

# ***#SocialQI: Simple Solutions for Improving Your Healthcare***

Presented by:

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**May 2013**



# Outline

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1. Re-defining Quality
2. Why Does Healthcare Quality Suffer
3. Introducing SocialQI
4. One Part – Social Network Science
5. One Part – Behavioral Science
6. How Does SocialQI Become the New Norm in Healthcare?



# *Re-Defining Healthcare Quality*

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## Exhibit ES-1. Overall Ranking

Country Rankings	
	1.00-2.33
	2.34-4.66
	4.67-7.00



	AUS	CAN	GER	NETH	NZ	UK	US
<b>OVERALL RANKING (2010)</b>	3	6	4	1	5	2	7
<b>Quality Care</b>	4	7	5	2	1	3	6
Effective Care	2	7	6	3	5	1	4
Safe Care	6	5	3	1	4	2	7
Coordinated Care	4	5	7	2	1	3	6
Patient-Centered Care	2	5	3	6	1	7	4
<b>Access</b>	6.5	5	3	1	4	2	6.5
Cost-Related Problem	6	3.5	3.5	2	5	1	7
Timeliness of Care	6	7	2	1	3	4	5
<b>Efficiency</b>	2	6	5	3	4	1	7
<b>Equity</b>	4	5	3	1	6	2	7
<b>Long, Healthy, Productive Lives</b>	1	2	3	4	5	6	7
<b>Health Expenditures/Capita, 2007</b>	\$3,357	\$3,895	\$3,588	\$3,837*	\$2,454	\$2,992	\$7,290

Note: \* Estimate. Expenditures shown in \$US PPP (purchasing power parity).

Source: Calculated by The Commonwealth Fund based on 2007 International Health Policy Survey; 2008 International Health Policy Survey of Sicker Adults; 2009 International Health Policy Survey of Primary Care Physicians; Commonwealth Fund Commission on a High Performance Health System National Scorecard; and Organization for Economic Cooperation and Development, OECD Health Data, 2009 (Paris: OECD, Nov. 2009).

# My Father's Health Journey

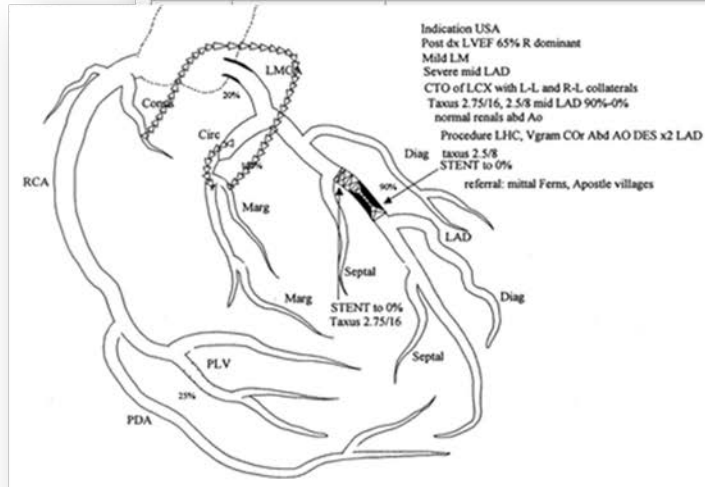




# My Father's Record

MEDICAL HISTORY		
Leading up to this point, over a period of time I noticed that mowing the lawn and washing the car was leading to radiant pain across the chest and upper arms. I would guess at least as early as summer 2003.		
06/22/04: Nurse	mentioned the pain, leading to the stress tests	
07/19/04: Cardiologist	Regular Stress test—clean	
08/09/04: Nurse	put on Lipitor	
08/13/04: Cardiologist	Nuke Stress test—clean	
09/27/04: Nurse	definitely follow up to Lipitor—taken off	
10/07/04: Nurse	follow up to Lipitor—numbers back to sta	
02/18/05: ER	Severe chest pains—EKG fine had pain sto	
02/23/05: Gastro	Performed Endoscopy	
03/09/05: Gastro	Follow up to Endoscopy—stay with Aciphex—definite ulcers/hiatal	
03/15/05: Nurse	Echocardiogram	
03/15/05: Cardiologist	recommends Cath. tho' nothing indicative—Rx Niaspan 1gm—start with 500 mg. samples	
03/23/05:	Things just got a whole lot more interesting	

Test Name	In Range	Out of Range	Reference Range	Lab
LIPID PANEL				
TRIGLYCERIDES	123		<150 mg/dL	TP
CHOLESTEROL, TOTAL		101 L	125–200 mg/dL	TP
HDL CHOLESTEROL		23 L	> OR = 40 mg/dL	TP
LDL-CHOLESTEROL	53		<130 mg/dL (calc)	TP
DESIRABLE RANGE <100 MG/DL FOR PATIENTS WITH CHD OR DIABETES AND <70 MG/DL FOR DIABETIC PATIENTS WITH KNOWN HEART DISEASE.				



a collateral coronary artery. Cardiologist could not perform angioplasty on the artery. Stayed  
ery of prescriptions.

Start taking the 1<sup>st</sup> 3, 1x day @ dinner, and include Ecotrin with nighttime regimen

DL/LDL ratio should be top target. Still need to settle Hiatal/Ulcer issues

done, tingle both arms/lower right jaw

if Gall-Bladder—set it up with Bucks Diagnostics. Get cardiologist appt moved up to 4/7

ready, but too low @ .29, and ratio above preferred 5.0--Didn't finish dinner—reflux?

better at raising HDL. Concerned about continuing pain and no exercise.

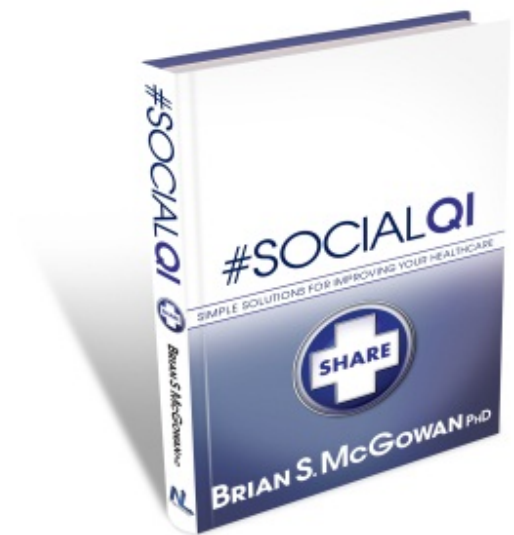
avachol—add Crestor 10 mg. /-drop Ecotrin—//add 81 mg Aspirin/-add Plavix 75 mg

# *Why Does Healthcare Quality Suffer?*

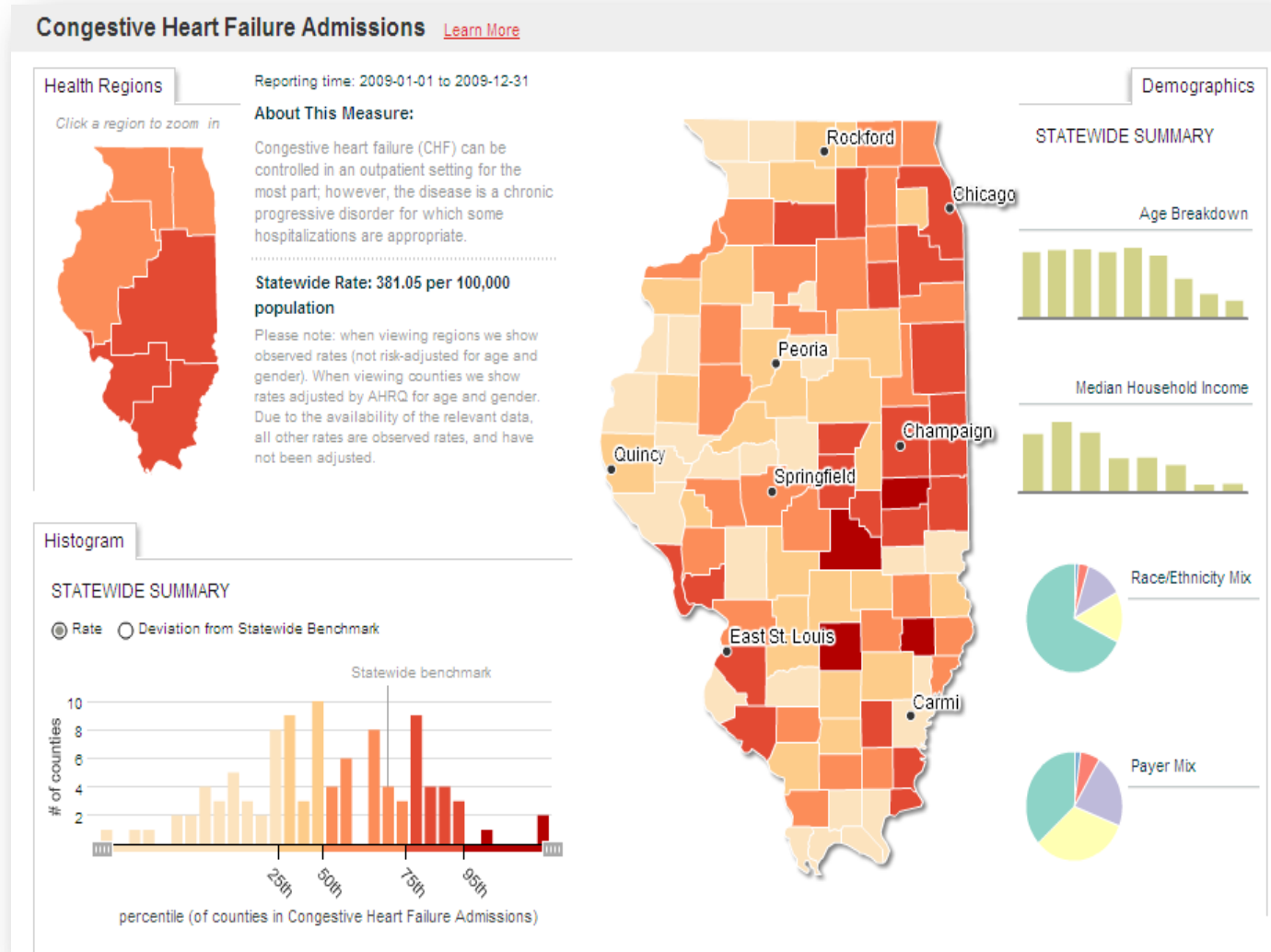
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# Problem #1: Variation

