

# How Jefferson Health Reduced ED Utilization by 34% with Digital Behavioral Health Integration

*Partnership with NeuroFlow Increased Behavioral Health Screenings, Reduced ED Visits, and Improved Outcomes*

## Behavioral Health Integration (BHI) at Jefferson Health

Treating the whole patient has consistently been a guiding principle at Jefferson Health. Beginning with a CPC+ program and transitioning to a Primary Care Behavioral Health Model in 2019, Jefferson has invested heavily in behavioral health integration to meet the needs of their patients and support primary care providers with 31 embedded behavioral health specialists across 50 practices spanning four geographic regions.

The impact of integrated, collaborative care was clear, but the adoption and implementation of this program was not without its challenges. Utilization of multiple EHRs throughout Jefferson's enterprise complicated efforts to centralize and standardize data collection. Additionally, practicing measurement-based care proved more difficult and time consuming than expected, often placing additional burden on clinical staff operating well below the top of their licensure.

The need to effectively scale Jefferson's BHI program required an additional layer of technology to reduce administrative burden while increasing the reach and impact of care teams. With this in mind, Jefferson Health partnered with NeuroFlow, giving clinicians the tools and data to effectively engage patients remotely with customized resources to support their health journey. NeuroFlow was deployed in 30 clinics spanning Primary Care, OBGYN, Psychiatry, and more in a matter of a few short months, thanks to streamlined clinical workflows and integrations with Jefferson's existing systems. Along with enterprise account and reporting functionality, NeuroFlow's digital self-care application facilitated over 6,200 remote questionnaires, giving Jefferson a tool to accelerate the delivery of holistic health at scale and support the transition towards value-based care.

- ✓ **82%** of patients reported improvement in anxiety or depression symptoms
- ✓ **19%** increase in screening rates compared to existing data in EHR
- ✓ **34%** decrease in ED visits for patients using NeuroFlow



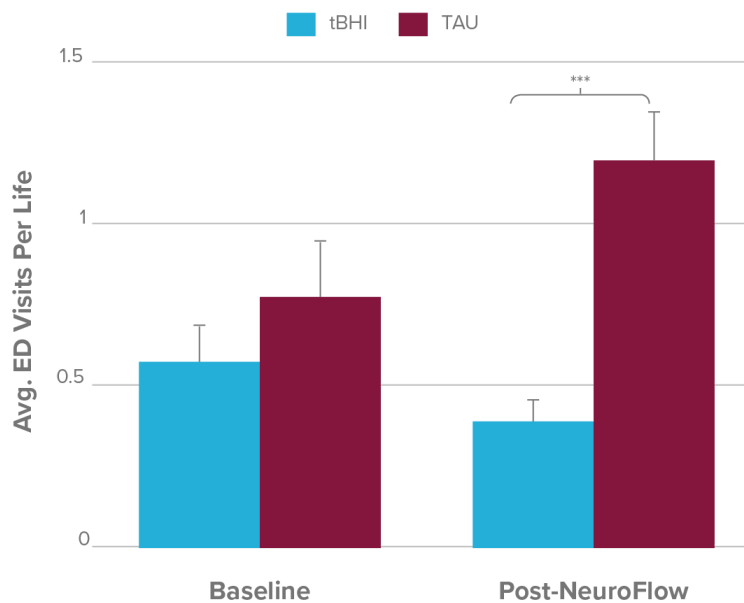
*"Together, we can reinforce the vital link between physical and mental health and ensure patients are more engaged. It [NeuroFlow] will deliver better outcomes and reduce the administrative burden placed on our providers."*

**Stephen K. Klasko, MD, MBA** CEO of Jefferson Health

## How NeuroFlow Helped Improve Patient Outcomes and Lower Cost of Care

Jefferson's data analytics team performed a 12-month retrospective review of EHR data from 598 patients comparing clinical outcomes and emergency room utilization for those receiving technology-enabled behavioral health integration (tBHI) with NeuroFlow versus a control group receiving treatment as usual (TAU). To ensure accurate matching, TAU patients were subject to a rigorous exclusion criteria and were only included in the analysis if they had ambulatory encounters at least 60 days before and after NeuroFlow's deployment, were being treated at the same clinics NeuroFlow was deployed in, had an F-code (behavioral health) diagnosis, and had at least two PHQ2/9 and/or GAD2/7 scores in the EHR.

