Mehta SJ et al. AJG 2018

Hepatitis C screening



1,642 primary care patients



vs.



19%

vs.

43%

letter

letter and requisition

Mehta SJ et al. BMJ 2021

Breast cancer screening

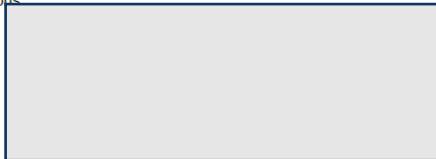
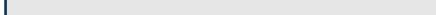


6,220 primary care women

October is Breast Cancer Awareness Month. Regular breast cancer screening saves lives by finding early changes in your breast tissue, even before you experience symptoms. Mammography is one of our most powerful tools in the fight against breast cancer and the gold standard for screening.


Our records show that you may be overdue for your mammogram.

Getting a mammogram is as easy as these two steps:

1. **Request your mammogram order.** Call the office at 609-586-6006 so your mammogram can be ordered.
2. **Schedule your mammogram.** Once your test is ordered, you can schedule your mammogram by contacting the Penn Medicine Princeton Health Radiology locations:
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Alternatively, please feel free to use your order to schedule a mammogram at the radiology facility of your choice.

If you have recently scheduled your mammogram appointment, please disregard this message. If you have already completed your screening elsewhere, please let us know by calling the office directly at 609-586-6006 so that we may update our records.


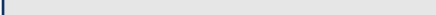
Best in health,
 MD
Princeton Medicine Physicians Primary Care
Penn Medicine

VS.

October is Breast Cancer Awareness Month. Regular breast cancer screening saves lives by finding early changes in your breast tissue, even before you experience symptoms. Mammography is one of our most powerful tools in the fight against breast cancer and the gold standard for screening.

Our records show that you may be overdue for your mammogram.

Getting a mammogram is as easy as these two steps:

1. **Request your mammogram order.** Call the office at 609-921-6410 so your mammogram can be ordered.
2. **Schedule your mammogram.** Once your test is ordered, you can schedule your mammogram by contacting the Penn Medicine Princeton Health Radiology locations:
 - 
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Alternatively, please feel free to use your order to schedule a mammogram at the radiology facility of your choice.

If you have recently scheduled your mammogram appointment, please disregard this message. If you have already completed your screening elsewhere, please let us know by calling the office directly at 609-921-6410 so that we may update our records.

Best in health,
Princeton Medicine Physicians Primary Care
Penn Medicine

12.5%

VS.

11.4%

Mehta SJ et al. JAMA IM, 2024

FOBT at VA clinic

\$5 equivalent value



Stage 2 (n = 836)

Control (n = 238)	\$5 (n = 213)	1 In 10 Chance of \$50 (n = 209)	\$500 Raffle (n = 176)
29.7 (24.0 to 35.4)	37.6 (28.2 to 47.1)	49.3 (41.6 to 57.1)	40.1 (32.0 to 48.1)
	7.9 (-0.8 to 16.6)	19.6 (10.7 to 28.6)	10.4 (1.1 to 19.6)
	0.075	<0.001	0.028



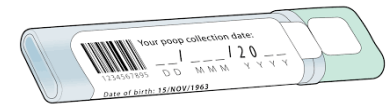
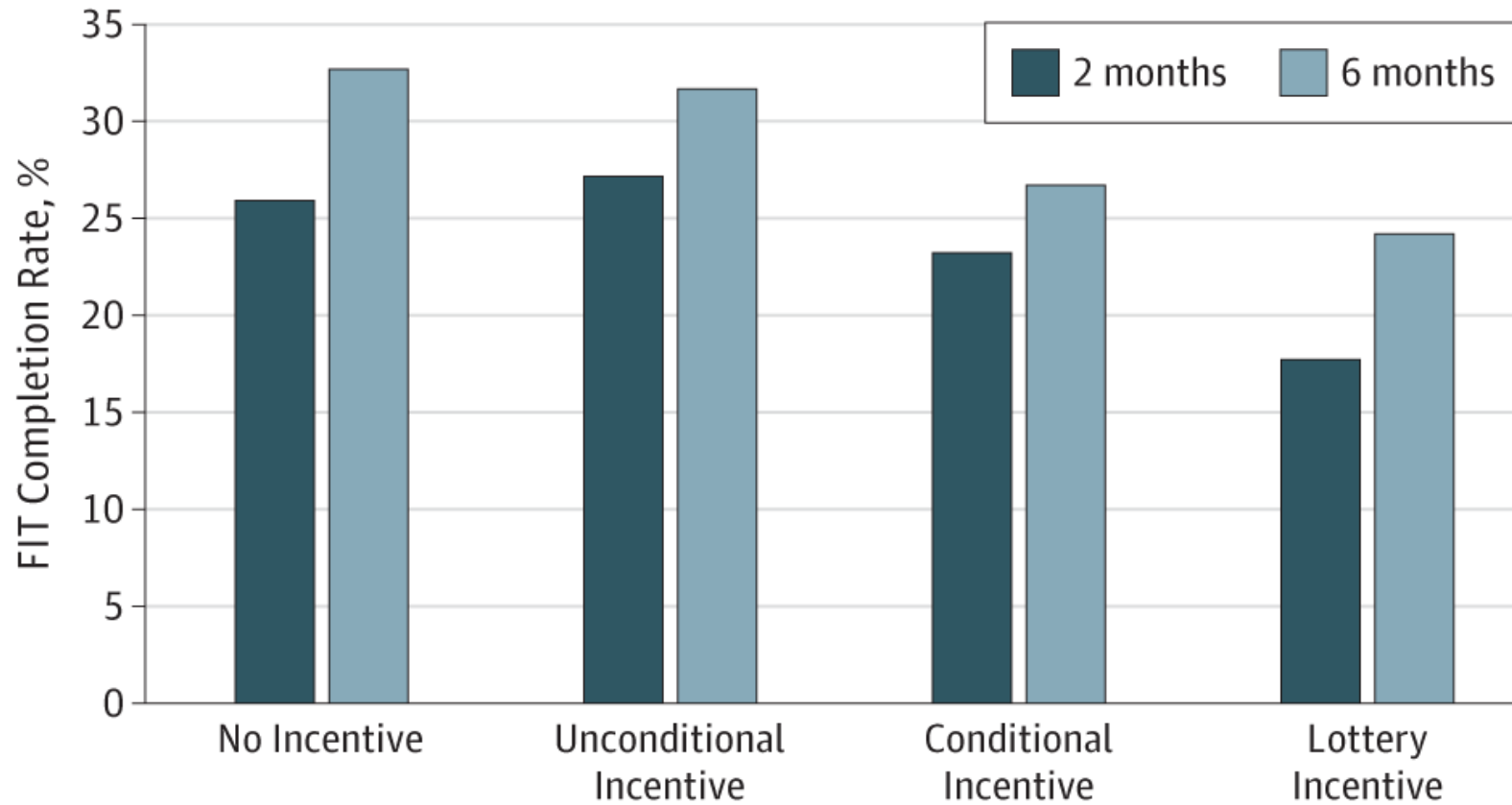
Kullgren et al. Annals of Internal Medicine, 2014

Mailed FIT outreach



897 patient RCT

\$10 equivalent value



Mehta SJ et al. JAMA Network Open, 2019

Make it the default

Reduce effort

Use social norms

Financial incentives*

Conclusion

- Behavioral economics demonstrates systematic biases that can be harnessed to improve clinical outcomes
- Opt-out framing, effort reduction, and social norms are effective behavioral interventions for screening
- Opportunity for a learning health system approach to accomplish operational and thought leadership goals with pragmatic trials

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