CCI
CENTER FOR CARE INNOVATIONS

Risk Adjusting Primary Care Panel Sizes

Michael Rothman, DrPH

Strengthen the Health and Health Care of Underserved Communities

We cultivate innovation within organizations impacting care and services for low-income, minority, rural, homeless and immigrant populations

Learn

Innovate

Collaborate

Learning Goals

1. Define “why”
2. Clarify policy goals & constraints
3. Design dependent variable
4. Explore independent variables
5. Build & validate model
6. Deploy and support (assuming failure!)

Why am I here?

- Built risk adjustment models for The Permanente Medical Group (TPMG)
- ~4 million members
- ~5000 primary care physicians
- Deployed updated adult and child models in 2017

Why did TPMG do this in early 2000s?

- TPMG reinvented in 1998 to feature personal physician relationship & top quality
  - All patients choose or are assigned PCP (~99% now)
  - Hire MDs, design access so members can see own MD
  - Foster MD-level accountability for quality and access
- Needed method to balance expected workload for these accountable MDs

Why did TPMG redo in 2015?

PCP Voice

- Rapid membership growth with ACA
- Huge growth in physician “desktop” medicine
- PCP perception that old model wrong

Techy voice

- Incorporate new data sources
- Use updated groupers
- Rebuild to make easily maintainable

TPMG Ideal state

Primary care physicians believe that their panel sizes are appropriate compared to their colleagues in the same primary care specialty

Key tactic: recruit a PCP and Chief advisory group and hold bi-weekly 30 minute huddles to guide work & learn together

Why are you here?

Why are you considering risk adjusting panel sizes?

What problem or issue or opportunity are you trying to address?

Policy Goals and Constraints

UNIVERSITY OF CALIFORNIA UC Health

Center For Health Quality And Innovation

Calculating Primary Care Panel Size

January 2017

Coleen Kivlahan, MD, MSPH
Kristen Pellegrino, MD
Kevin Grumbach, MD
Samuel A. Skootsky, MD
Naveen Raja, DO
Reshma Gupta, MD
Robin Clarke, MD
Thomas Balsbaugh, MD
Tyson Ikeda, MD
Lawrence Friedman, MD
Lisa Gibbs, MD
Erin Todoki, MPA

Calculating Primary Care Panel Size

Introduction

Increased demands for quality, population-based health care and advancements in technology mandate that academic medical centers design their care in order to meet these challenges as well as stay true to their three-part mission of clinical care, research and education.

The University of California (UC) Center for Health Quality and Innovation (CHQI) was created in 2010 to promote, support, and nurture health care innovations at UC medical center campuses. Specifically, the goals of CHQI are to support innovations that help achieve the Triple Aim of Healthcare: to improve the patient experience, improve the health of the population, and reduce cost. CHQI has been successful in sharing best practices across the leadership of UC Health at UC Davis, UC Irvine, UC Los Angeles, UC San Diego, and UC San Francisco, the nation's largest statewide health sciences training program.

In this collaboration, the primary care leadership of the five medical centers sought best practices to meet primary care access needs of the future. This paper addresses the foundation of primary care: linking patients to a health care home, a process known as empanelment. Recognizing that new payment models incorporate panel attribution as a way to measure access and the health of a defined population, the UC collaborative recognized that there was no national standard to guide the process of empaneling patients. The following questions guided the identification of best practices:

Question 1:
How should patients be attributed to a primary care clinician's panel?

Question 2:
What is the "right-sized" panel?

Question 3:
How can practice panels be adjusted for patient and population risk?

Question 4:
What are the best ways to right-size panels?

https://www.ucop.edu/uc-health/_files/uch-chqi-white-paper-panel-size.pdf

Policy decisions, constraints, unintended consequences

1. How should patients be attributed to a primary care clinician's panel?
2. What is the "right sized" panel?
3. How can practice panels be adjusted for patient & population risk?
4. What are best ways to right-size panels?

1. How are patients attributed to PCPs at TPMG?

1. Nearly 100% choose or are assigned a PCP
2. Lots of patient-PCP glue:
   - Online portal drives communication & visits to PCP
   - Substantial communication in PCP's name: "welcome to my practice," clinical outreach
   - Strong PCP accountability for panel quality, access, and service
3. Patients can easily fire their PCP and choose another

2. What is a "right-sized" panel at TPMG?

1. Number of average risk patients per FTE PCP
2. Risk adjustment DOES NOT affect this
3. TPMG sets Adult/Family Medicine at 2,100, Peds at 2,070, and Ob/Gyn at ~5,200
   - >1/3rd of KP adults have ZERO primary care utilization
   - Bulk of Ob/Gyn work is for pregnant women (90% plus of all adult women are assigned however)
4. **Policy**: reward medical centers for investing in population care staff & systems that off-load PCPs

3. How are Panels Adjusted for Risk at TPMG

1. Build a prospective regression model predicting future PCP work
2. Predictions based on ***patient characteristics*** not provider decisions/practice style
3. Reward MDs who have ***efficient*** practice style
4. Encourage MDs to ***broaden*** their scope (e.g. Adult/Family medicine providing Ob/Gyn care)