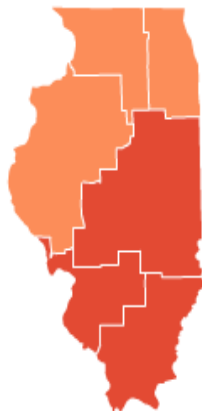




## Congestive Heart Failure Admissions [Learn More](#)

### Health Regions

Click a region to zoom in



Reporting time: 2009-01-01 to 2009-12-31

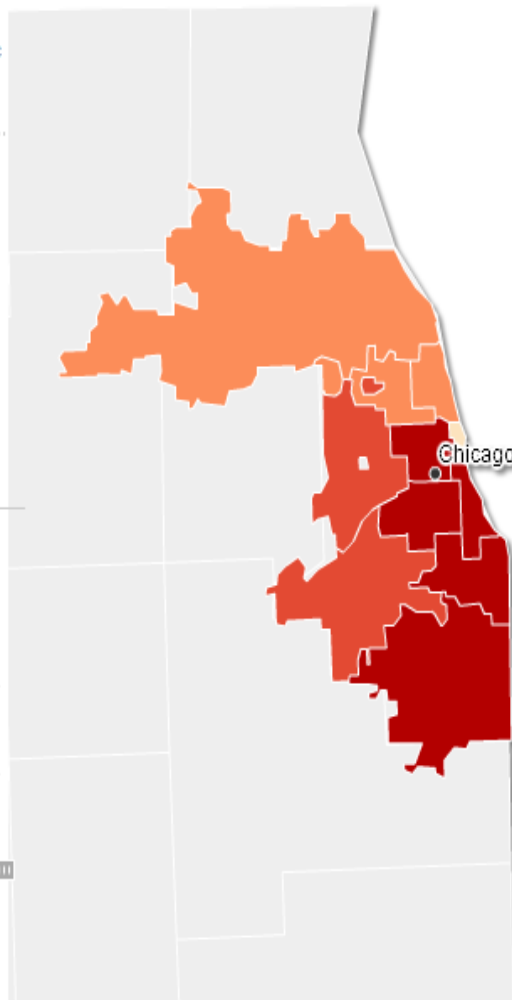
### About This Measure:

Congestive heart failure (CHF) can be controlled in an outpatient setting for the most part; however, the disease is a chronic progressive disorder for which some hospitalizations are appropriate.

**Regional Rate: 394.01 per 100,000 population**

Please note: when viewing regions we show observed rates (not risk-adjusted for age and gender). When viewing counties we show rates adjusted by AHRQ for age and gender. Due to the availability of the relevant data, all other rates are observed rates, and have not been adjusted.

