

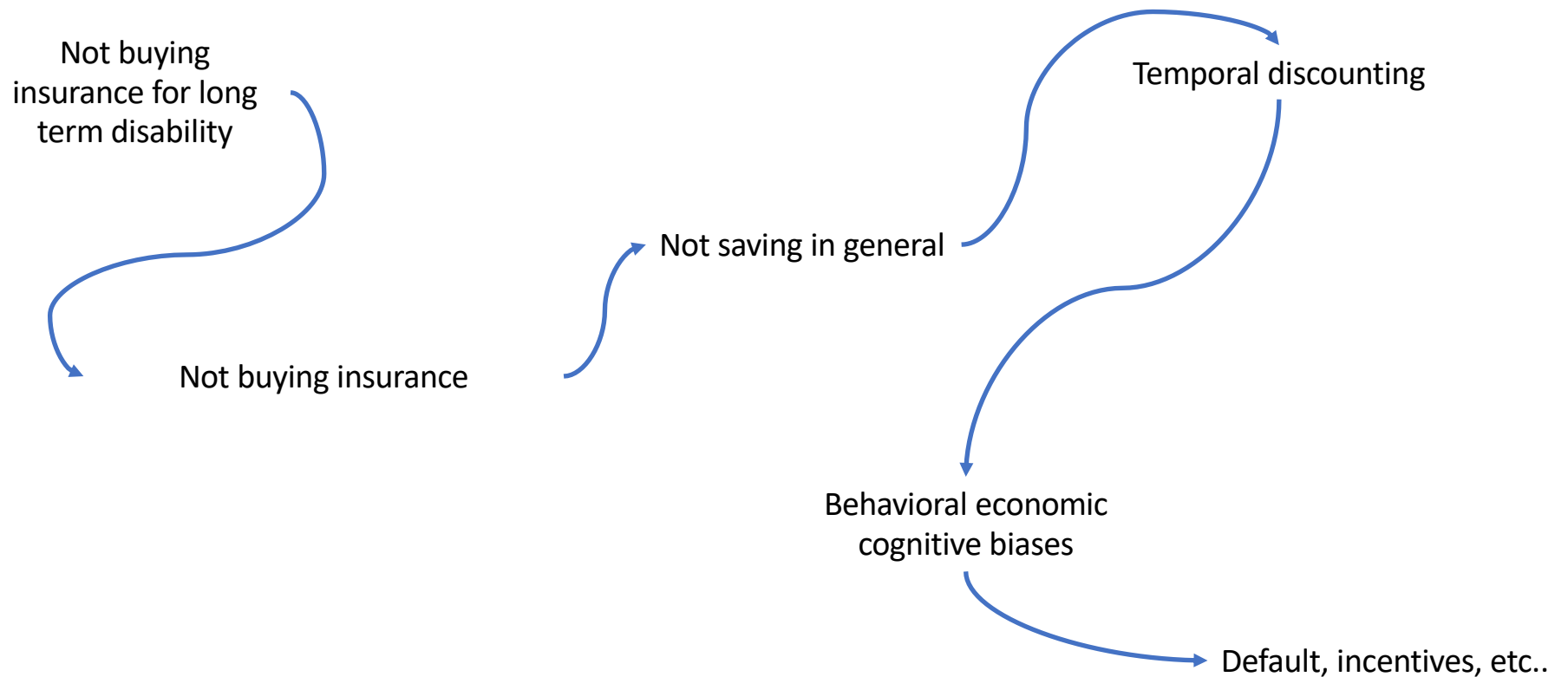
Epidemiology 239 (2019)

Lecture 3 – Understanding the Gap Using Perspectives from the Social
Sciences

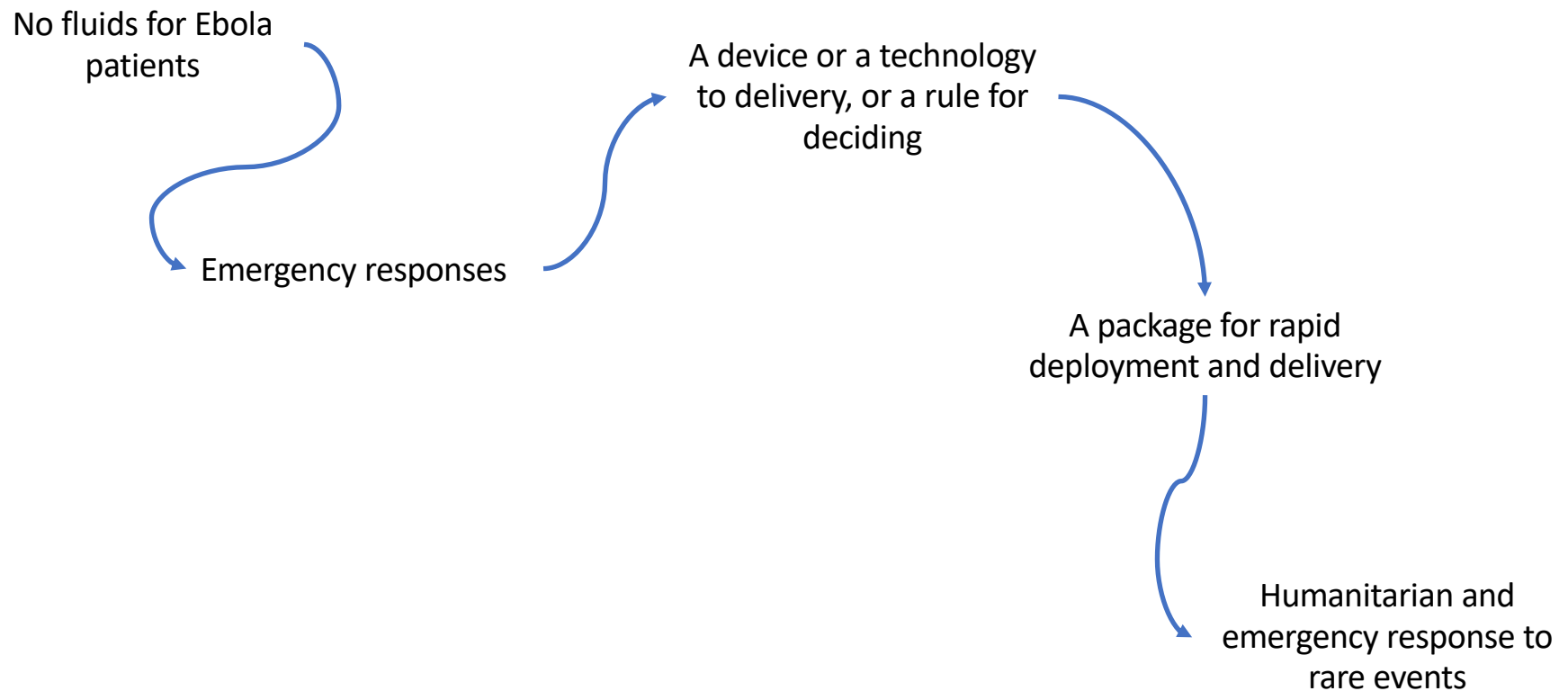
Lecture 1 and 2 - Redux

- Conceptualizing the Gap
 - Reformulate problem
 - Make it bigger and more general

