

By Nurse Practitioners Compared to Physicians

Elizabeth Nilsen, PhD(c) BSN RN Andrew Dierkes, PhD RN Paul Scott, PhD Ulrike Muench, PhD MSN FAAN Grant Martsoff, PhD MPH RN FAAN

Background

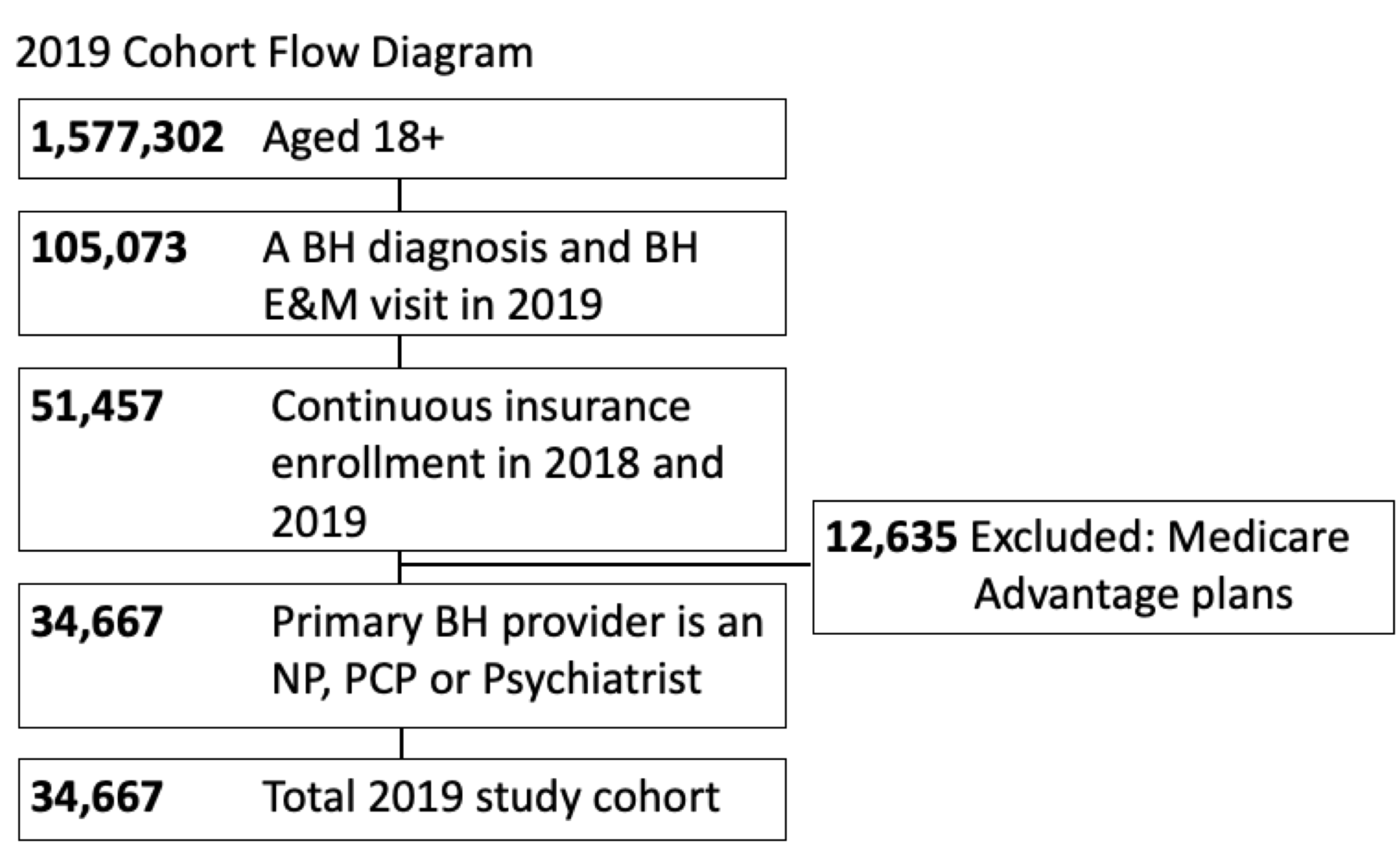
- Nurse practitioners (NPs) are an important workforce to meet the growing demand for behavioral healthcare (BH)
- NPs may be certified as Psychiatric Mental Health Nurse Practitioners (PMHNPs)
- From 2011 to 2019 there's been an increase in the supply of and office visits provided by BH NPs¹

Goal: Evaluate trends in BH medication management by NPs and compare care patterns between NPs and other providers.

