

Diffusion of Intangible Innovations: An Application to Mental Health Care

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Motivation

Not all innovations are adopted equally. Innovations that are hands-on, mechanical, or algorithmic can diffuse much more quickly than innovations that require learning, behavior modification, or some other intangible adjustment.

What assists/impedes the diffusion of innovations like these?

Mental health care has a growing reliance on innovation in intangible treatments, such as **psychotherapy**. These innovations may diffuse slowly because of high learning costs, resistance to empirically-based treatments, or other factors.

Setting & Data

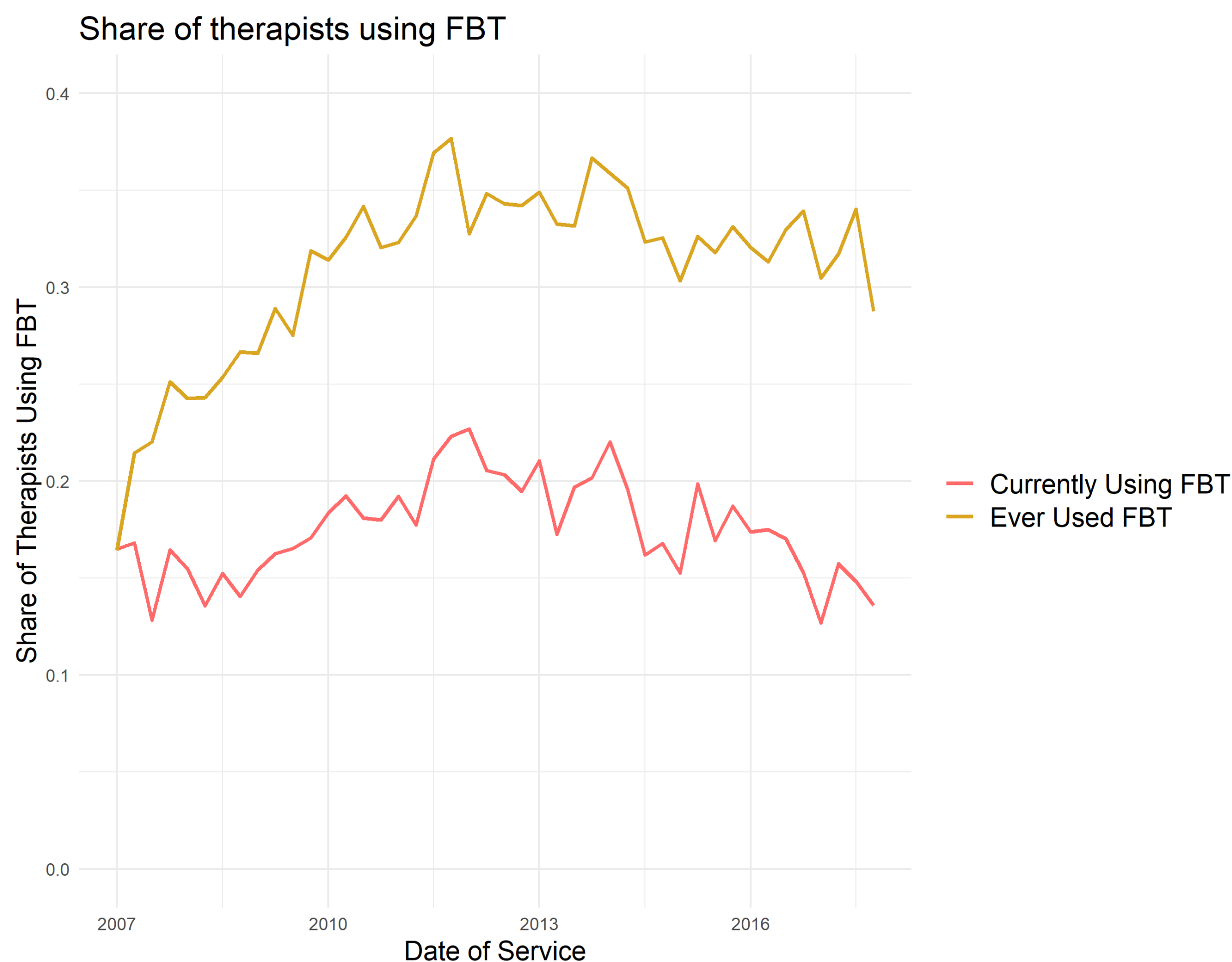
Setting: The rise of family-based therapy (FBT) in treating anorexia nervosa (AN) among teenagers