Making implementation problems research-y by putting them into context



Making implementation problems research-y by putting them into context



Prioritization for
organ transplant

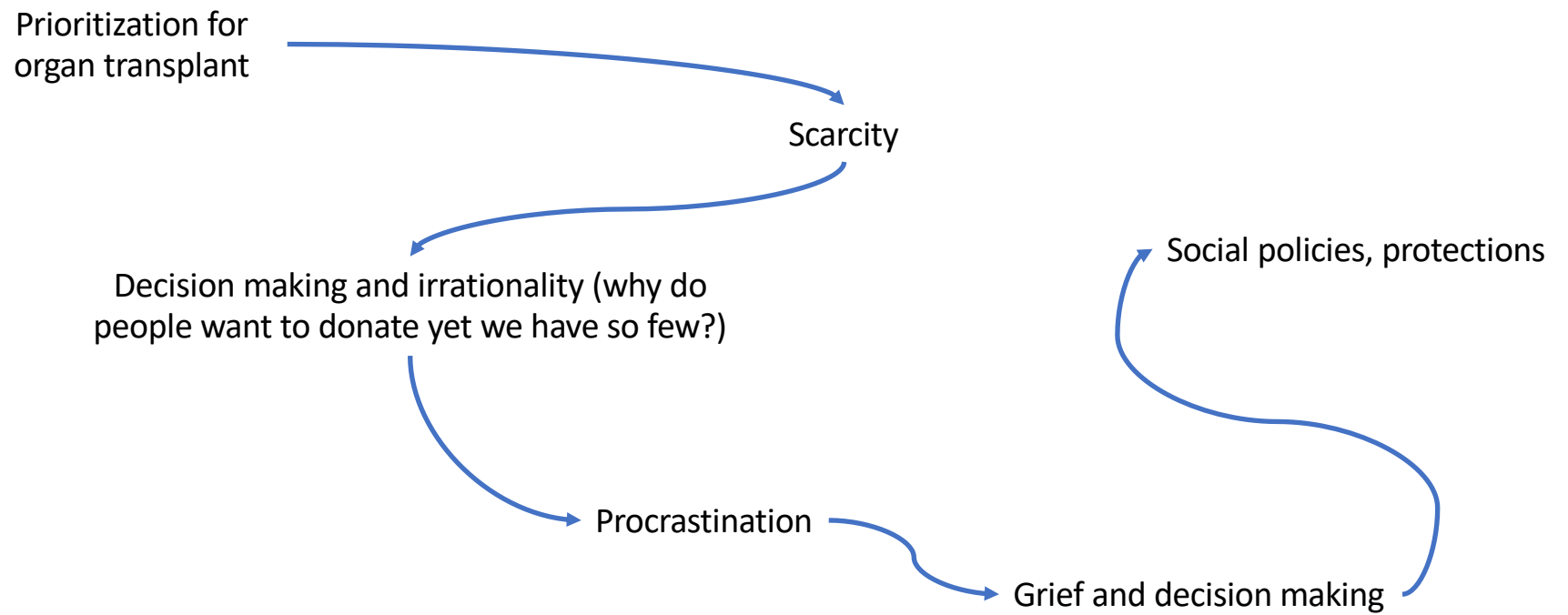
Scarcity

Decision making and irrationality (why do
people want to donate yet we have so few?)

Procrastination

Grief and decision making

Social policies, protections



Drill down on the diagnosis

- Broaden
 - Link your implementation problem to other similar problems
- Deepen
 - Understand the structural characteristics of your problem (rather than its particular form)

The implementation gap: what can we learn from perspectives from the social sciences...?

Econ	Human
	
Well-defined preferences Decisions are made to maximize utility Makes rational choices that drive behaviors	Emotional Decisions subject to biases, guilt, fairness, social comparison Gives in to temptation and whims (i.e., eats donuts vs carrots)

Kurt Nelson: Behavioral economics

<https://www.slideshare.net/kurtnelson/behavioral-economics-overview-presentation-at-tgas>

Homo Economicus

- You have a limited budget
- You want to get stuff that makes you happy
- Whether you choose something depends on how much you want it and how much it costs
- *You make rational choices*

If you build it, they will come....

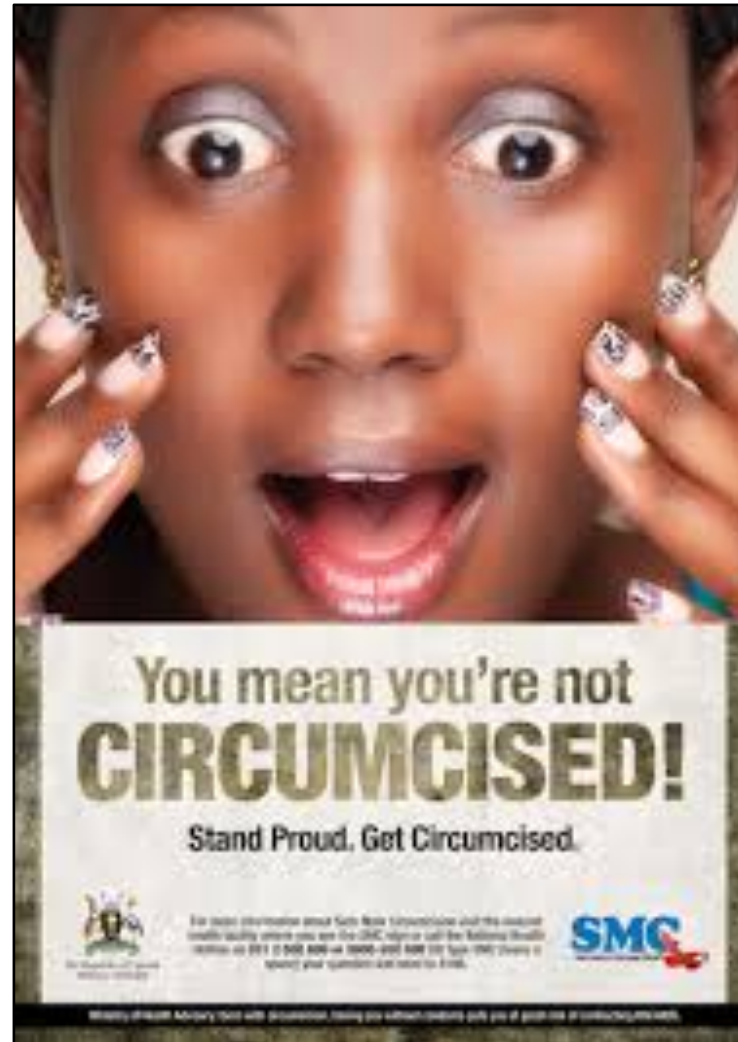
...or maybe not

- We have highly efficacious biomedical tools
- We know that people want to be healthy
- What's the problem?

Exhibit A...



Exhibit B...



What's the differential diagnosis...?

- Don't know about it (unlikely – most people know)
- Can't get it (most people have geographical access)
- Don't want it (or don't want it as much as other things)

...How can we find out more about the preferences of a population of persons living with HIV want?