Zoom out to Northeastern IL



### Demographics

#### NORTHEASTERN IL

#### Age Breakdown



#### Median Household Income



#### Race/Ethnicity Mix



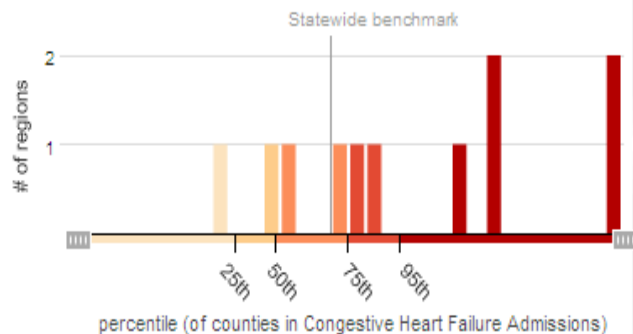
#### Payer Mix



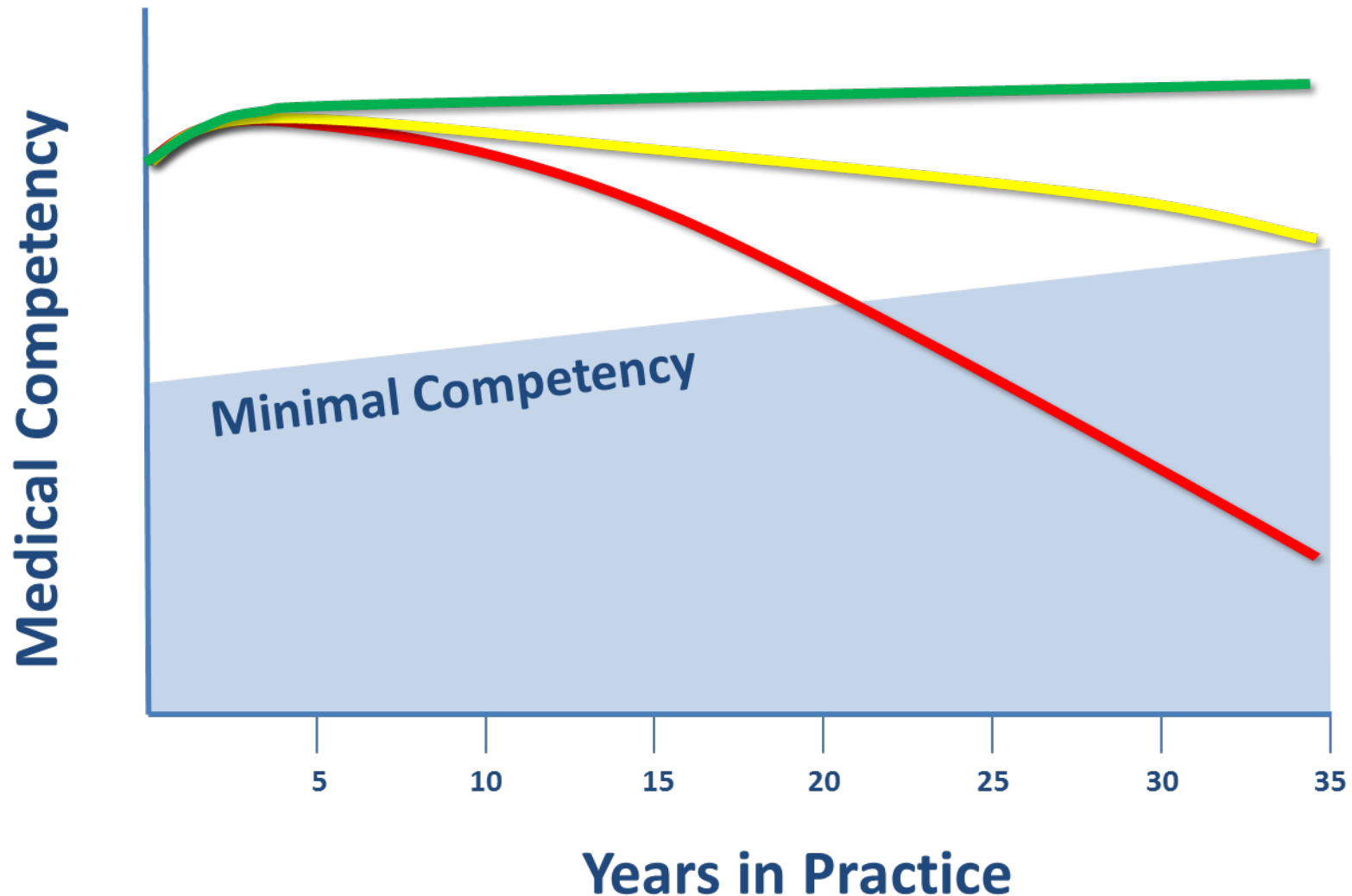
### Histogram

#### STATEWIDE SUMMARY

☒ Rate ☐ Deviation from Statewide Benchmark

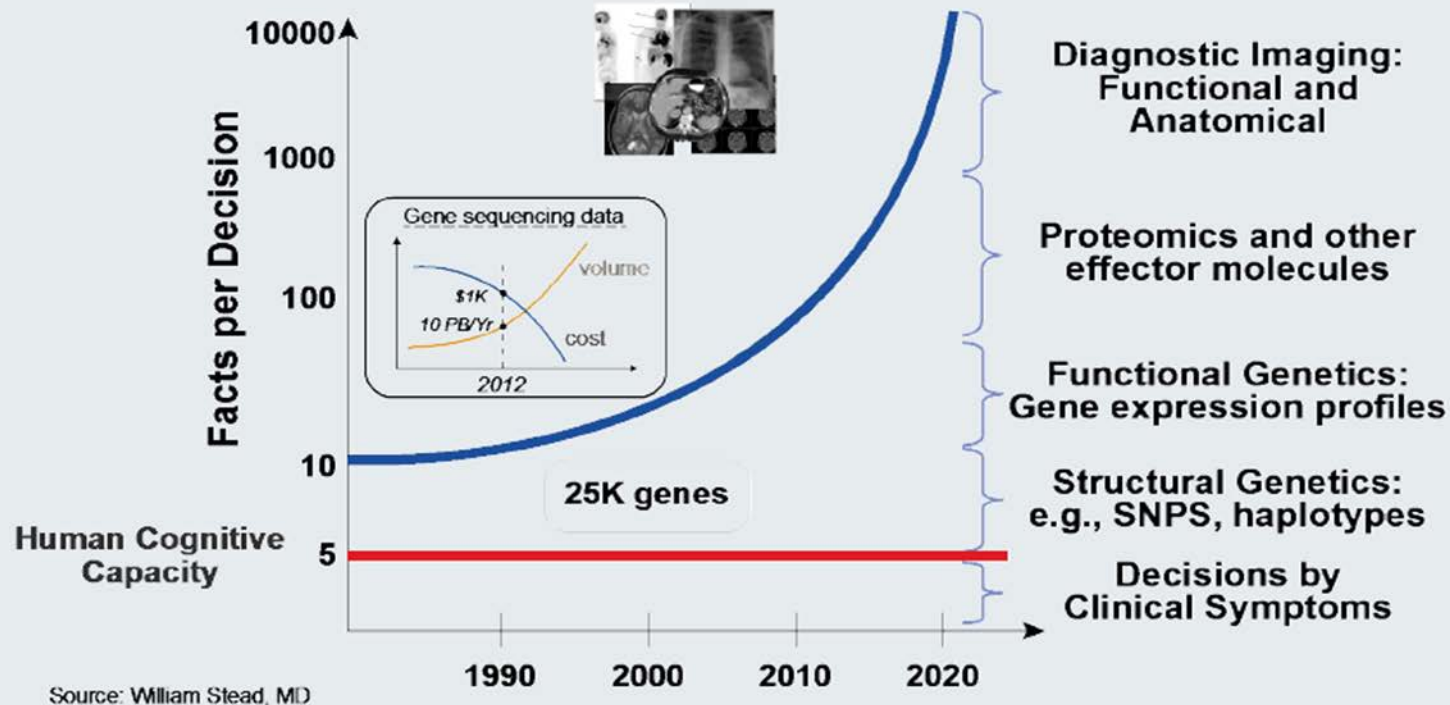


# Problem #2: Failure to Advance




# Problem #3: Overload & Filter Failures

## Challenges are Data Explosion and Cognitive Overload



# Problem #4: Lack of Information

## Publication of NIH funded trials registered in ClinicalTrials.gov: cross sectional analysis

 OPEN ACCESS

Joseph S Ross assistant professor of medicine<sup>1,2</sup>, Tony Tse program analyst at ClinicalTrials.gov<sup>3</sup>, Deborah A Zarin director of ClinicalTrials.gov<sup>3</sup>, Hui Xu postgraduate house staff trainee<sup>4</sup>, Lei Zhou postgraduate house staff trainee<sup>4</sup>, Harlan M Krumholz Harold H Hines Jr professor of medicine and professor of investigative medicine and of public health<sup>2,5,6</sup>

*“Despite recent improvement in timely publication, fewer than half of trials funded by NIH are published in a peer reviewed biomedical journal indexed by Medline within 30 months of trial completion. Moreover, after a median of 51 months after trial completion, a third of trials remained unpublished.”*

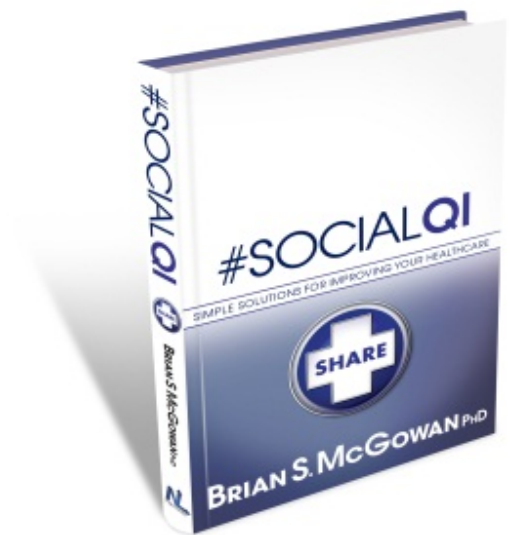


# *Introducing #socialQI*

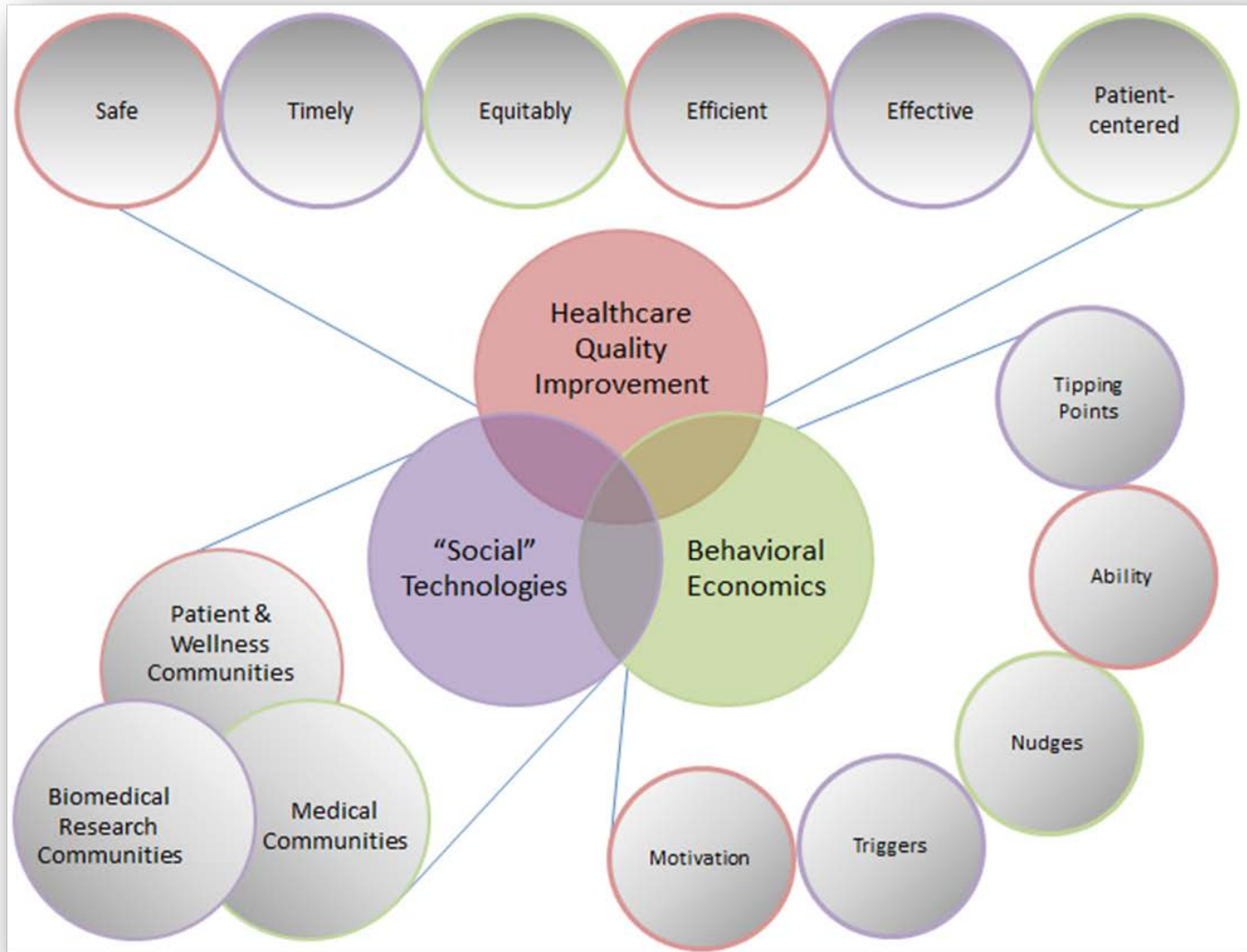
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# SocialQI



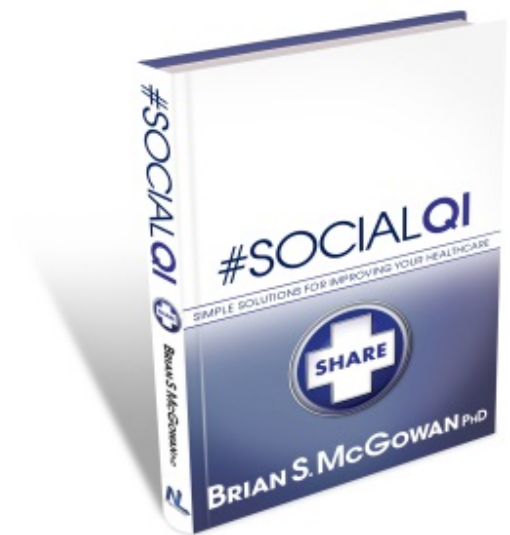


# *One Part - Social Network Science*

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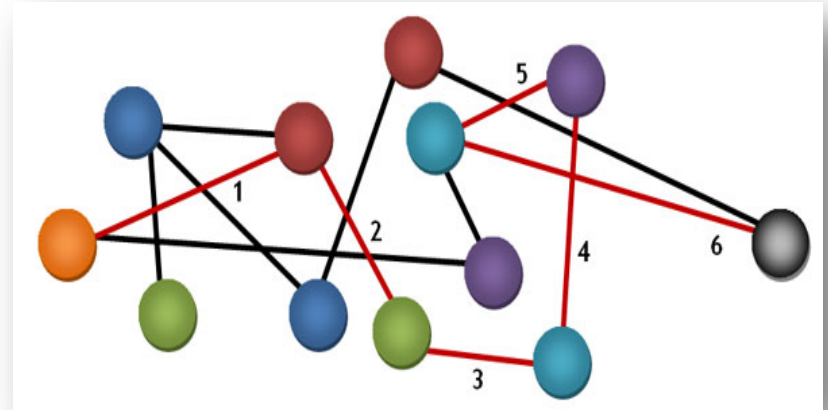
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# Social Network Science



**Sidewalk Experiment**



**Six Degrees of Separation**

# Social Network Science

## Quitting in Drove: Collective Dynamics of Smoking Behavior in a Large Social Network

Nicholas A. Christakis, M.D., Ph.D., M.P.H. and James H. Fowler, Ph.D.

