Poster Code: RWD164

Same Concept, Different Cohort? Comparing Diagnosis Code-Based (Claims) and PHQ-9-Based (Specialty EMR) Operational Definitions of Depression in Real-World Data

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So What?

The definition ***and*** the data source you choose determine **who you study!**

BACKGROUND

Context

Depression cohorts are usually built from **diagnosis codes**, while the clinical standard for grading depression is a validated instrument such as the **PHQ-9**.

Diagnosis code
ICD-10-CM F32 / F33 …
recorded for billing

Symptom score
PHQ-9 total 0–27
measured in care

PHQ-9 severity bands (Kroenke 2001)

0–4	5–9	10–14	15–19	20–27
Minimal	Mild	Moderate	Mod. severe	Severe

This study: PHQ-9 ≥5 (at least mild symptoms)

The Gap

Codes and scores capture different information in different data sources, so the definition — and data source — may decide **who is studied**.

OBJECTIVES

Primary: *Compare a code-based (claims) and a PHQ-9-based (specialty EMR) depression phenotype.*

- Contrast treatment profiles and repeat measurement
- Describe data availability for research
- Acknowledge differences in cohort size

METHODS

Parallel, descriptive comparison — **not** patient-level overlap (sources not linked). Claims: Jan 2015–May 2026; EMR: Jan 2020–Dec 2025.

Figure 1: Two parallel definitions

CLAIMS	SPECIALTY EMR
DATA SOURCE PurpleLab® CLEAR Claims (U.S. all-payer)	**DATA SOURCE** Behavioral Health Insights™ behavioral-health EMR
DEFINITION 10 published ICD-10-CM code lists	**DEFINITION** ≥1 PHQ-9 score ≥5 (Kroenke 2001)
COHORTS 10 claims cohorts — See Poster Session 4: RWD123	**COHORT** 1 clinical cohort

Compare: treatment · repeat measurement · data availability · size

LIMITATIONS

- Sources are not linked, so patient-level overlap could not be measured.
- The EMR is one specialty network; claims are national, all-payer.
- A single PHQ-9 ≥5 indicates symptoms, not a confirmed diagnosis.
- Prescriptions differ by source and window: claims capture any fill over 11 years; the EMR captures e-prescriptions written over 6 years.

REFERENCES

1. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med. 2001;16(9):606-13.

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3. Kamauu JH, et al. Variation in Conceptual and Operational Definitions of Depression in RWR. ISPOR EU 2026 (companion).

4. FDA. Use of Real-World Evidence to Support Regulatory Decision-Making for Medical Devices. 2023.

DISCLOSURES & ACKNOWLEDGMENTS

A Kamauu, J Kamauu, M Buck, C Parker: employees of Navidence Inc.; A Kamauu & C Parker: co-founders. R Klesh: Behavioral Health Insights. SL DuVall: PurpleLab Inc. Data: PurpleLab® CLEAR Claims; BHI specialty EMR.

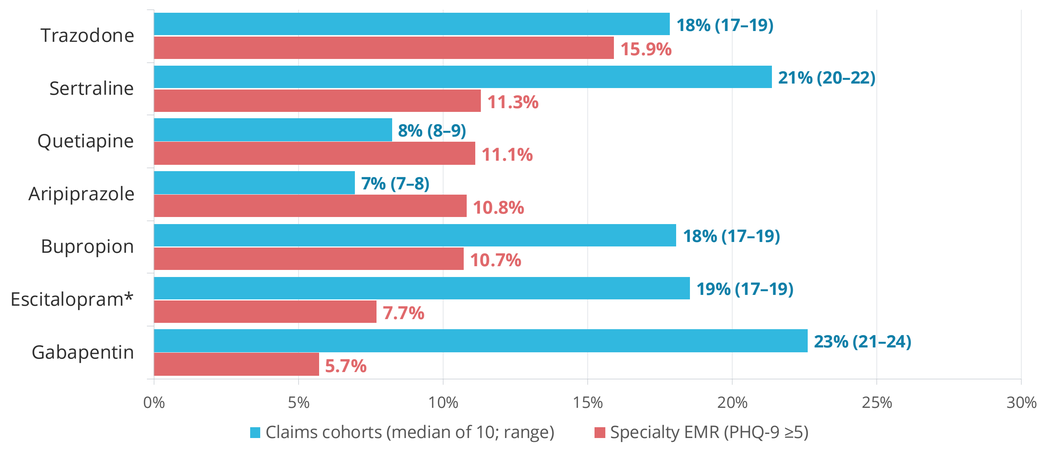
RESULTS

464,274	2.8	3 of 5	87M–110M
PHQ-9 ≥5 patients (specialty EMR)	PHQ-9 ≥5 assessments per patient (1.3M total)	Top-5 prescriptions shared by claims and EMR cohorts	Claims patients across 10 code-list definitions — See Poster Session 4: RWD123