Methods

Data Source: Clinformatics® Data Mart Database; a de-identified insurance claims data warehouse

Sample: Patients receiving care for a BH diagnosis in 2011-2019. Example of cohort selection criteria for 2019:



Independent Variable:

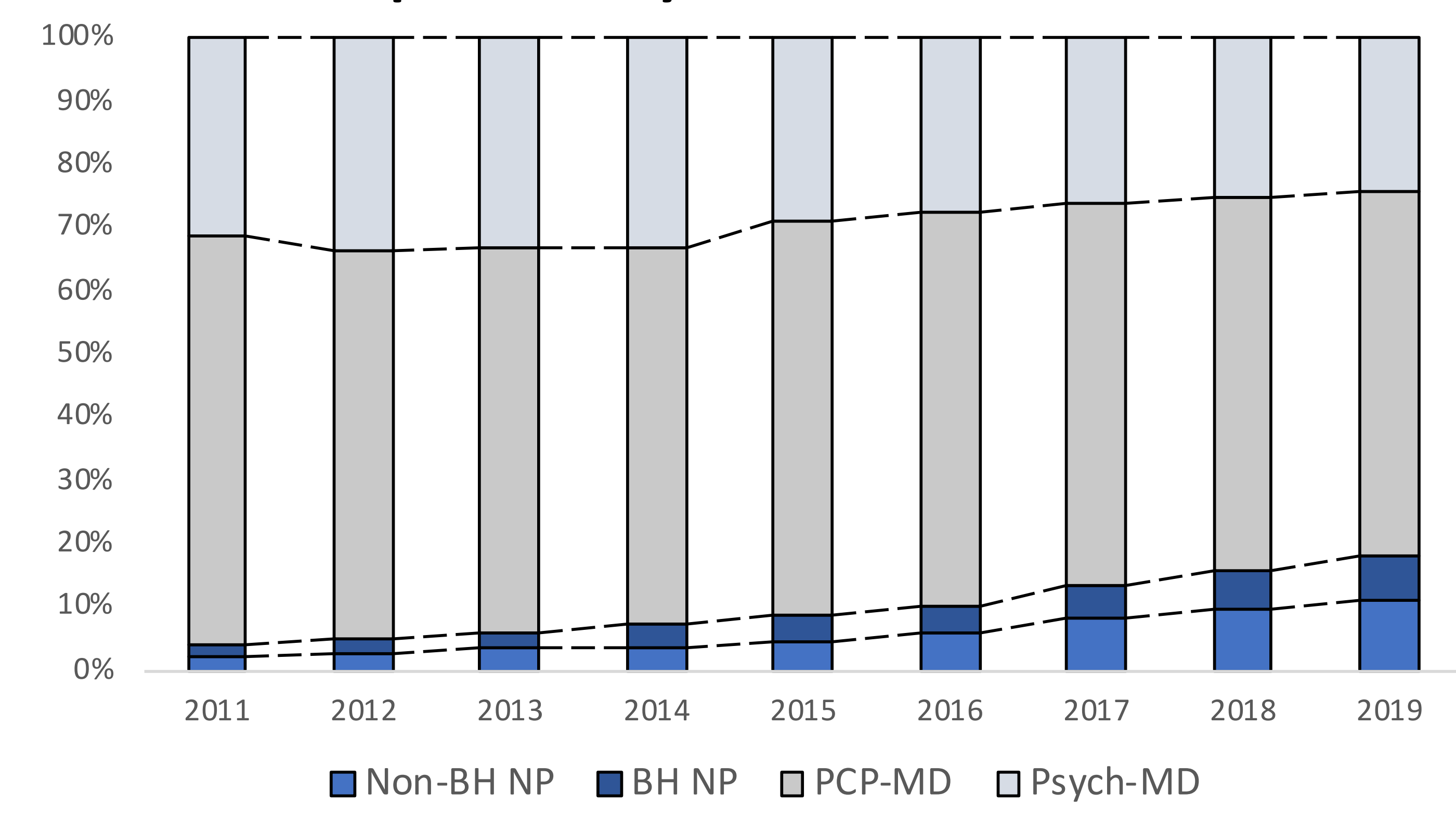
4 level categorical variable of primary BH providers, consisting of NPs (BH NP and non-BH NP), PCPs and psychiatrists. Primary BH providers were identified using attribution (provider with the most BH medication management visits according to HCPCS codes in each year)². **NPs were classified based on prescribing patterns** in the cohort year. BH NPs had 80% or greater of their medication prescriptions matching the top 50 prescriptions of psychiatrists¹