Department of Health Care Policy, Harvard Medical School; Department of Medicine, Mt. Auburn Hospital, Harvard Medical School; and Department of Sociology, Harvard University (NAC); and Department of Political Science, University of California, San Diego (JHF).

### SPECIAL ARTICLE

## The Spread of Obesity in a Large Social Network over 32 Years

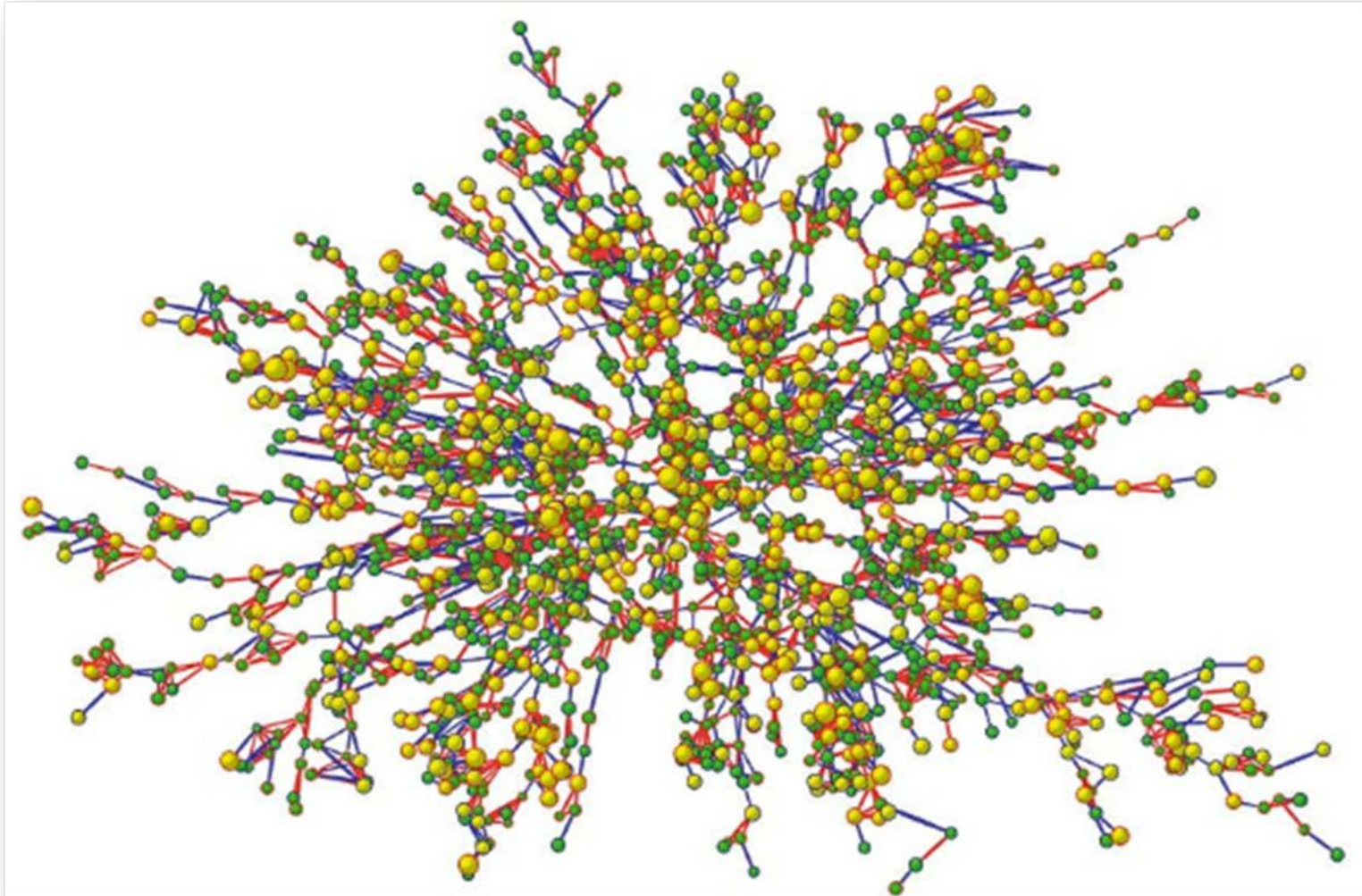
Nicholas A. Christakis, M.D., Ph.D., M.P.H., and James H. Fowler, Ph.D.

## Dynamic spread of happiness in a large social network: longitudinal analysis over 20 years in the Framingham Heart Study

James H Fowler, associate professor,<sup>1</sup> Nicholas A Christakis, professor<sup>2</sup>



# Social Network Science



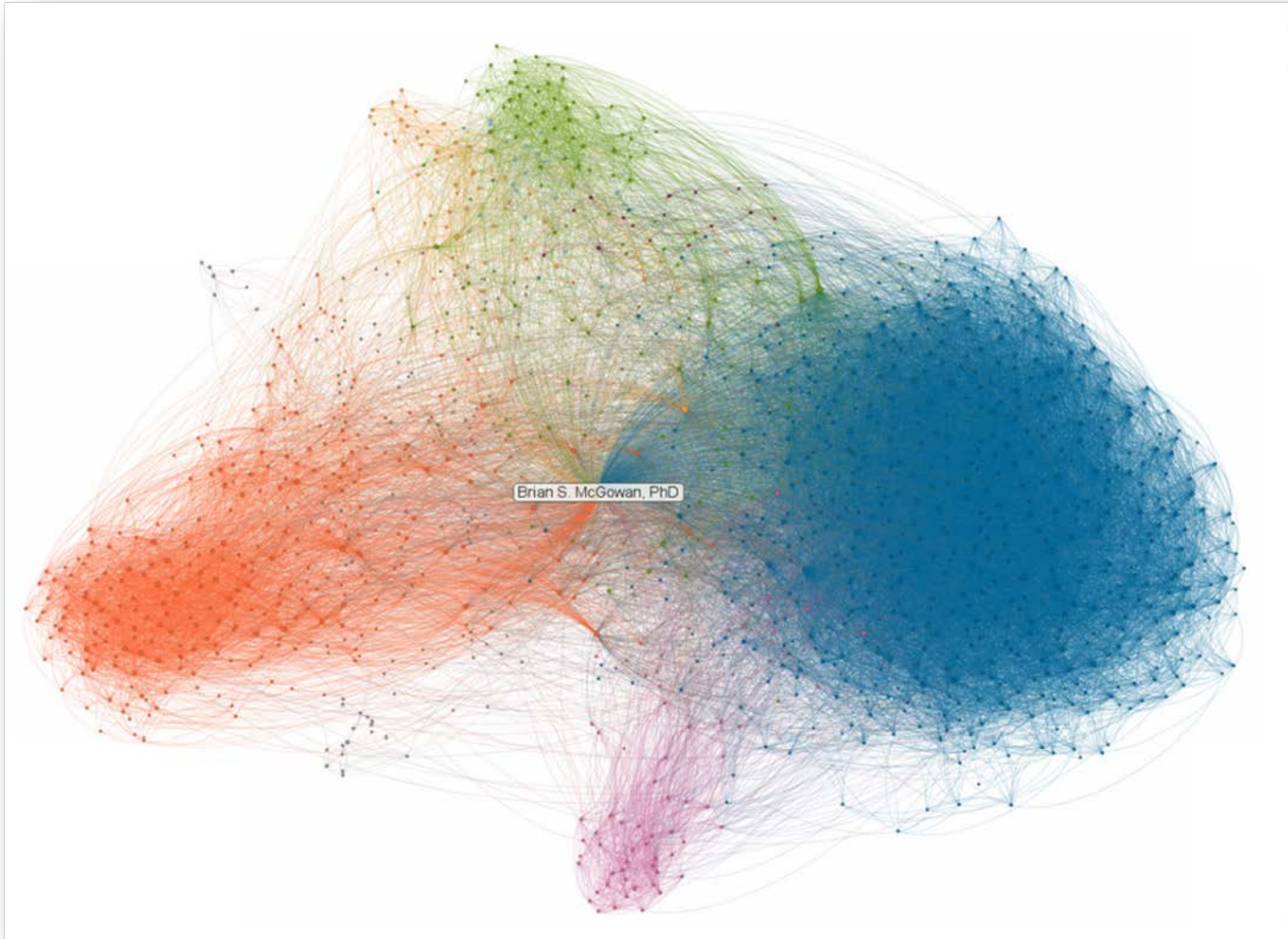
<http://www.nejm.org/doi/full/10.1056/NEJMsa066082>