Choice experiments: Understanding the Econ

- Patient preferences are inadequately understood and used in public health practice
- Demand is neglected
- A solution: the “utility”
- Choice experiments

Alternative 1: Qualitative interviews

OPEN ACCESS Freely available online

PLOS MEDICINE

Toward an Understanding of Disengagement from HIV Treatment and Care in Sub-Saharan Africa: A Qualitative Study

Norma C. Ware^{1*}, Monique A. Wyatt¹, Elvin H. Geng², Sylvia F. Kaaya³, Oche O. Agbaji⁴, Winnie R. Muyindike⁵, Guerino Chalamilla⁶, Patricia A. Agaba⁴

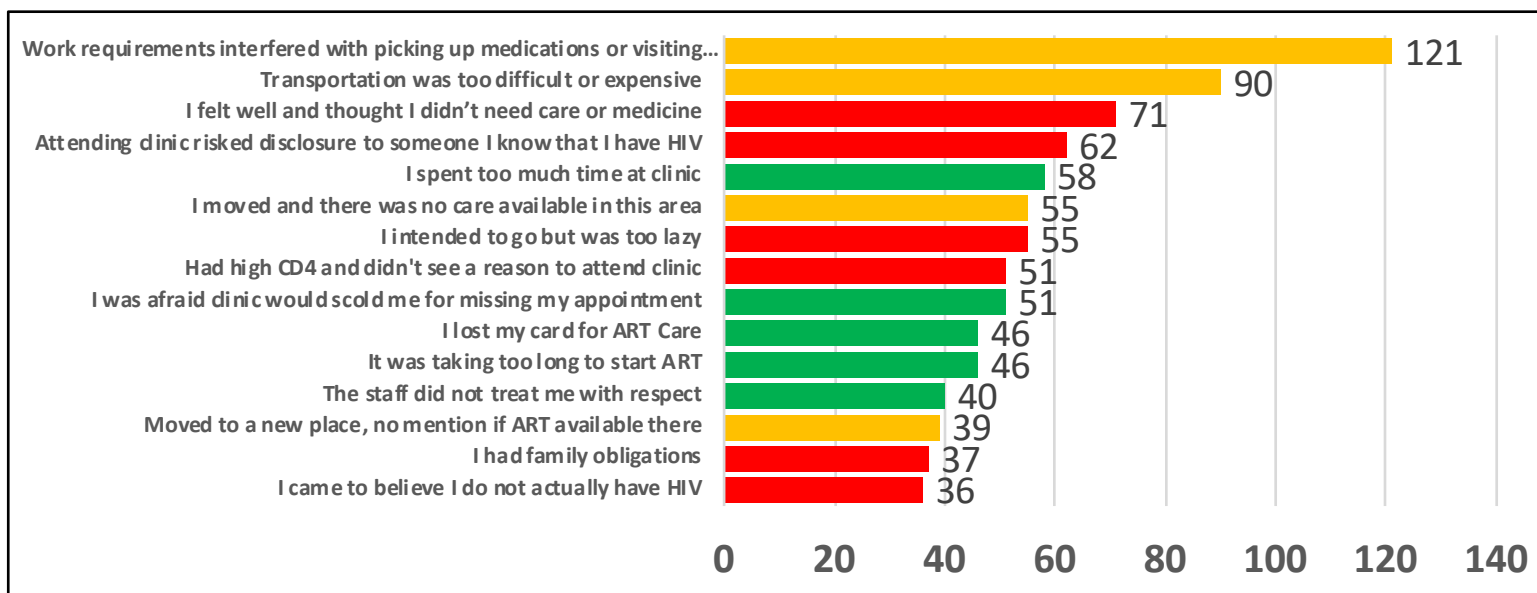
1 Harvard Medical School, Boston, Massachusetts, United States of America, **2** University of California at San Francisco, San Francisco, California, United States of America, **3** Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania, **4** Jos University Teaching Hospital, Jos University, Jos, Nigeria, **5** Mbarara Regional Referral Hospital, Mbarara University of Science and Technology, Mbarara, Uganda, **6** Management and Development for Health, Dar es Salaam, Tanzania

Abstract

Background: The rollout of antiretroviral therapy in sub-Saharan Africa has brought lifesaving treatment to millions of HIV-infected individuals. Treatment is lifelong, however, and to continue to benefit, patients must remain in care. Despite this, systematic investigations of retention have repeatedly documented high rates of loss to follow-up from HIV treatment programs. This paper introduces an explanation for missed clinic visits and subsequent disengagement among patients enrolled in HIV treatment and care programs in Africa.

Alternative 2: Surveys...

(N = 603)



Structural



Psychosocial



Clinic-based

Alternative 3: Quasi-experimental or experimental

- Randomize? Expensive, time consuming....
- Quasi experimental? Hard to capture all the variability



Some assumptions about preferences

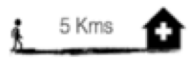
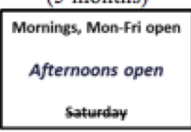


Choice experiment

- If utilities exist, can we measure them?
 - Can't ask about it
- Revealed by our choices
- So, mimic the processes of choosing
- With a choice experiment

Choice experiment

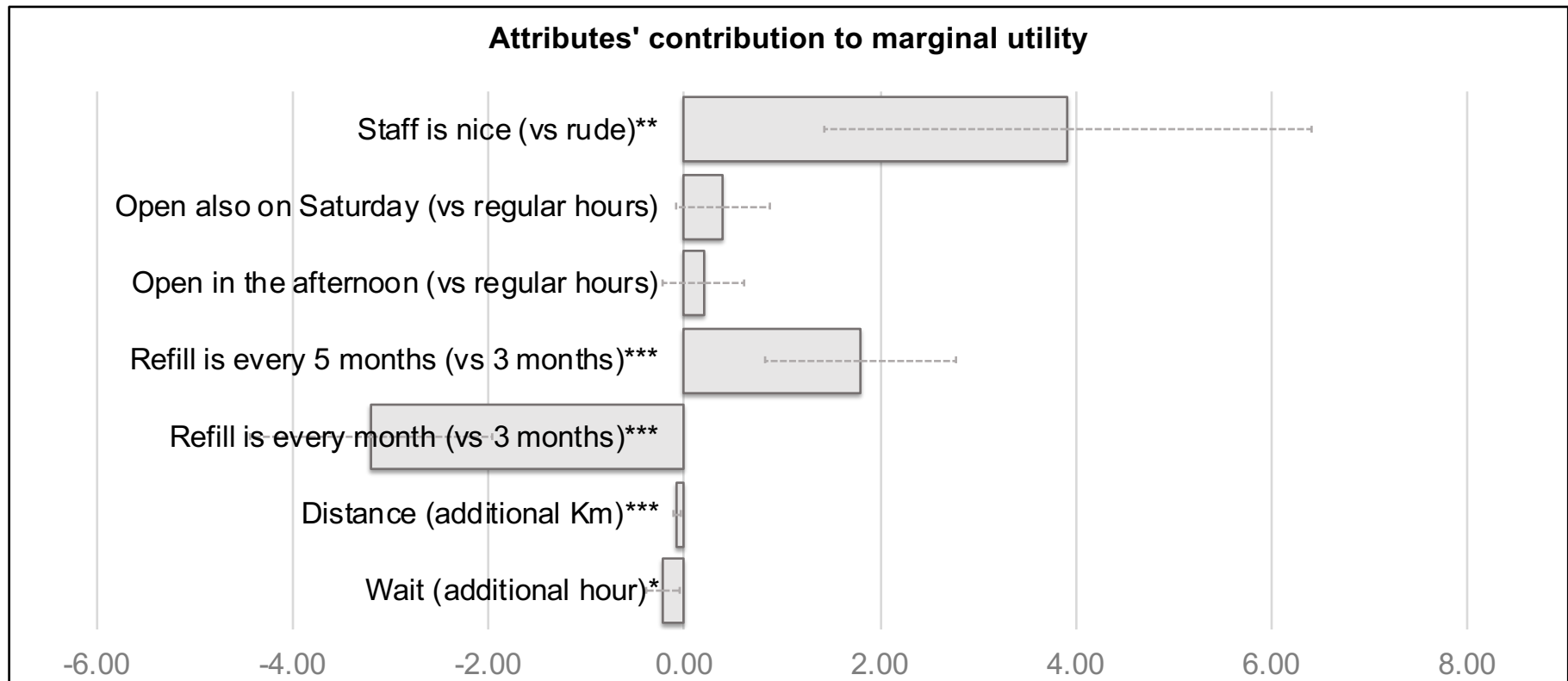
- Widely used in marketing research
- Series of choice tasks
 - Rapid
- Tells you both what and how much people prefer certain attributes
- Standardize against money and allow estimates of “willingness to pay” (how much additional someone would pay to get something)
 - Pay 1000 extra dollars to get luxurious over rustic