Figure 2: Two lenses on the same concept

	Claims · ICD-10-CM diagnosis codes	Specialty EMR · PHQ-9 score ≥5
Identifies depression by	Recorded diagnosis (10 published code lists)	Measured symptoms (validated instrument)
#1 prescription	**Gabapentin**	**Trazodone**
Shared among top-5 prescriptions	Sertraline · Bupropion · Trazodone	
Seen only once	**52–58%** had only one type of depression code	**57.7%** had only one PHQ-9 ≥5 assessment
Repeat signal	**17–22** depression-code instances per patient	**2.8** PHQ-9 ≥5 assessments per patient
Patients (different sources)	87M–110M across 10 definitions	464,274

Figure 3: Different treatment profiles: % of patients with each drug



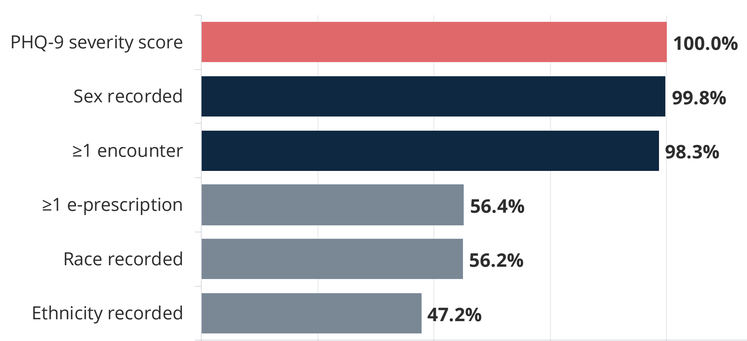
Antipsychotics
Quetiapine and aripiprazole: ~11% in the EMR vs. 7–9% in claims

Gabapentin
#1 in claims (21–24%) but only 5.7% in the EMR

Same 5, slightly reshuffled
All 10 claims cohorts share the same top-5 drugs; VA-FI swaps #4/#5

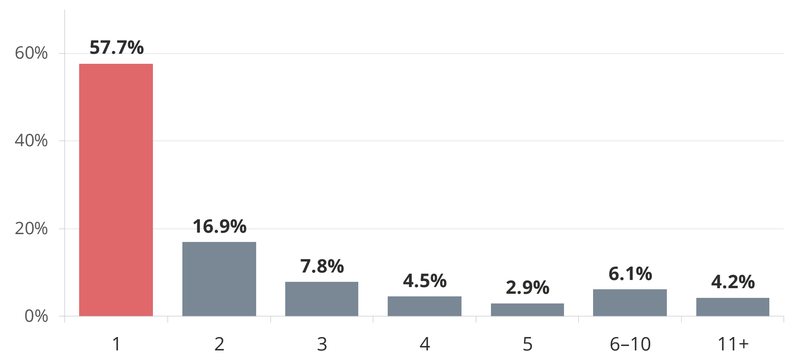
Claims top-5 (order in 9 of 10 cohorts): gabapentin, sertraline, escitalopram, bupropion, trazodone. *Claims: ≥1 fill any time Jan 2015–May 2026; EMR: ≥1 e-prescription 2020–2025. *Escitalopram oxalate; base escitalopram recorded separately (5.4%).*

Figure 4: What the specialty EMR offers research — and what it lacks



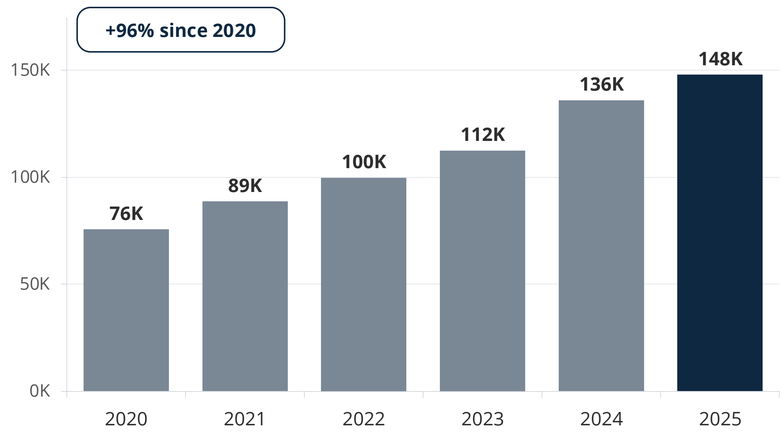
Severity is available for every patient (by design); race/ethnicity are often missing. Cohort: 56.2% female; 67.6% aged 18–49.

Figure 5: 57.7% had a single PHQ-9 ≥5 assessment



For context: in claims, 52–58% had only one type of depression code.

Figure 6: PHQ-9 ≥5 patients assessed per year nearly doubled



CONCLUSIONS

Key Findings

- Codes and PHQ-9 scores find depression through **different doors** — recorded diagnoses vs. measured symptoms.
- Treatment differs: **trazodone** leads in the PHQ-9 cohort, **gabapentin** in claims; antipsychotics are more common in specialty care.
- Sizes differ by source (464K vs. 87M–110M); this population is largely unidentifiable from codes alone.
- The EMR adds severity scores, but race/ethnicity are often missing.

Next Step

- Quantify **patient-level overlap** in linked data.

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