- Has been practiced since the '90s, but recent RCTs (Eisler et al. 2007) have established it as the **gold-standard** for anorexia treatment

Data: Reuter's MarketScan *Commercial Claims and Encounters*

- Patient-level claims data for active employees of large, self-insured firms in the United States
- Limited to:
 - Youth under 20 years old with *Anorexia Nervosa* (AN)
 - Receiving outpatient behavioral treatment

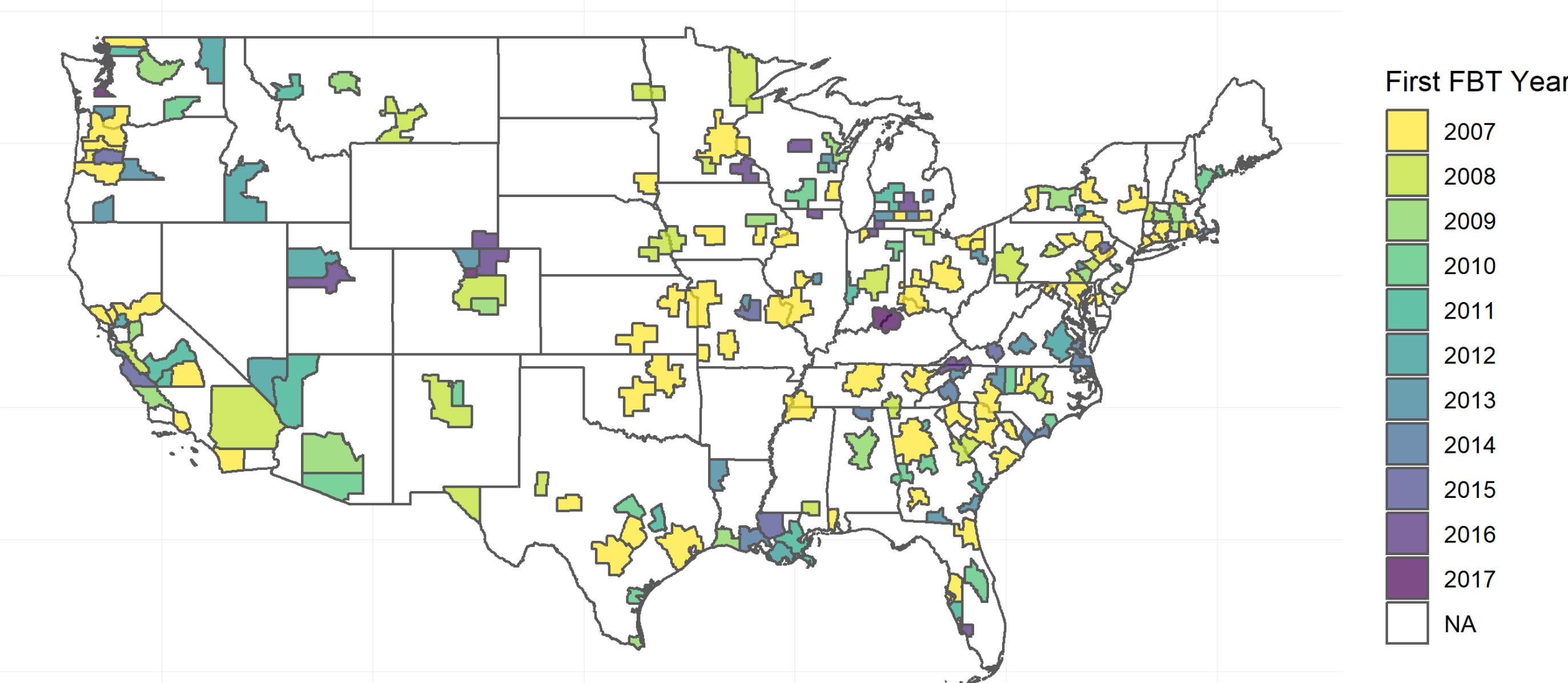
Sample size: 165,983 claims comprising 6,282 (identifiable) patients and 3,976 therapists



FBT has diffused **slowly** in response to recent RCTs.