www.socialQI.com



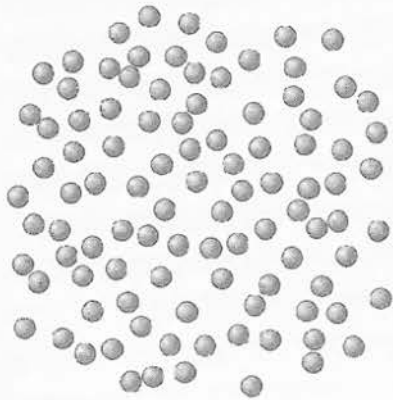


# Social Network Science

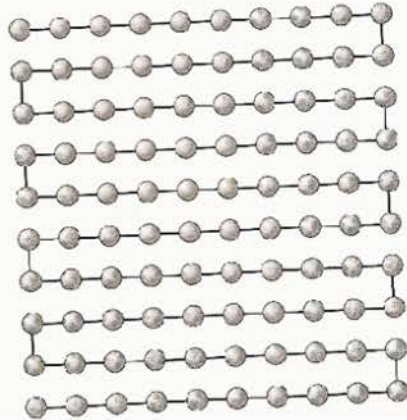


# Social Network Science

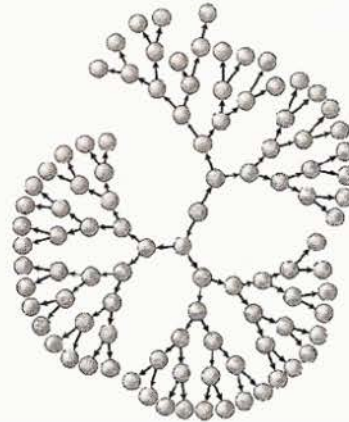
**Unconnected**



**Bucket Brigade**



**Telephone Chain**

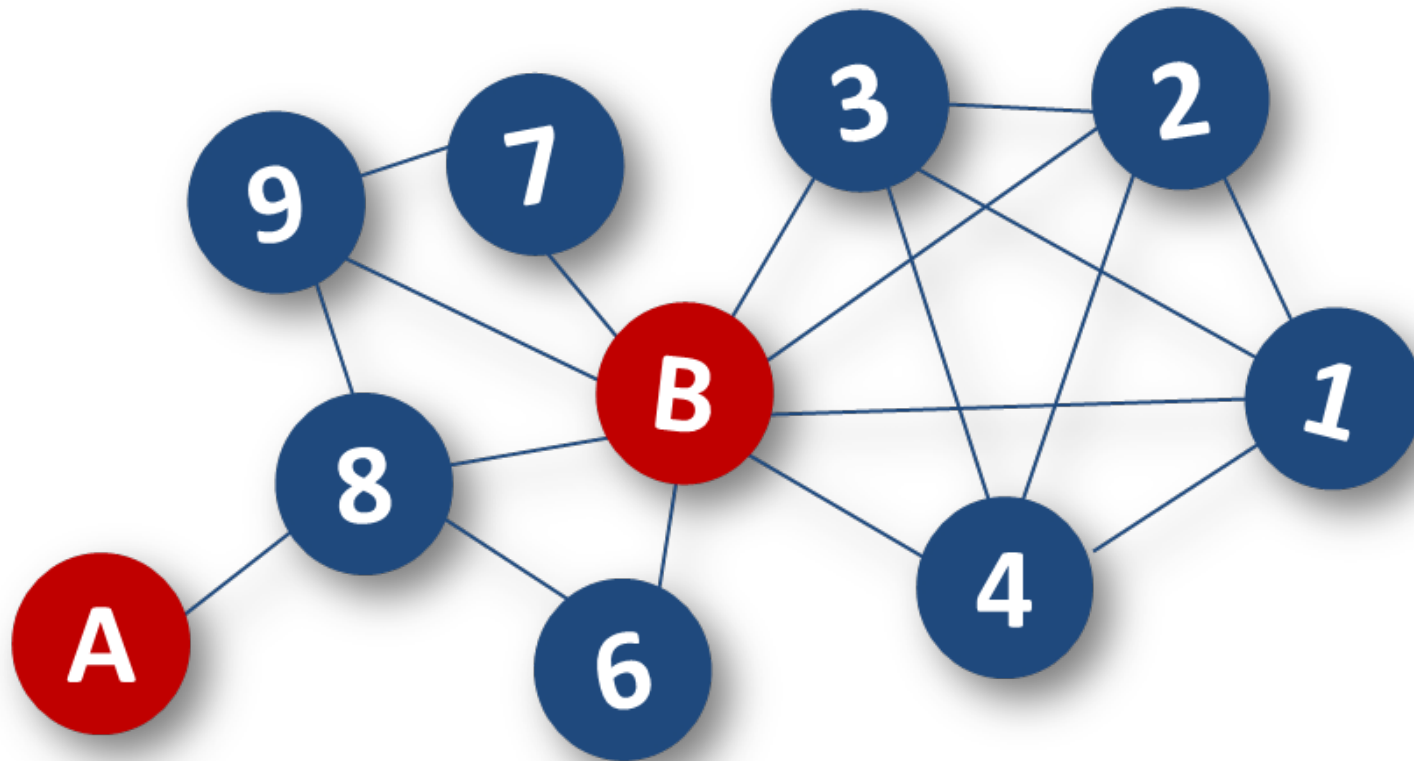


**Military Brigades**





# Social Network Science



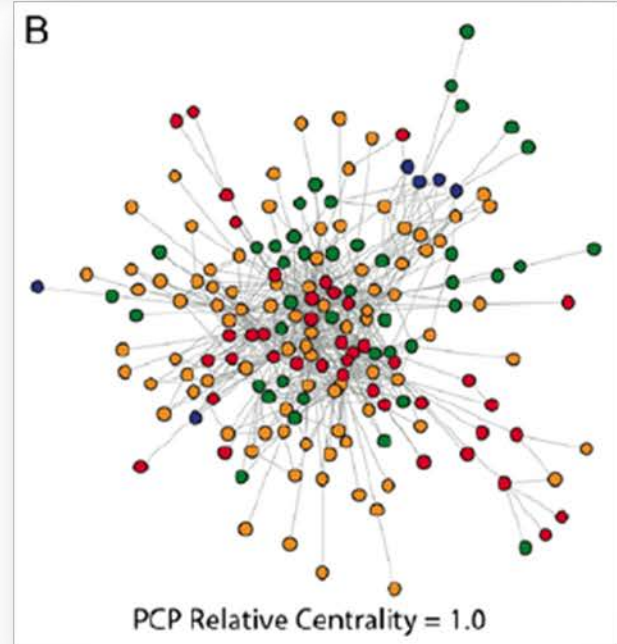
# Social Network Science

## Physician Patient-sharing Networks and the Cost and Intensity of Care in US Hospitals

*Michael L. Barnett, MD,\*† Nicholas A. Christakis, MD, PhD,\*‡§ James O'Malley, PhD,\*  
Jukka-Pekka Onnela, PhD,\* Nancy L. Keating, MD, MPH,\*† and Bruce E. Landon, MD, MBA\*‡*

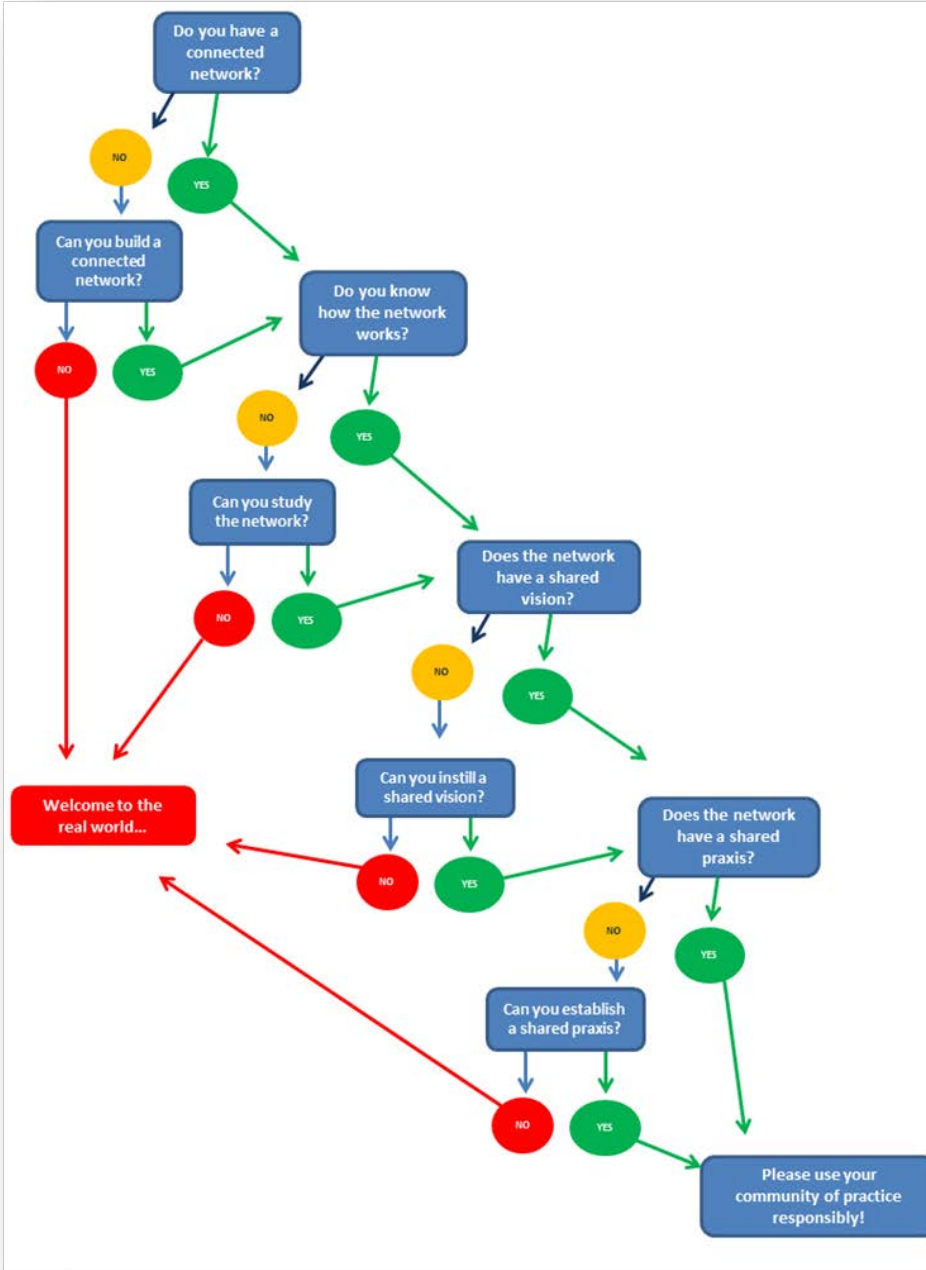
**Results:** The typical physician in an average-sized urban hospital was connected to 187 other doctors for every 100 Medicare patients shared with other doctors. For the average-sized urban hospital an increase of 1 standard deviation (SD) in the median number of connections per physician was associated with a 17.8% increase in total spending, in addition to 17.4% more hospital days, and 23.8% more physician visits (all  $P < 0.001$ ). In addition, higher “centrality” of primary care providers within these hospital networks was associated with 14.7% fewer medical specialist visits ( $P < 0.001$ ) and lower spending on imaging and tests (−9.2% and −12.9% for 1 SD increase in centrality,  $P < 0.001$ ).