Outcome Variables: All outcome variables were obtained for 2019. We counted the **number of medication management visits with the primary provider** and **number of counseling/psychotherapy sessions** using HCPCS codes. We evaluated **antidepressant management** for newly treated patients using NCCA definitions.³ Effective management is continuous antidepressant adherence for the acute-phase (12 weeks) and continuation phase (6 months).

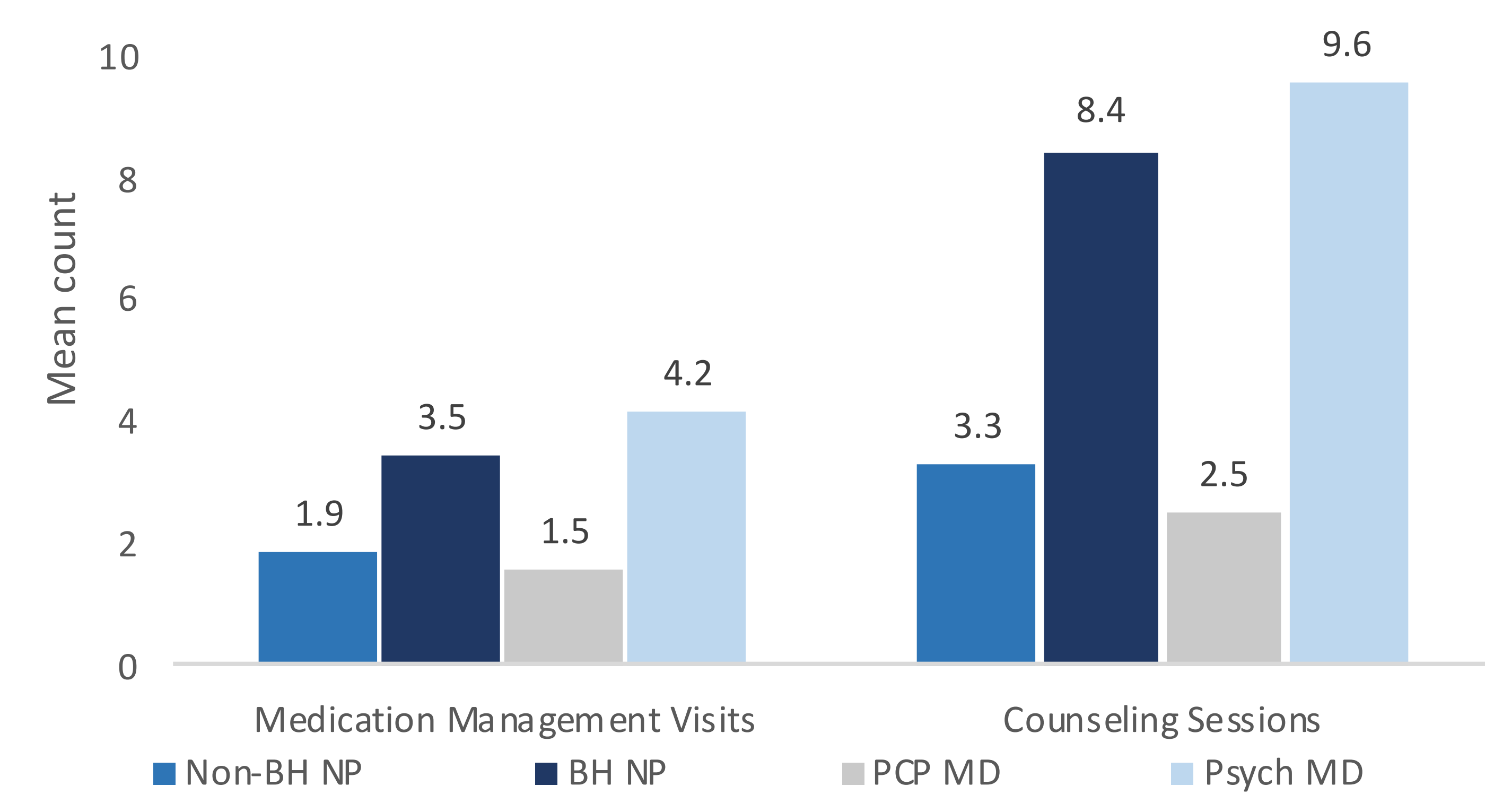
Statistical Analysis: To evaluate counseling/psychotherapy visits we fit a zero-inflated negative binomial model due to the high portion of patients with 0 visits and over-dispersion in the count variables. Adjusted odds ratio (aOR) is given for the presence of an outcome and adjusted incidence rate ratio (aIRR) for the number of events observed. Similarly, we modeled medication management visits using negative binomial regression. We modeled antidepressant medication management using logistic regression.