4. How does TPMG right-size panels?

1. Chief's use software to open/close PCP's panels
   - System automatically opens/closes based on risk adjusted panel sizes, and PCP's FTE adjusted target
   - Panel score updated ***daily***
   - Patient scores updated ***monthly***
2. Medical center leaders and chiefs decide on hiring based on risk adjusted panel size

Assume

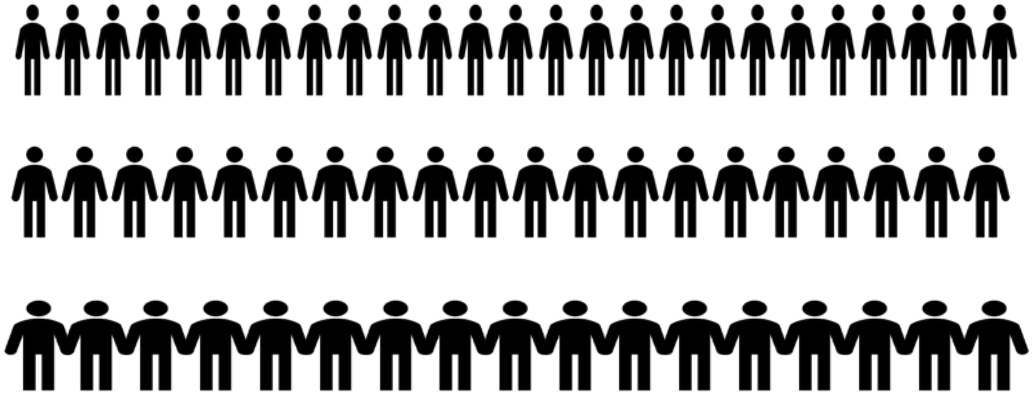
target panel size = 2,000

= 100 members with 20% below average (0.8) expected utilization

= 100 members with average (1.0) expected utilization

= 100 members with 20% above average (1.2) expected utilization

These three panels have the same expected utilization



Actual panel size		Risk score		Risk adj. Panel size
= 2,500	X	0.8	=	2,000
= 2,000	X	1.0	=	2,000
= 1,667	X	1.2	=	2,000

Your policy goals and constraints?

1. What do you want to reward with your empanelment and risk adjustment method?
2. What unintended consequences are you concerned about?


Dependent Variable

Dependent Variable = Perceived PCP work

What do you think are good proxies for this?

Dependent Variable at TPMG

1. Sum of encounters for each patient weighted by average length (from EHR analysis)
   - Face-to-face visits (~5.0)
   - Video visits (~5.0)
   - Scheduled telephone encounters (~3.0)
   - Unscheduled telephone encounters (~2.0)
   - Secure messages (~1.0)
2. If I had 2 visits and 3 secure messages in primary care, my utilization would be 13.0.

Validate your dependent variable!

1. Engage PCP advisory group
2. Ask a diverse set of PCPs to give relative “scores” to each half day session for two weeks
3. Normalize to Z-scores
4. Score actual encounters or something else to calculate your back-end “scores” for the same sessions
5. Normalize to Z-scores
6. Do a correlation analysis & get an alpha or R2
7. Are you and advisory group comfortable?


Independent Variables

Independent Variables (aka predictors)

Which factors could influence ***future*** (next 12 months) PCP perceived work for a particular person?

Independent Variables at TPMG

Type	Description
Demographic	Age-gender
	Race-ethnicity (only when increases prediction)
	Spoken language (only when increases prediction)
	Travel time from home to medical office
Clinical	Dx groups from ACA or Medicare risk adjustment systems **plus** custom groups for primary care
	Filled Rx groups
	Severe lab results associated with hospitalization (e.g. blood gas)
	Gestational age if pregnant (for Ob/Gyn)
Coverage & membership	Copay and deductible
	Payor type (only include Medicaid when increases prediction)
	Membership length
	Empanelment status (for Ob/Gyn
	Kp.org or proxy kp.org status

Model Building and Validation

Model Building Key Points (wonky)

1. Engage Advisory group and share interim results
2. Start with graphical analysis to understand relationship between utilization and predictors
3. For apparently powerful predictors, analyze variation across PCPs and care sites
4. For statistical model building build 3 random groups of members (50% for model building, 25% for active validation, 25% for final fit reporting)
5. Check that the model coefficients make intuitive sense
6. Check for stability on validation set and over time
7. Check for fit (e.g. prediction ratios) across the levels of predictors
8. Add complexity gradually in subsequent releases


Deploy and Support

Deployment advice (expect to fail!)

1. Engage Advisory Group deeply
2. Communicate with chiefs and sites along the way
   - If not making sense, change what you are doing or your pitch
3. Share 1-3 dry run simulations before go-live (focus on sites/PCPs with biggest changes)
4. Test all operational interfaces
5. Test deployment incrementally (one site?)
6. Plan for finding surprises
7. Lower barriers to complaining and reaching you


CCI
CENTER FOR CARE
INNOVATIONS
Questions?