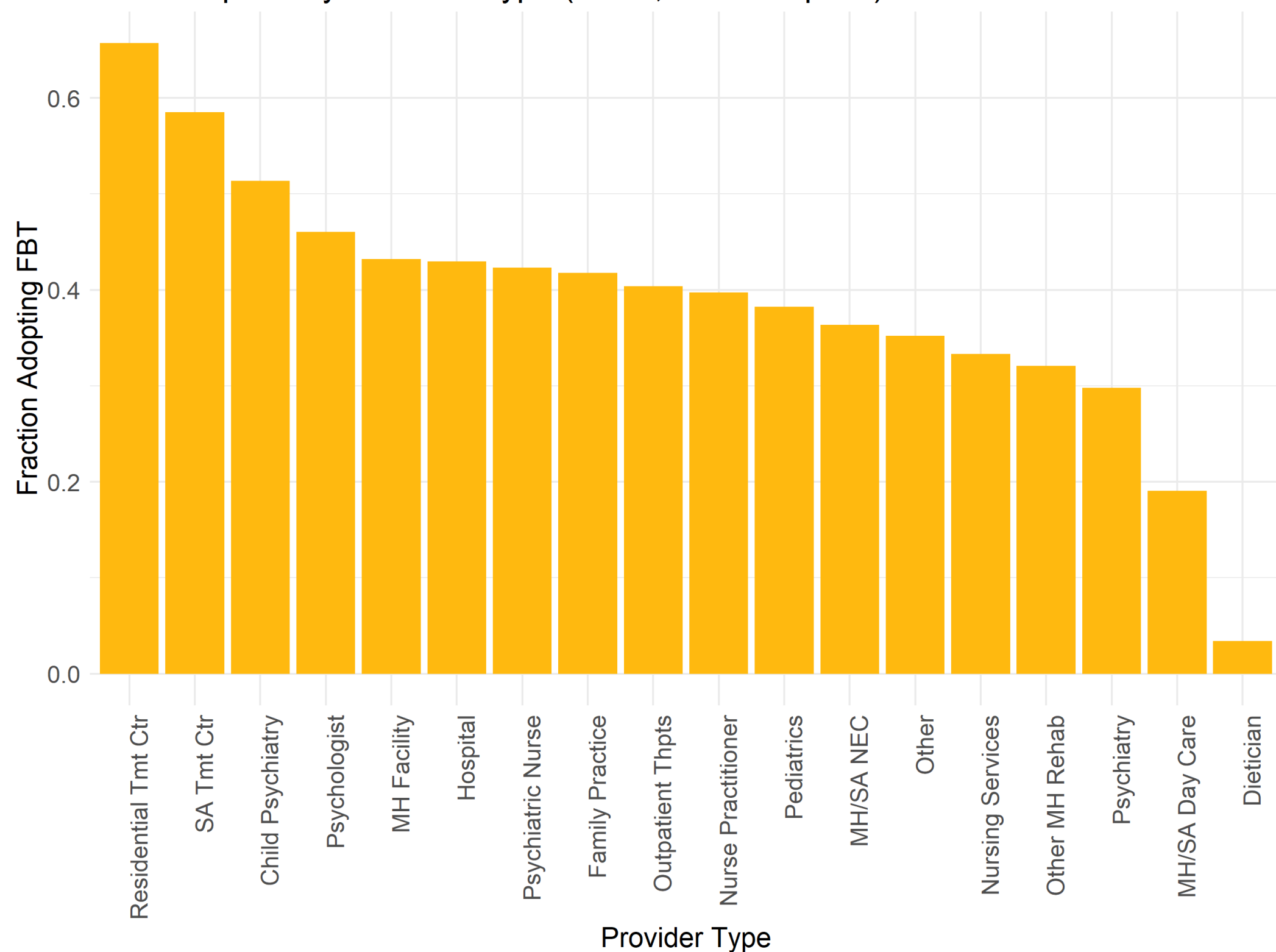
Preliminary Trends

Spread of FBT by MSA



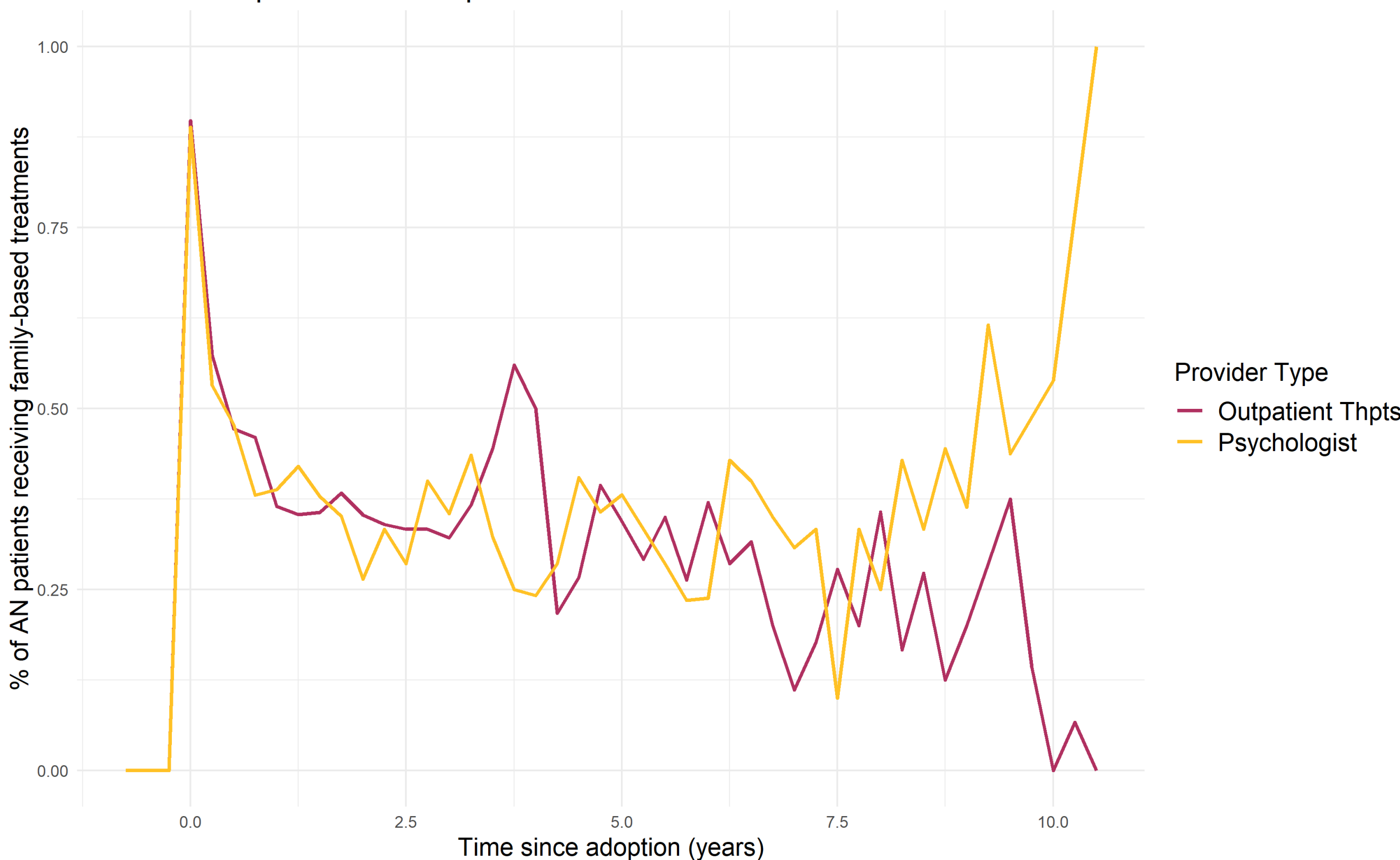
Diffusion of FBT to 118 new MSAs (13%) over data period

FBT Adoption by Provider Type (N = 3,976 therapists)



- FBT relatively slow to diffuse in **outpatient** settings
- Different adoption rates based on setting *and* training

How do therapists react to experimentation?

