Introduction:
Depression is a leading cause of morbidity worldwide. The majority of treatment for depression occurs in primary care, but effective care remains elusive. Comparative studies of real-world antidepressant effectiveness are limited by the absence of clinical measures of severity of illness and suicidality.

Methods:
The Distributed Ambulatory Research in Therapeutics Network (DARTNet) was engaged to systematically implement Patient Health Questionnaire-9 (PHQ-9) data at the point of care for use in conjunction with electronic health record (EHR) data to capture, describe, and compare data on both baseline severity of illness and suicidality, and post-diagnosis response and suicidality, for depressed patients in participating DARTNet practices.

Results:
EHR data were obtained for 81,028 episodes of depression (61,464 patients) from 14 clinical organizations. Over 6-9 months, 4,900 PHQ-9s were collected from 2,969 patients in DARTNet practices (this included 1,892 PHQ-9 forms for 1,019 subjects in the depression cohort). Only 8.3% of episodes identified in our depression cohort had severity of illness information available in the EHR. For these episodes, considerable variation existed in both severity of illness (32.05% with no depression, 26.89% with minimal, 19.54% with mild, 12.04% with moderate, and 9.47% with severe depression) and suicidality (69.43% with a score of 0, 22.58% with a score of 1, 4.97% with a score of 2, and 3.02% with a score of 3 on item 9 of the PHQ-9). Patients with an EHR diagnosis of depression and a PHQ-9 (N=1,019) had similar severity, but slightly higher suicidality levels compared to all patients for which PHQ-9 data were present. The PHQ-9 showed higher sensitivity for identifying depression response and emergent (post-diagnosis) severity and suicidality; 25-30% of subjects had some degree of suicidal thought at some point in time according to the PHQ-9.

Conclusion:
This study demonstrated the value of adding PHQ-9 data to EHR data to improve diagnosis and management of depression in primary care and enable more robust comparative effectiveness research on antidepressants.