Attribute	Attribute	Levels	Pictorial Example
Attribute 1:	Total time spent at the facility	1 hour 3 hours 5 hours	 (3 hours)
Attribute 2:	Distance from home to facility	< 5 Kms 10 Km 20 Kms	 (5 kms)
Attribute 3:	Months of ARV you are given at each visit	1 month 3 months 5 months	 (5 months)
Attribute 4:	Time at which you could go for your visit and find the facility open and seeing patients	Regular hours: (Mornings only, Monday to Friday) Regular hours + Afternoon Regular hours+ Saturday	 (Regular hours + Afternoon)
Attribute 5:	Attitude of staff at the facility	Rude Nice	 (Rude)

“Do you prefer going to Clinic A, Clinic B, or would you rather not go to either one?”

	Clinic A	Clinic B
Total time you spend at the facility at each visit	1 hour 	3 hours 
Distance to the facility	< 5 Kms 	20 Kms 
Months of supply of ARV you are given at each visit	1 month 	3 months 
Time at which you could go for your visit and find the facility open and seeing patients	Regular hours Mornings, Mon-Fri Afternoons also Saturday also	Saturday open Mornings, Mon-Fri Afternoons also <i>Saturday open</i>
Attitude of staff at the facility	Rude 	Nice 

Choice Experiment Results (N=279)



Willingness to Wait Analysis

	Coefficient	Std. Error	WT Wait
Wait (additional hour)*	-0.20	0.09	
Distance (additional Km)***	-0.07	0.02	-0.3
Refill is every month (vs 3 months)***	-3.10	0.53	-15.5
Refill is every 5 months (vs 3 months)***	1.51	0.40	7.6
Open in the afternoon (vs regular hours)	0.16	0.18	
Open also on Saturday (vs regular hours)	0.42	0.26	
Staff is nice**	3.15	1.20	15.8

DCE for implementation science

- A technique for understanding patient perspectives
- A philosophy that what people wants matters
- A big change in paradigm for public health
- Broadening our disciplinary lens can be useful
- Examples
 - Place of childbirth Tanzania
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2724466/>
 - <https://www.ncbi.nlm.nih.gov/pubmed/26262840>
- Standards
 - <https://www.ispor.org/ValueInHealth/ShowValueInHealth.aspx?issue=3551E3F3-83A8-4895-9415-5272AF29A9DF>
 - <https://www.ispor.org/Conjoint-Analysis-Statistical-Methods-Guidelines.pdf>

From Econ to Human

Econ vs. Human

- Even though basic economic theory is powerful, there is a lot of interest in a new understanding of behavior
- Predictably irrational – more useful than economic “laws”
- Review salient concept
- Review applications in health

Problem: we don't do what we want to do

- General issue in health....

- Exercise
- Obesity
- Smoking cessation
- Drug use
- Medication adherence
- Etc....

Temporal discounting

- 500 in six months or 200 today
- 500 in six months or 300 today
- 500 in six months or 400 today
- 500 in six months or 450 today
- 500 in six months or 475 today
- 500 in six months or 490 today

Temporal discounting: Hyperbolic

- 10 USD today vs. 11 USD in one week
- 10 USD in 1 year vs. 11 in 1 year and a week

Temporal discounting

- Everyone discounts
- Different people have different discount rates
- That discount rate is not exponential but rather hyperbolic

Thursday

Friday

Saturday

Far future

Stressful week for
a 19 year old in
college



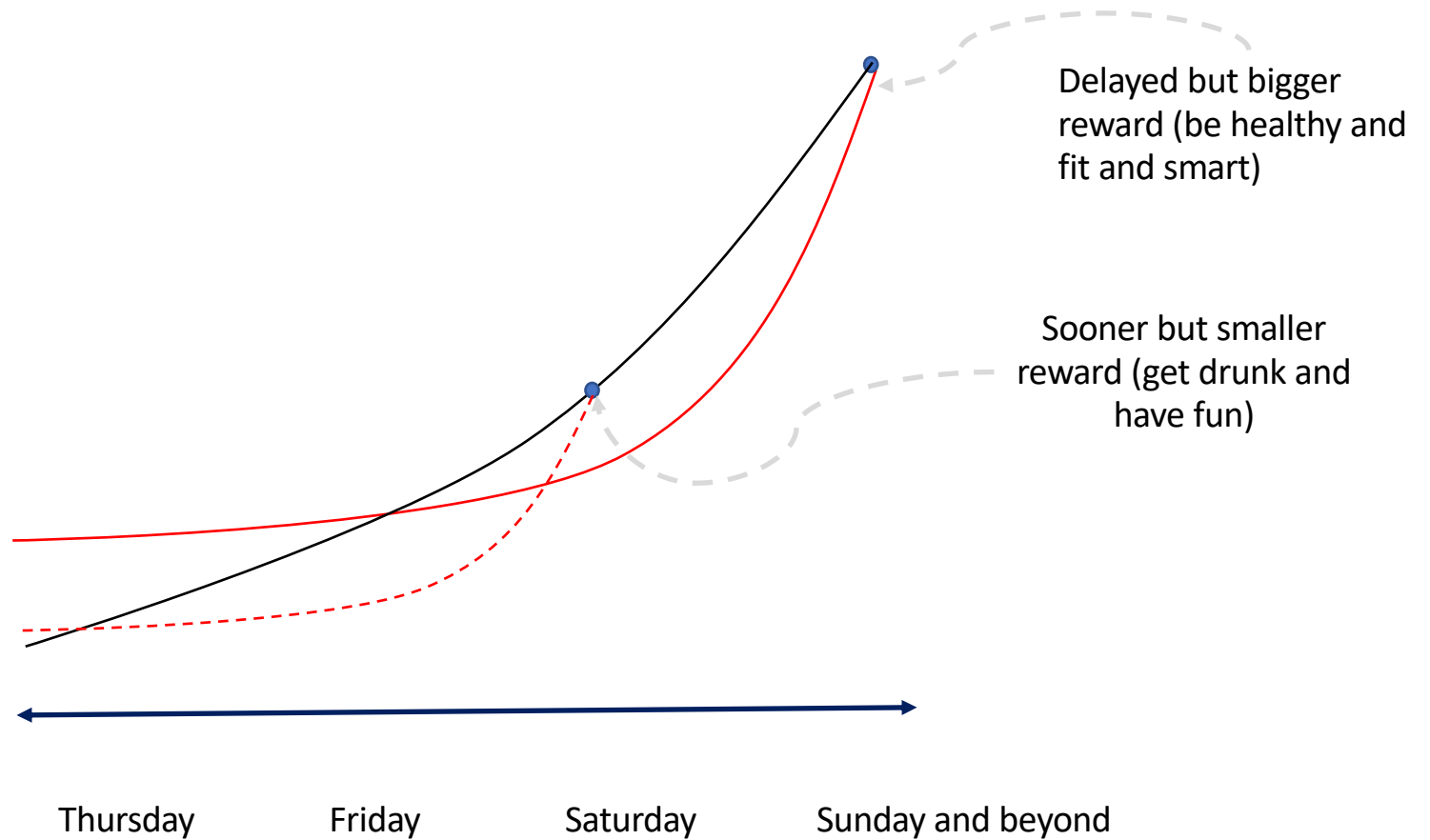
Friends are going
drinking and partying all
night – but you decide
to stay home and be
healthy and study

