Introductions

Maggie Helms
Maggie leads a team of data scientists at HealthPartners. Maggie’s team uses big data to solve problems, design innovations, and react to market challenges. Her work has focused on purchaser solutions, predictive modeling, and total cost of care measurement.

Joel Spoonheim
Joel’s team at HealthPartners creates and deploys web, telephonic and on-site solutions that support employees in improving their overall well-being. He is responsible for product innovations and operations, and his customers range from small to Fortune 500.
Measuring stress
What does the data say?
How / where do we measure stress & associated impacts?

Clinical measures
- Claims-based measures
- Survey-based measures

Clinical measurement approaches and tactics

Clinical case / control studies (stress is a controlled variable):
- fMRI measurements
  - Stress can **damage our memories**
- Longitudinal Dx Measurements
  - Stress can increase our long term likelihood of developing conditions like **depression and anxiety**.
- Blood pressure monitoring
  - Stress probably does not cause high blood pressure, but can increase a person’s **risk for obesity and heart disease**.

1. NACC: Aberrant default mode functional connectivity changes in the aftermath of social stress
2. 2014. Acute and chronic psychological stress as cardiovascular disease risk factors: findings from epidemiological, clinical, and experimental studies

HealthPartners®
Claims-based measurement approaches and tactics

- Examination of co-occurring diagnoses on medical claims (stress is a latent variable)
  - Members with a history of anxiety claims are 42% more likely to experience diagnoses relating to chronic pain and fatigue in the future, and have a 3 times higher chance of abusing opioid medications
  - Members with persistent anxiety have a 2 times higher healthcare costs.

Survey-based measurement approaches and tactics

- Large-scale survey correlations (stress is self-reported, relative to respondent’s perception)
  - Respondents who report high stress levels also report 15% lower life satisfaction. (1)
  - Respondents who report high stress levels also report:
    - Errors or missed deadlines (21%)
    - Difficulty focusing (66%) (2)
  - Respondents who report high stress levels also report:
    - 52% less productive work time

1. National Business Group on Health
Triangulating approaches

Employees who report high stress levels have:

- 25-50 percent higher health care costs
- 52 percent less productive work time
- 40 percent higher turnover rates
- 15 percent lower life satisfaction
- 3 times higher chance of a behavioral health-related health event
- 25%+ higher BMI

compared to employees who report low or moderate stress levels

Employees who report high stress levels AND effective stress management have:

- 18 percent lower health care costs
- 40 percent more productive work time
- 3 times lower turnover rates
- 12 percent higher life satisfaction
- 2.4 times lower chance of a behavioral health-related health event
- Forty to fifty percent lower BMI

compared to employees who report difficulty managing their stress
Are educators unique?

*What does the data say?*

**Benchmarks:**
stress, stress management

![Bar chart showing stress levels in different sectors](image_url)
Benchmarks: BMI, Depression prevalence

Benchmarks: Psychiatry and cardiology costs
Comparing key metrics

Adjusting for benefit design (indexed to expectation)

Relative Psych Spend
Relative Cardiology Spend

0 1 2 3 4
-1.21 1.9 1.02 1.06 -0.3 -0.2
Healthcare Education Manufacturing Government Admin

Comparing key metrics

Triangulating approaches

Compared to most other industries, educators have:

- Higher perceived stress
- Slightly higher rates of diagnosed depression and anxiety
- Slightly higher expenses, relating to psychiatry and cardiology

In a simple regression model, being an educator:

- Increases a person's probability of reporting high stress levels by 9%
- Increases a person's probability of being diagnosed with depression by 1%
- Increases a person's expected cardiology costs by 3-6%.
Are these results consistently distributed across districts?

Association between average stress levels and average PMPY health care costs, among school districts.

Employer case studies: 
*Impacting stress levels*
Best Practices in Program Design

1. Leadership
2. Environment
3. Relevance

Importance of Best Practice Design

- Balanced approach to building a culture of health and well-being
- Ensuring environmental (physical and cultural) supports for health and well-being

The higher the Best Practice Assessment Score, the fewer health risks in the population

The HealthPartners Best Practice Assessment shows a significant negative association between the "best practice score" and the population health metric (Health Risk 10 score) ($r = 0.54; p = 0.045$). For HealthPartners, the Best Practice Assessment Score explains ~30% of the variation in population health risks.
The Power of Networks

For example, did you know

Happiness is contagious!

“Whether a friend’s friend is happy has more influence than a $5,000 raise.”

-James Fowler

Case Study A

PROGRAM:

- T-shirt reward → Biometric-based incentives ($300 premium reduction)
- Added online and mobile programs with no incentive (to support stressed / busy employees)

RESULTS:

- +51% increase in incentive achievement
- +12% claims cost trend increase (3 year); No measureable decrease in biometric risk
- +2% depression diagnosis increase (3 year)
- +6% self-reported stress increase (5 year)
Case Study B

PROGRAM:
- $200 cash incentive
- Integrated EAP support
- Resilience “think tank” committee for HR leaders
- Gratitude journals

RESULTS:
- Wellness participation rate went from <30% to 55%
- +10% Claims cost trend increase (3 year)
- +8% Depression diagnosis trend increase (3 year)
- +6% Self-reported stress trend increase (3 year)

Case Study C

PROGRAM:
- Taxable cash incentives ➔ Extra Paid Vacation
- EAP support
- Frequent fitness partnerships
- Farmers market promotions
- High levels of leader engagement
- Employee buy-in on program design

RESULTS:
- Wellness participation rate went from 37% to 60%
- -9% Claims cost trend (5 year)
- -7% Depression diagnosis trend (5 year)
- -12% Self-reported stress trend (5 year)
Recommendations & Best Practices

Case study observations:
- Stress doesn’t exist in a vacuum
  - Don’t isolate or only focus on stress
- Leadership buy-in and support is critical
  - Make sure employees have time to participate
- Environment matters
- Employee engagement and buy-in is critical
  - Choices need to be relevant

Questions