BH Provider Trends

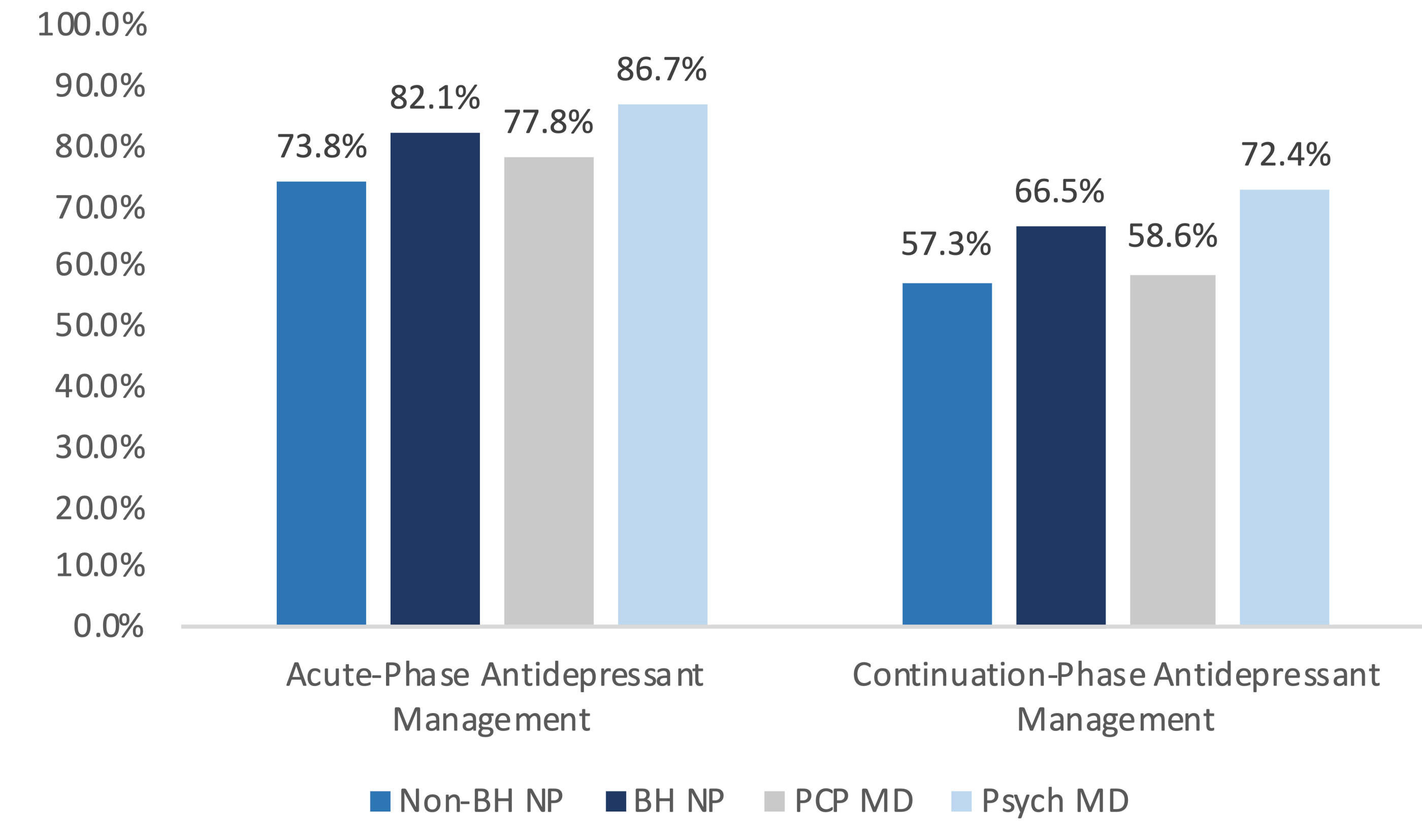
% of Patients by Primary BH Provider Specialty, 2011-2019