Plan to go on a
trail running in
morning to be
fit and then
goto cross fit
after

**Be healthy and smart and
fit and buff!!**



Value to you



Norms: People look to others for cues

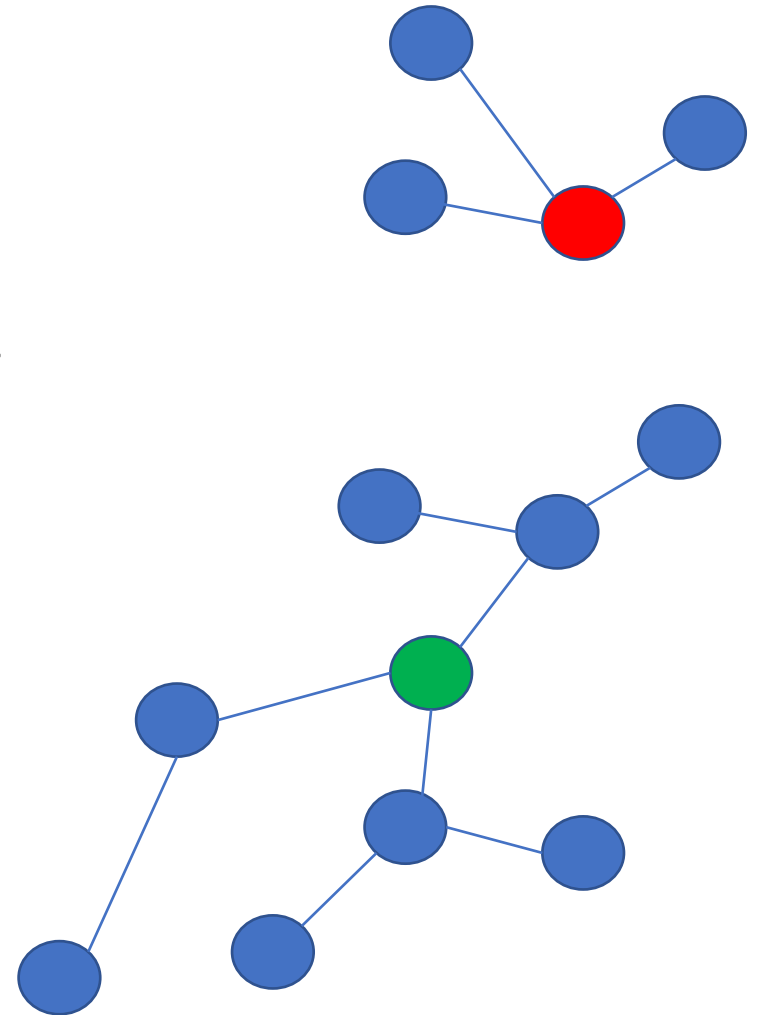
- People tend to do what they think other people are doing (or thinking)
- If you are in a room with smoke alone – you report it, but if you are in a room with two other people doing nothing you won't
- **Latane** Journal of Personality and Social Psychology, Vol 10(3), Nov 1968, 215-221

Social norms in Tanzania

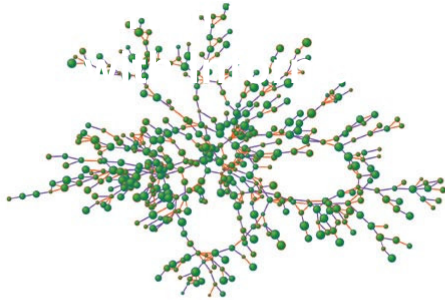
- Circumcision
- 50% risk reduction in HIV acquisition for men
- Like a vaccine.... (except not really)

Sociometric mapping

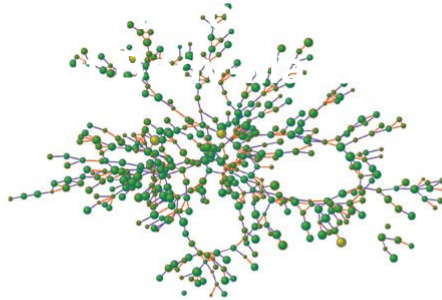
- Name generators to identify ties
 - “If you had a problem with [X], whose value or opinion do you most value?”
- Yields “nodes” and “edges” (which can be directed or non directed)
- Node characteristics
 - How many nodes is a given node connected to
- Network characteristics
 - The characteristics of the network



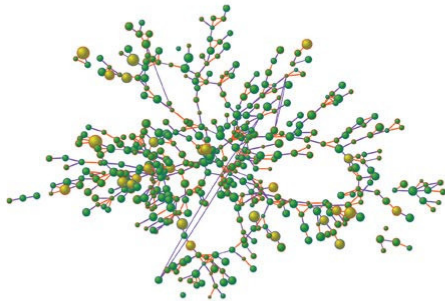
A 1975



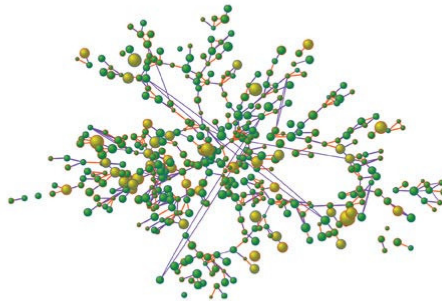
B 1980



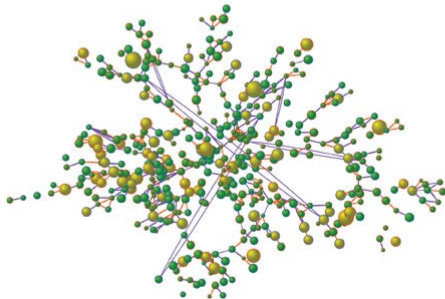
C 1985



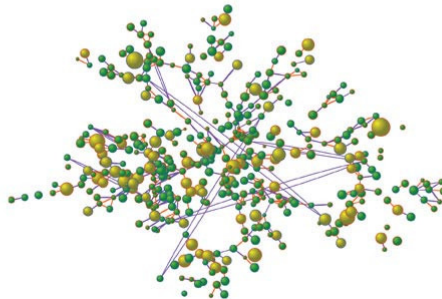
D 1990



E 1995



F 2000



Christakis NA, Fowler JH. N Engl J Med 2007;357:370-379.





Educating religious leaders to promote uptake of male circumcision in Tanzania: a cluster randomised trial



Jennifer A Downs, Agrey H Mwakisole, Alphonse B Chandika, Shibide Lugoba, Rehema Kassim, Evarist Laizer, Kinanga A Magambo, Myung Hee Lee, Samuel E Kalluvya, David J Downs, Daniel W Fitzgerald

Summary

Lancet 2017; 389: 1124–32

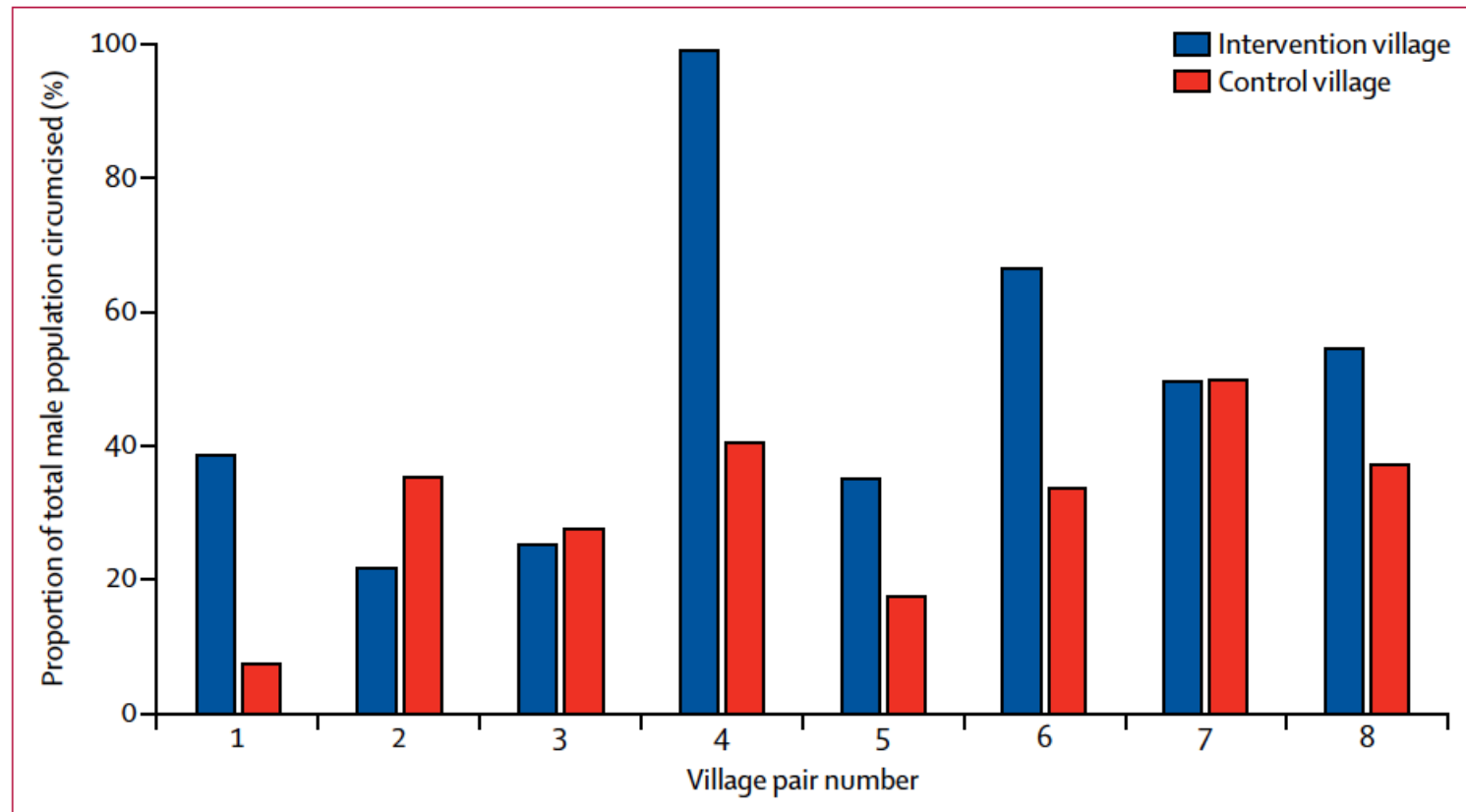
Published Online

February 14, 2017

[http://dx.doi.org/10.1016/](http://dx.doi.org/10.1016/S0140-6736(16)32055-4)

S0140-6736(16)32055-4

Background Male circumcision is being widely deployed as an HIV prevention strategy in countries with high HIV incidence, but its uptake in sub-Saharan Africa has been below targets. We did a study to establish whether educating religious leaders about male circumcision would increase uptake in their village.



	Intervention villages (n=30 889)	Control villages (n=19 984*)	p value
Age (years)	15 (12–18)	15 (12–19)	0.8
>25 years	2187 (7.1%)	1341 (6.8%)	0.44
Marital status			
Married	7588 (24.6%)	6522 (32.6%)	0.001
Single	2705 (8.8%)	1721 (8.6%)	0.67
Minor living with parents	19 049 (61.7%)	11 688 (58.5%)	0.052
Religion			
Muslim	828 (2.7%)	1060 (5.3%)	0.85
Christian	25 619 (82.9%)	16 196 (81.0%)	0.76
None	2974 (9.6%)	2700 (13.5%)	0.94
Reasons for seeking circumcision			
To promote own health	360 (1.2%)	457 (2.3%)	0.56
Heard about it in church	9527 (30.8%)	132 (0.7%)	<0.0001
Heard about it from a friend	5937 (19.2%)	2971 (14.9%)	0.49
Heard about it from a teacher	3792 (12.3%)	1345 (6.7%)	0.41
Heard about it from girlfriend or wife	556 (1.8%)	74 (0.4%)	0.002
Data are median (IQR) or number (%), unless otherwise stated. *Demographic data from one control village was lost.			
Table 3: Differences in male individuals who were circumcised in intervention and control villages, according to demographic characteristics and reasons for seeking circumcision			

Research Transparency and Reproducibility Training (RT2)
Organizing Committee Meeting

Date: Monday, April 16, 2018 10AM-11AM PT

Dial In: Conference Number: 724-707-3952; PIN: 51760

Location: UC Berkeley Giannini Hall 215

Committee Members:



Name	Institution	Participation
Ted Miguel	UC Berkeley	Participated – <i>pre-meeting feedback</i>
Temina Madon	BITSS/CEGA	Participated – <i>pre-meeting feedback</i>
Brian Nosek	COS	Participated
Garret Christensen	BITSS	Participated
Kevin Esterling	UC Riverside	No additional comments
Maya Petersen	UC Berkeley	No additional comments
Elvin Geng	UCSF	No response
John Ioannidis	Stanford/METRICS	No response