In the six months prior to deploying NeuroFlow (baseline), the tBHI and TAU groups had similar ED utilization of 0.58 and 0.78 visits per life, respectively. In the six month period post-NeuroFlow implementation, ED utilization decreased by 34% in the tBHI group while concurrently increasing by 58% in the TAU group, **demonstrating significantly less ED utilization in the tBHI group using NeuroFlow compared to the TAU group (p = 0.002)**.



The tBHI group also yielded promising results based on reduction in anxiety and depression symptoms. **Statistically significant decreases compared to baseline were found in both PHQ9 (p = 0.01) and GAD7 (p < 0.001) assessment scores from NeuroFlow users;** whereas these differences were not observed in the TAU group. Overall, 82% of patients that utilized NeuroFlow reported symptom improvement for depression and 77% reported symptom improvement for anxiety according to these validated scales.

Leveraging NeuroFlow's digital automation and remote engagement capabilities, Jefferson was able to simplify and digitize their behavioral health screening efforts and find a renewed focus on measurement-based care. Since deploying NeuroFlow, a combined 57% of patients in the tBHI and TAU groups had at least one PHQ9 score in the EHR, which is likely higher than the true average screening rate given the strict inclusion criteria of having at least two PHQ9 records in the EHR for patients to be included in the analysis. Nevertheless, the analysis showed 76% of the tBHI group had at least one PHQ9 completed in NeuroFlow's platform in the same time period, **indicating at least 19% higher assessment compliance using NeuroFlow compared to the EHR alone**, likely due to the reduced administrative burden thanks to remote, automated data collection in NeuroFlow.

Jefferson's deployment of NeuroFlow included co-developed, custom OBGYN modules and journeys for perinatal mood and anxiety disorders, such as postpartum depression. Utilizing inclusion criteria similar to the main group but adjusted for pregnancy, a separate analysis was completed evaluating tBHI and TAU in OBGYN patients. In this smaller cohort (n = 70), nearly identical results were found as **ED utilization decreased compared to baseline by 35% in the tBHI group, whereas it increased by 46% in the TAU group.**



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*"It's really a great tool that helps us ensure that our patients are healthy and safe, and we are just seeing the beginning of it."*

**Dr. Jennifer Hummel, OBGYN at Jefferson Health**

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## Technology Integration & Business Implications

In a little over a year, Jefferson Health and NeuroFlow's strategic partnership has set a new standard for how providers across an enterprise can use technology to remotely support patients and integrate behavioral health. NeuroFlow's HIPAA-compliant native web platform facilitated a rapid deployment in dozens of practices with a variety of EHRs - in a matter of weeks and in some cases days.

As the program expanded, a bi-directional integration with Epic was deployed to further streamline collaboration between care teams and simplify documentation for fee-for-service CPT codes, driving top line revenue through traditional billing while also making an impact on cost of care for value-based arrangements such as the CPC+ program and Delaware Valley ACO.



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*"NeuroFlow helps us to reinforce the work we are doing during our traditional appointments and provides a better way for clinicians to partner with patients to monitor their progress during treatment."*

**Michael J Vergare, MD Professor & Chair Emeritus of  
Jefferson Psychiatry & Human Behavior**

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## ABOUT NEUROFLOW

NeuroFlow is a digital health company combining workflow automation, consumer engagement solutions, and applied AI to promote behavioral health integration in all care settings. NeuroFlow's suite of HIPAA-compliant, cloud-based tools simplify remote patient monitoring, enable risk stratification, and facilitate collaborative care. With NeuroFlow, health care organizations can finally bridge the gap between mental and physical health in order to improve outcomes and reduce the cost of care.

Learn more at [neuroflow.com](https://neuroflow.com)