**Conclusions:** Hospital-based physician network structure has a significant relationship with an institution's care patterns for their patients. Hospitals with doctors who have higher numbers of connections have higher costs and more intensive care, and hospitals with primary care-centered networks have lower costs and care intensity.

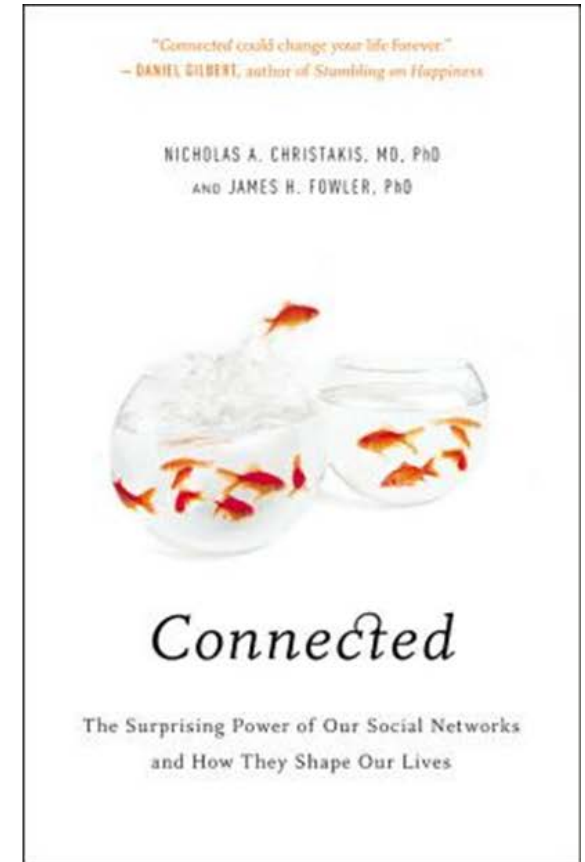
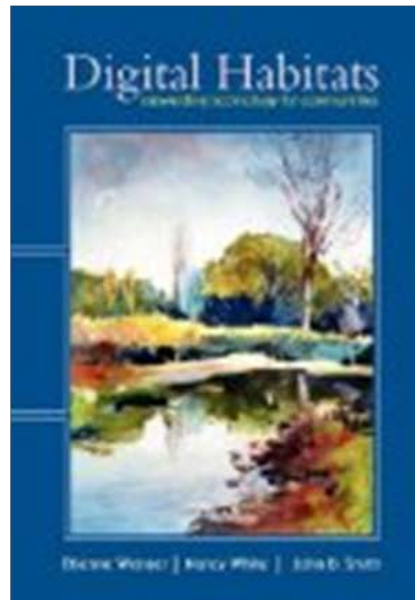


# Moving to *'Communities of Practice'* models:

1. Collective Intent
2. Share Praxis



# Of Networks and Communities...

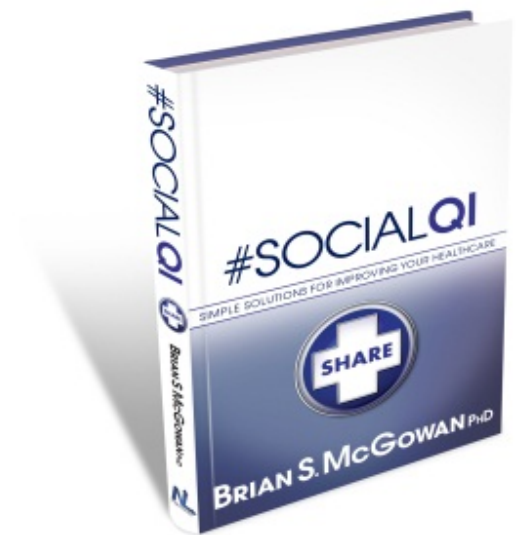


# *One Part - Behavioral Science?*

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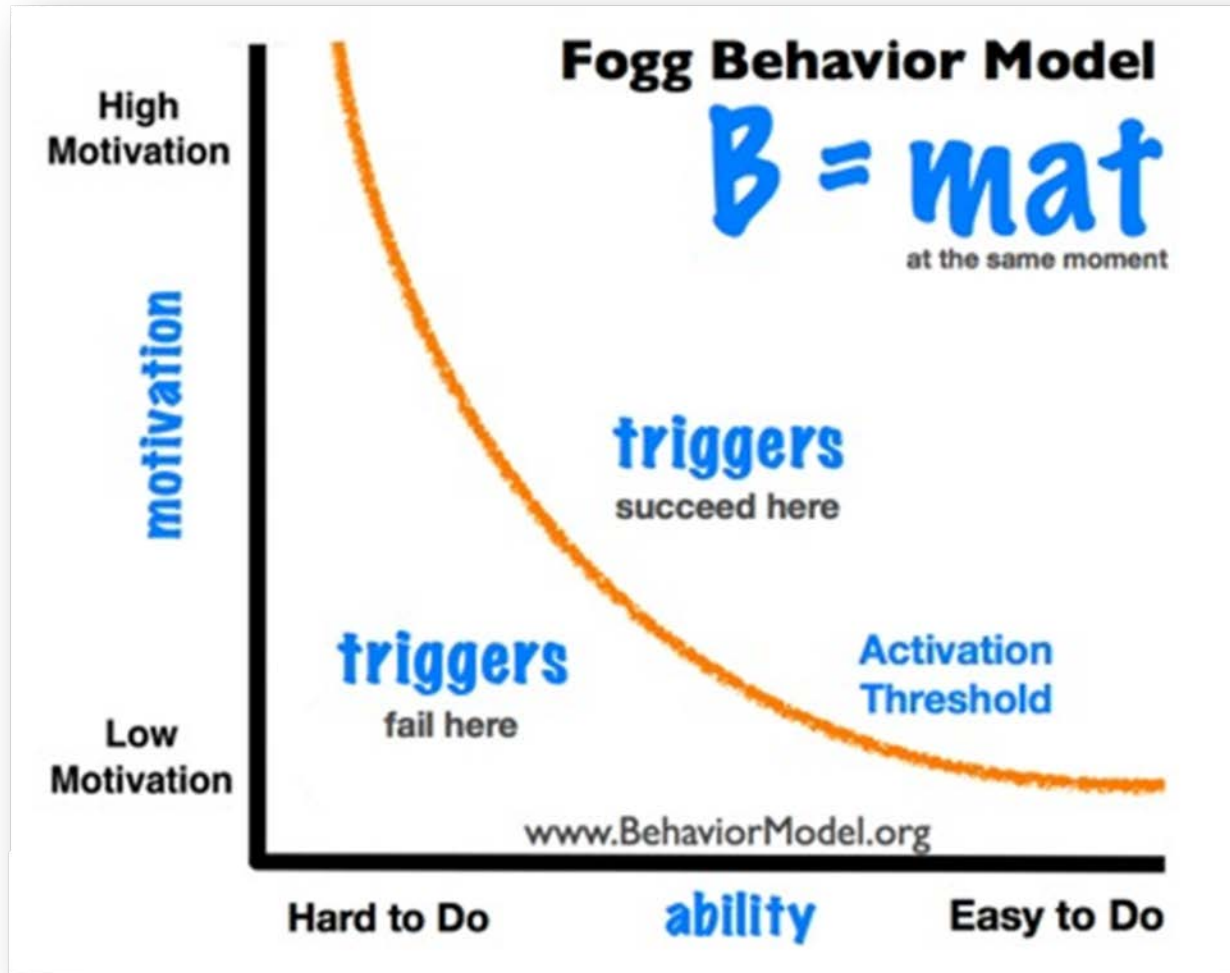


# Dr BJ Fogg & The Tale of The Naked Swim

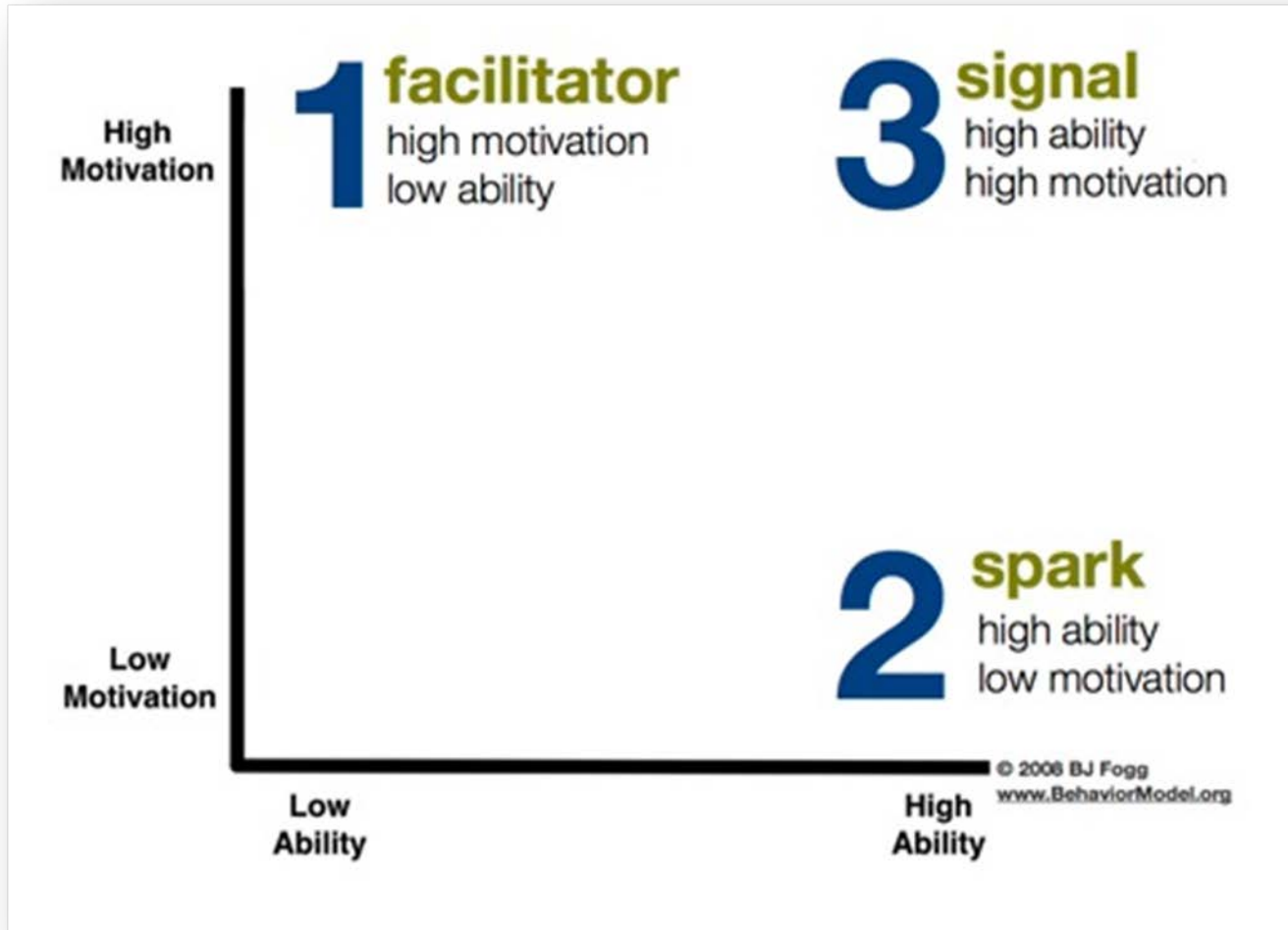




# Motivation x Ability x Triggers



# Motivation x Ability x Triggers

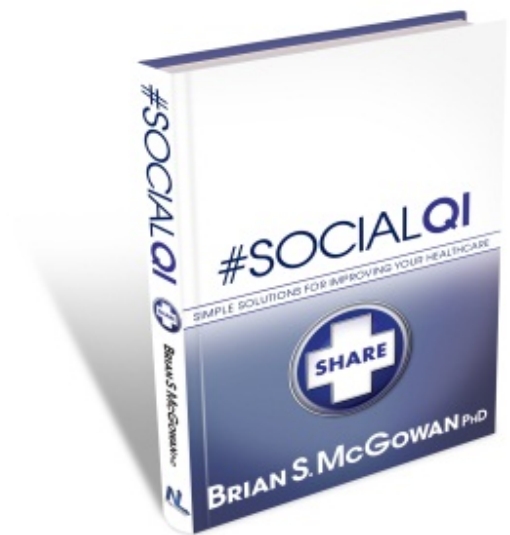


# *Social Network Science + Behavioral Science = SocialQI*

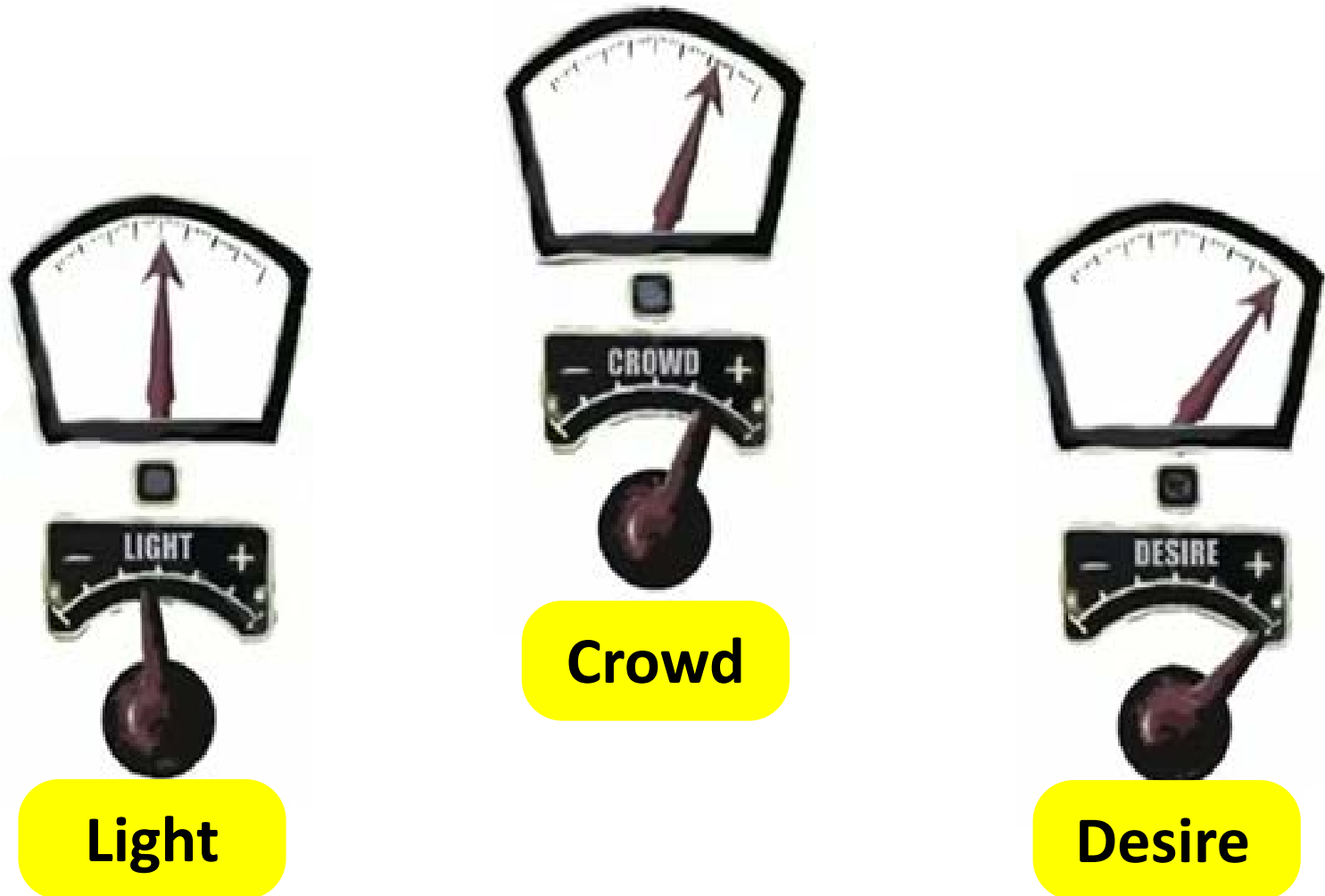
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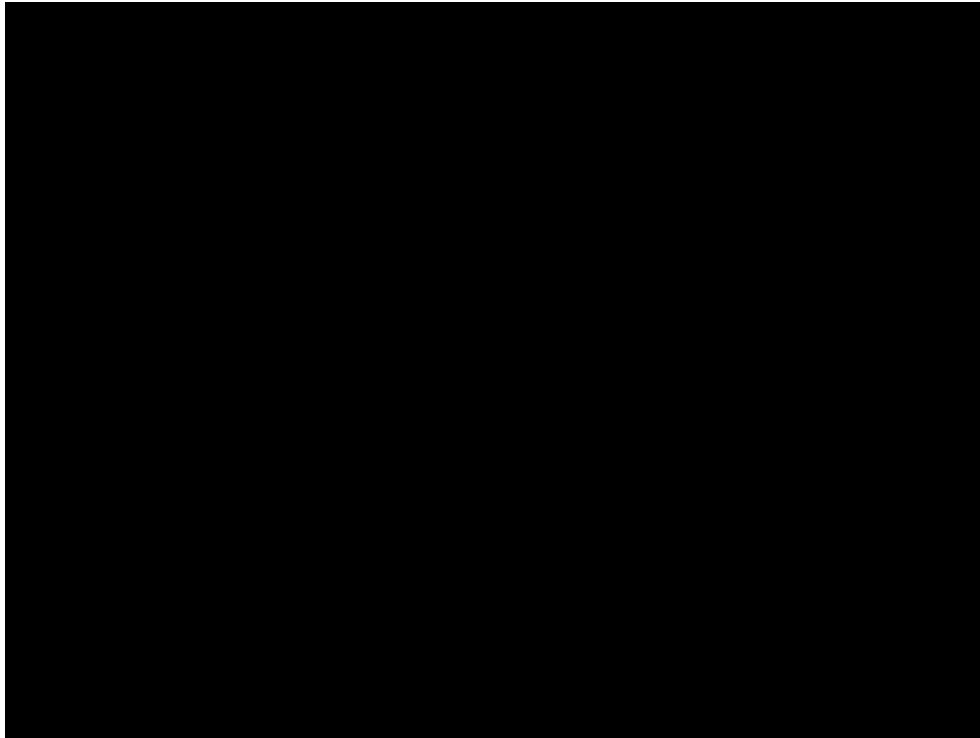
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# Crowd Accelerated Improvement



# What does this look like?



Jonathan Chu, LXD

"Dancers have created a whole **global laboratory online**. Kids in **Japan** are taking moves from a YouTube video created in **Detroit**, building on it within days and releasing a new video, while teenagers in **California** are taking the Japanese video and remixing it to create a whole new dance style."