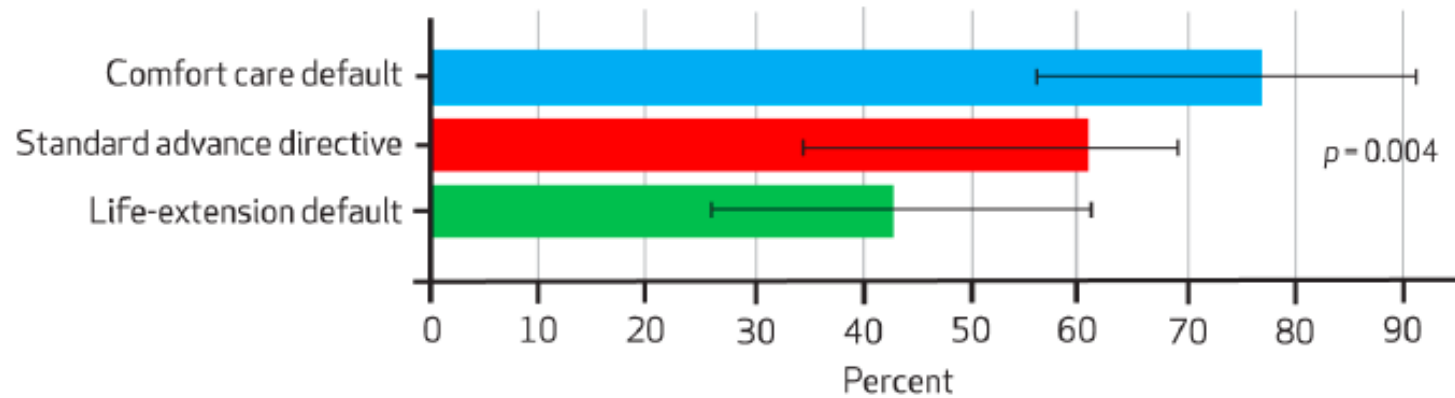


BITSS staff - Kelsey Mulcahy (Manager) and Jen Sturdy (Advisor) - led the call.

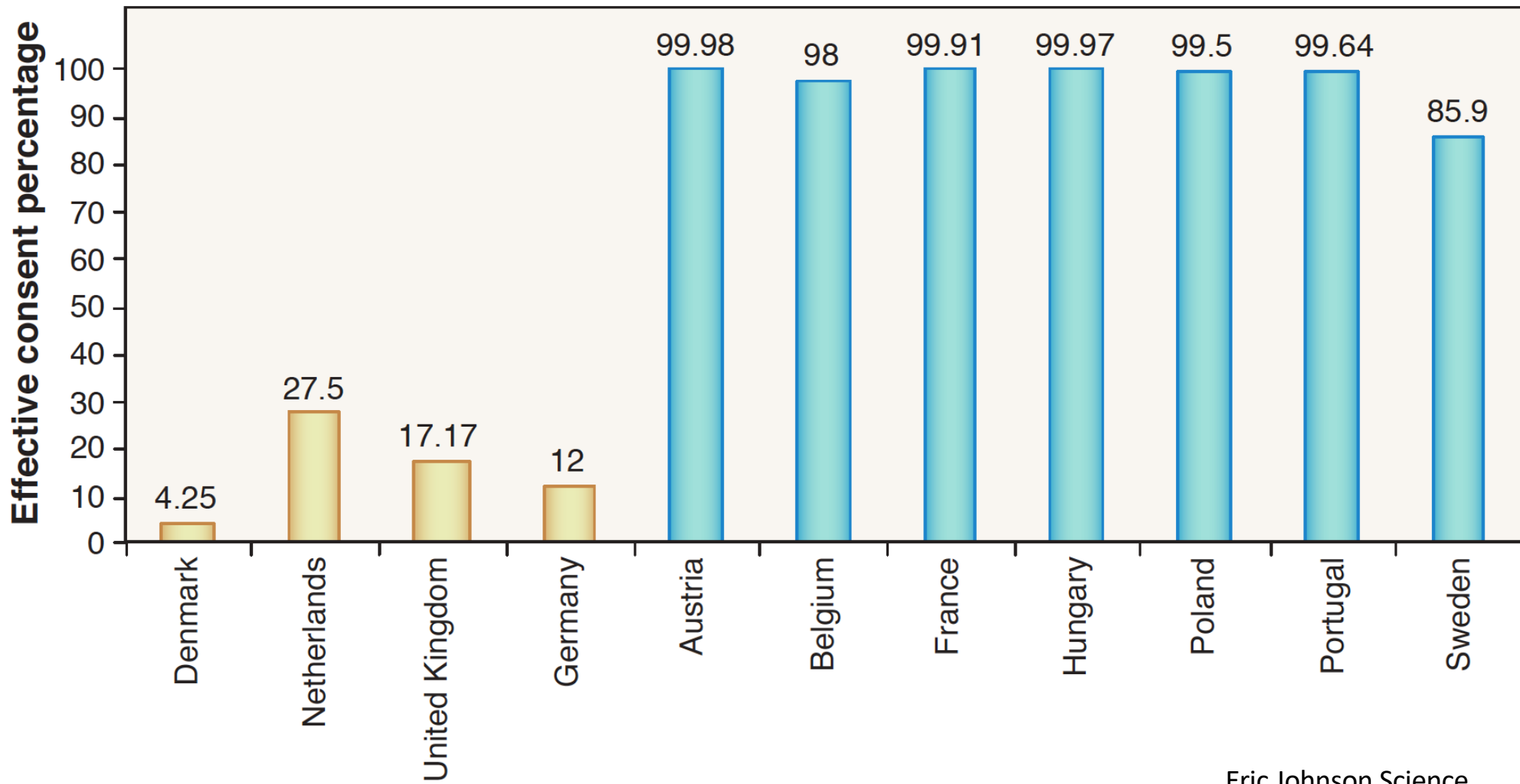
Norms...

- Cialdini's error
 - Statement: Drunk drivers are everywhere! It's an urgent problem! We need to stop it!
 - Subtext: Everyone is doing it.
- What's wrong with the following public health messages?
- "Syphilis rates are out of control! Use a condom!"
- "Young African-American MSM are at high risk (i.e., having condomless sex) for HIV so use PrEP!"

Defaults



Halpern, Scott D., et al. "Default options in advance directives influence how patients set goals for end-of-life care." *Health Affairs* 32.2 (2013): 408-417.

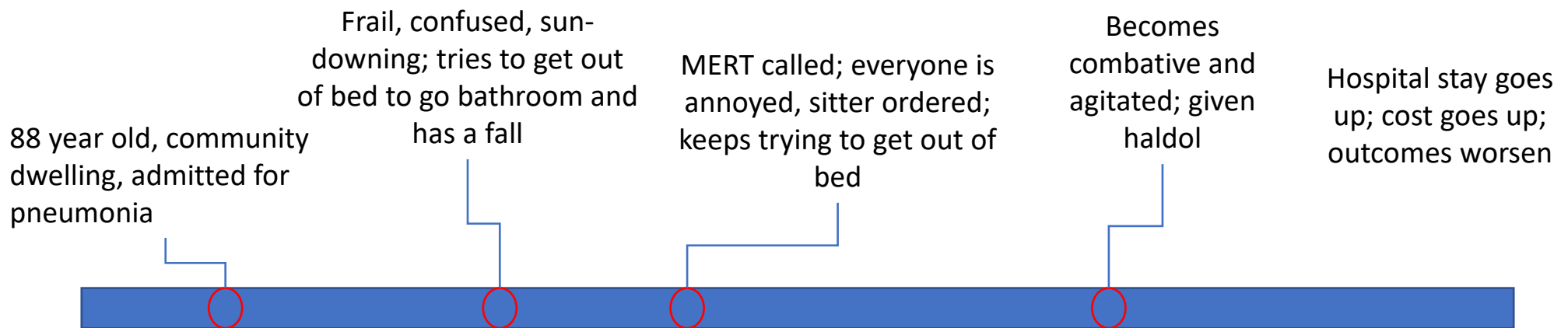


Eric Johnson Science

Control Condition	Date Plan Condition	Time Plan Condition																														
[Company Name] IS HOLDING A FREE FLU SHOT CLINIC. Flu shots will be available on site at the [location of relevant free flu shot clinic] at the following times: <table> <tr> <td>Monday, October 26th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Wednesday, October 28th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Friday, October 30th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Tuesday, November 3rd</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Thursday, November 5th</td> <td>7:00 am – 3:30 pm</td> </tr> </table>	Monday, October 26th	7:00 am – 3:30 pm	Wednesday, October 28th	7:00 am – 3:30 pm	Friday, October 30th	7:00 am – 3:30 pm	Tuesday, November 3rd	7:00 am – 3:30 pm	Thursday, November 5th	7:00 am – 3:30 pm	[Company Name] IS HOLDING A FREE FLU SHOT CLINIC.  Many people find it helpful to make a plan for getting their shot. You can write yours here: , (day of the week) (month) (day) Flu shots will be available on site at the [location of relevant free flu shot clinic] at the following times: <table> <tr> <td>Monday, October 26th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Wednesday, October 28th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Friday, October 30th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Tuesday, November 3rd</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Thursday, November 5th</td> <td>7:00 am – 3:30 pm</td> </tr> </table>	Monday, October 26th	7:00 am – 3:30 pm	Wednesday, October 28th	7:00 am – 3:30 pm	Friday, October 30th	7:00 am – 3:30 pm	Tuesday, November 3rd	7:00 am – 3:30 pm	Thursday, November 5th	7:00 am – 3:30 pm	[Company Name] IS HOLDING A FREE FLU SHOT CLINIC.  Many people find it helpful to make a plan for getting their shot. You can write yours here: , at (day of the week) (month) (day) (time) Flu shots will be available on site at the [location of relevant free flu shot clinic] at the following times: <table> <tr> <td>Monday, October 26th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Wednesday, October 28th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Friday, October 30th</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Tuesday, November 3rd</td> <td>7:00 am – 3:30 pm</td> </tr> <tr> <td>Thursday, November 5th</td> <td>7:00 am – 3:30 pm</td> </tr> </table>	Monday, October 26th	7:00 am – 3:30 pm	Wednesday, October 28th	7:00 am – 3:30 pm	Friday, October 30th	7:00 am – 3:30 pm	Tuesday, November 3rd	7:00 am – 3:30 pm	Thursday, November 5th	7:00 am – 3:30 pm
Monday, October 26th	7:00 am – 3:30 pm																															
Wednesday, October 28th	7:00 am – 3:30 pm																															
Friday, October 30th	7:00 am – 3:30 pm																															
Tuesday, November 3rd	7:00 am – 3:30 pm																															
Thursday, November 5th	7:00 am – 3:30 pm																															
Monday, October 26th	7:00 am – 3:30 pm																															
Wednesday, October 28th	7:00 am – 3:30 pm																															
Friday, October 30th	7:00 am – 3:30 pm																															
Tuesday, November 3rd	7:00 am – 3:30 pm																															
Thursday, November 5th	7:00 am – 3:30 pm																															
Monday, October 26th	7:00 am – 3:30 pm																															
Wednesday, October 28th	7:00 am – 3:30 pm																															
Friday, October 30th	7:00 am – 3:30 pm																															
Tuesday, November 3rd	7:00 am – 3:30 pm																															
Thursday, November 5th	7:00 am – 3:30 pm																															

Conclusions

- If you want to change behavior
 - Think demand side
 - Consider using insights about behaviors from behavioral economics
-
- For homework, revisit diagnosis.



"I know that nurse, he's slow and lazy, didn't respond on time. What a jerk."

"Unit manager is too lenient, the nurses get away with anything"

Restructure the environment (ACE unit); home based care; policy change

Managerial

That intern is terrible – he'll order haldol on anyone just so he can go back to bed

Review admission criteria; set up committee to do root cause analysis on all falls

Quality Improvement

We need to start measuring the number of falls

Restrict use of restraints; require sign off for any sedating agents from chief resident

Apply CFIR – consider policy, systems, environment; interventions, etc.

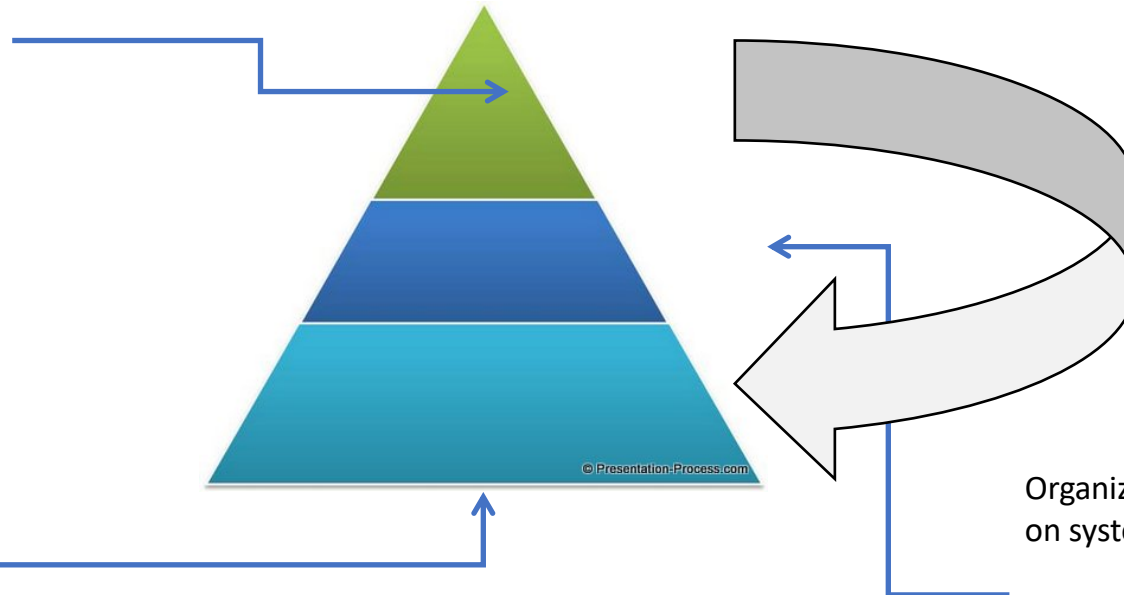
Implementation Science

Understand health worker psychology – look at TDF

Ways of Solving Problems with Implementation

Science

- Generalizable inferences
- Public knowledge
- Use of theories and framework links to a larger and longer discourse
- Draw from and contribute to general, public knowledge



Day to day managerial practices

- Business world
- “Leadership”

Organized strategies based on systematic assessments

- Quality improvement
- Incentivization
- McKinsey