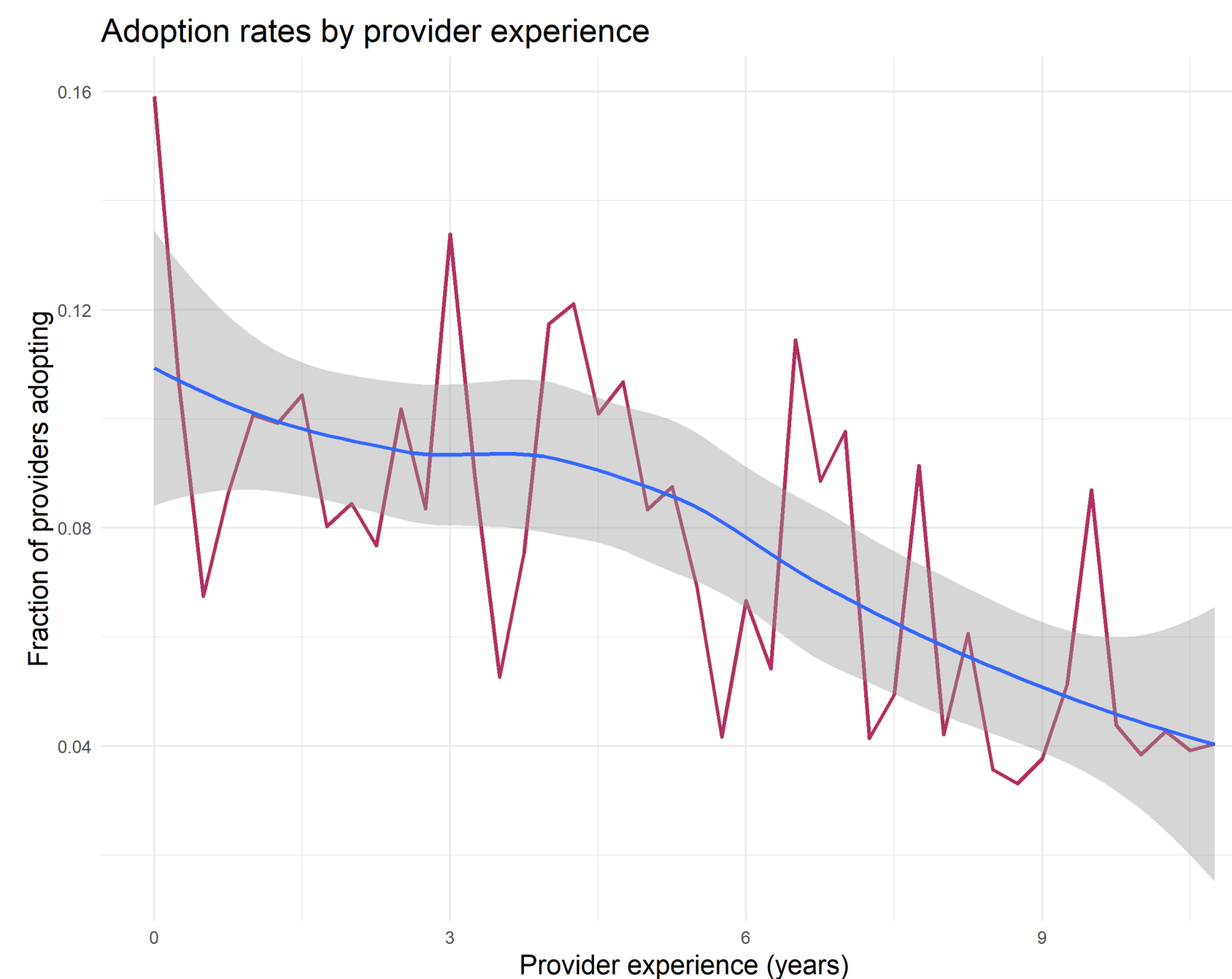


Training matters in determining who will persist in using FBT.

Differences Across Adoption Decisions

	Stratified by Adoption		
	Overall	Non-Adopters	Adopters
Adopter	0.23	0.00	1.00
	0.01	0.00	0.00
First quarter	2009.00	2009.25	2008.75
	0.04	0.05	0.09
Total volume: mean	123.55	97.85	211.62
	9.37	4.76	38.03
Total volume: median	124.41	97.78	215.66
	10.16	4.81	41.73
AN volume: mean	5.49	4.64	8.40
	0.09	0.08	0.29
AN volume: median	5.09	4.41	7.43
	0.08	0.08	0.25
High volume	0.04	0.03	0.07
	0.00	0.00	0.01
% AN	0.38	0.39	0.37
	0.01	0.01	0.01
% individual therapy	0.25	0.25	0.23
	0.01	0.01	0.01
% group therapy	0.01	0.01	0.02
	0.00	0.00	0.00
% use FBT outside of AN	0.35	0.26	0.67
	0.01	0.01	0.01
First use of FBT outside of AN	2009.50	2009.75	2009.25
	0.06	0.07	0.09

Note:
Colored rows indicate significant differences of means from an unpaired t-test comparing adopters and non-adopters (alpha = 0.05).



Cursory evidence suggests that **younger** therapists more likely to experiment with new methods, such as family-based therapy.

Analysis Plan & Hypotheses

My proposal is to explore **3 separate channels** of diffusion:

1) What happens when FBT comes to town?

Movers-based design: is there a competition/learning effect of increased FBT adoption when a therapist already practicing FBT moves to an MSA?

2) Can primary care physicians (PCP) induce adoption?

If therapists compete for referrals from PCPs, can they induce diffusion of FBT? What happens if a new referral network with a preference for FBT-therapists is set up (from a new PCP)?

3) How do therapists respond to publications?

(Less well-developed). Is there evidence that diffusion follows the publication of discussions of FBT (at least in the short run)? Are there some sources that connect better with therapists than others?