<http://youtu.be/dbPqOdYYDeQ>

www.socialQI.com





# What does this look like in science?



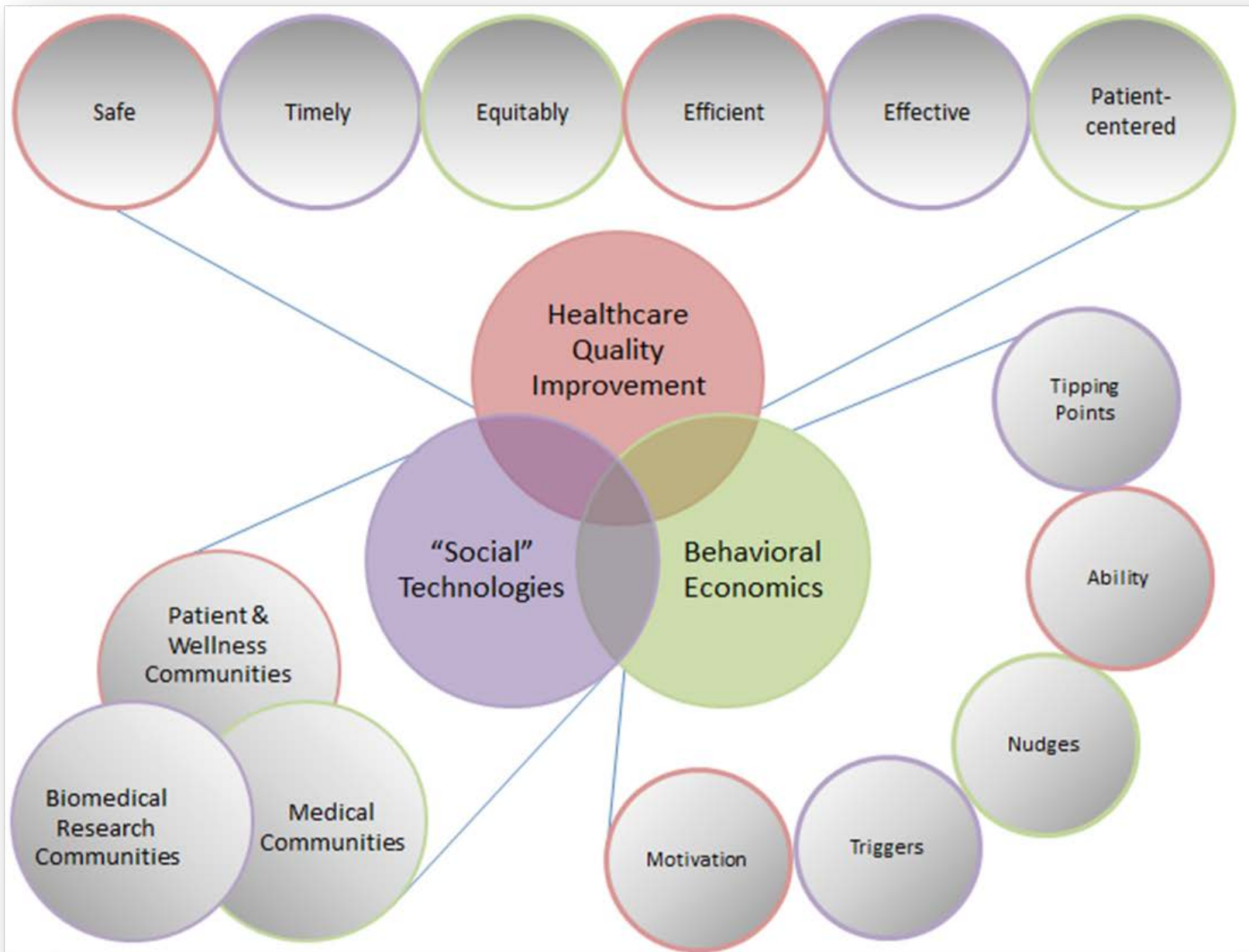
# *How Does SocialQI Become the New Norm in Healthcare?*

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## What Is

vs

## What Could Be

### Patient & Wellness Communities

- Weight Watchers
- Alcoholics Anonymous
- 'being a patient'
- Isolation

- Quantified Selfers
- ACOR
- Patients Like Me
- #S4PM

### Medical Communities

- Knowledge is power
- Free-agent learners
- CME credit gathering
- Failed Ed. Design

- #meded, #MDchat
- Delta Exchange
- OzmosisESP
- Rapid Learning Systems

### Biomedical Research Communities

- 'Dose of Science'
- Publish or Perish
- Traditional Publishing
- Impact Factor

- Mendeley
- Sage BioNetworks
- Altmetrics
- Open Access



# Lesson 1: Rely on better technology

- 1. Integration:** Real sustainable success will only come from our ability to engineer systems that integrate into existing activities
- 2. Open and Connected:** Information flow & big data analytics must
- 3. Social:** Over time knowledge will move from the individuals within the community (knowledge capital) to be shared across the community (social capital)





# Lesson 1: Rely on better technology

- 4. **Incentivizes:** ultimately comes down to our ability to tap into the “what's in it for them” of the community
- 5. **Controlled:** evolve simple, standard tools to govern the inflow and outflow thresholds
- 6. **Culture:** consider ways to scale up culture to enable increasing larger (but productive) communities to form



# Lesson 2: Evolve a new skillset

- 1. Credibility & Reputation:** Increasingly contribution to learning and improvement will define one's professional reputation within the community
- 2. Filtering & Search:** We can't just release the bottleneck of information without the new systems to govern the flow...or folks will drowned



# Lesson 2: Evolve a new skillset

- **Providing Feedback:** for true collaboration, getting along should never be as important as getting things done
- **Self-assessment:** we must engage the system with our eyes wide open...digital nature allows reflection and social nature allows norming
- **Critical thinking & decision making:** requires us to know what we know, understand what we don't know, and not to be paralyzed by the reality that we rarely have all of the information we need



# Summary

## Problems

## SocialQI Solutions

Quality Variation

Shared best practices

Failure to Advance

Peer Norming &  
Transparency

Information  
Overload/Filter Failure

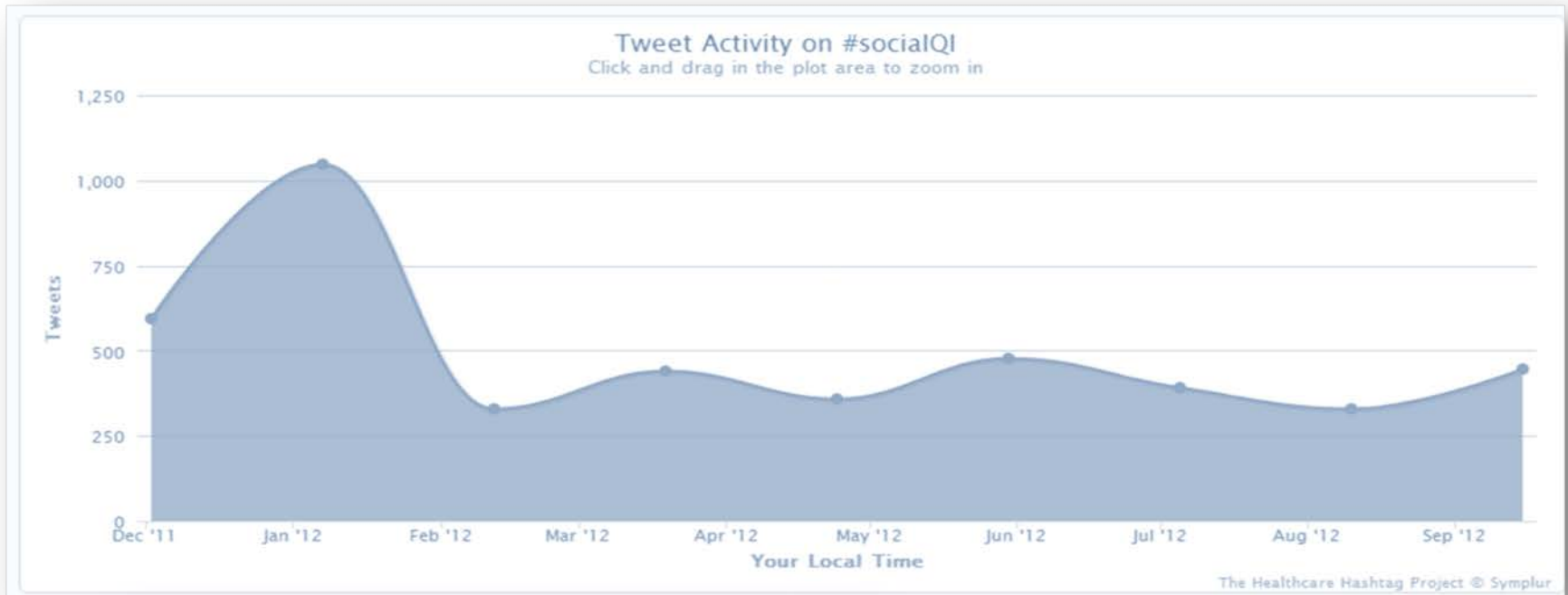
New systems for  
simplifying learning

Lack of Information

New culture of sharing



# About the book title: *#socialQI*



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## Social Learning in Medicine = #SOCIALQI:

Brian McGowan, PhD

Order his latest book [f SHARE](#)

22,026,096 Impressions

6,884 Tweets

734 Participants who —

1 Avg Tweets/Hour

9 Avg Tweets/Participant

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# *Q and A*

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