Medication Management Visits and Counseling Sessions, 2019



Antidepressant Management, 2019



Main Findings

- Patients of BH NPs, compared to those of PCPs:**
- **More medication management visits with their primary provider**
 - **Less likely to receive ANY counseling visit**
 - **But had more counseling visits**
 - **More likely to have effective continuation phase antidepressant medication management**

Regression Modeling for Care Pattern Measures*

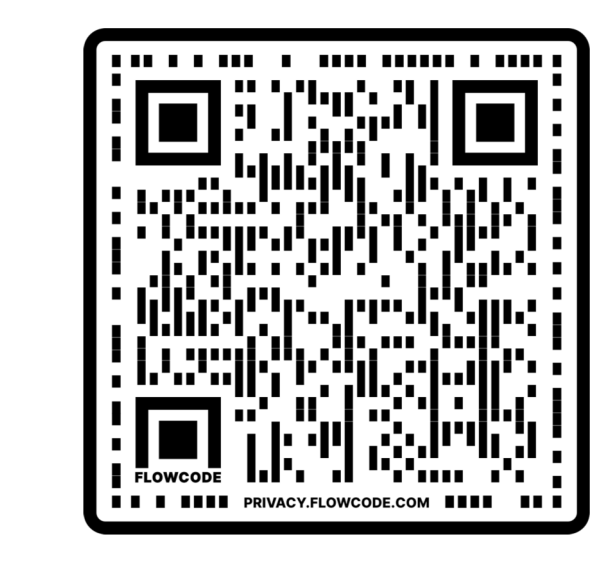
Medication Management Visits	Negative Binomial Model [aIRR (95%CI)]	
	Non-BH NPs	1.18 (1.15, 1.22)
BH NPs	2.01 (1.95, 2.07)	
Psych-MD	2.45 (2.40, 2.50)	
Counseling/Psychotherapy Visits	Zero-Inflation Model [aOR (95%CI)]	
	Non-BH NPs	0.74 (0.67, 0.81)
	BH NPs	0.01 (0.00, 0.07)
Psych-MD	0.04 (0.02, 0.06)	
Antidepressant Medication Management	Negative Binomial Model [IRR (95% CI)]	
	Non-BH NPs	1.04 (0.96, 1.14)
	BH NPs	1.18 (1.10, 1.27)
	Psych-MD	1.50 (1.43, 1.59)
Antidepressant Medication Management	Logistic Regression [aOR (95%CI)]	
	Acute Phase	
	Non-BH NPs	0.83 (0.56, 1.22)
	BH NPs	1.38 (0.96, 1.99)
	Psych-MD	1.96 (1.51, 2.55)
	Continuation Phase	
Non-BH NPs	1.00 (0.71, 1.41)	
BH NPs	1.52 (1.13, 2.05)	
Psych-MD	1.94 (1.58, 2.40)	

*All models use primary care physicians as the reference group and control for age, gender, comorbidity count, and BH diagnosis.

Conclusions and Implications

- NPs contribute significantly to the provision of behavioral health care.
- Distinctions in care patterns between providers are primarily by practice specialty, not profession
- To understand the contributions of NPs to behavioral healthcare, we need to understand their practice setting and specialty

Supplement:



Contact:

