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### Subspecialty Clinic Utilization of Patient Health Screening Questionnaire -2 (PHQ-2) and -9 (PHQ-9): Are Kidney Transplant Recipients Less Depressed?

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**Background.** PHQ-9 and PHQ-2 have been validated in pediatrics as a screening tool to identify patients at risk for depression and self-harm. Rady Children's Hospital (RCHSD) utilized an Epic-based PHQ-2 outpatient screening tool that asked patients two questions: 1) Having little interest or pleasure in doing things over the past 2 weeks?, 2) Feeling down, depressed, or hopeless over the past two weeks? Patients were asked if they had thoughts of suicide. Nephrology and kidney transplant clinic results were compared with other specialty clinics.

**Methods.** This quality improvement study collected data from patients between the ages of 12-21 years of age who underwent PHQ-2 screening in six specialty clinics at RCHSD, 5/2016– 1/2017.

**Results.** Epic reports identified 12,478 patient encounters that were eligible for PHQ-2 screening and 9399 patients (65.6%) completed PHQ-2 screening. 4.6% and 1.4% of all patient visits had positive depression and suicide screening results, respectively. There were statistically significant differences in screening completion rates in the different clinics (Table 1) but all patients with high PHQ-2 scores completed a PHQ-9. Feelings of depression were most often reported during pulmonary clinic visits.

TABLE 1	PHQ2 completed <sup>a</sup>	PHQ2 >3	PHQ9 completed <sup>b</sup>	PHQ9 >10 <sup>c</sup>	Depressed/total %	Positive suicidality <sup>d</sup>	Suicidality/total screened %	OR (CI)	p-value
<b>Kidney Transplant</b>	214/722 (30%)	4	4 (100%)	1 (25%)	0.1	0 (0%)	0.0	1	
<b>Nephrology</b>	1151/1600 (72%)	50	51 (102%)	20 (39%)	1.3	11 (55%)	0.7	2.38 (0.85-6.677)	0.10
<b>Neurology</b>	2265/2695 (84%)	138	137 (99%)	85 (62%)	3.2	41 (48%)	1.5	3.41 (1.25-9.30)	0.016
<b>Endocrinology</b>	4700/5316 (88%)	295	298 (101%)	203 (68%)	3.8	104 (51%)	2.0	3.52 (1.30-9.52)	0.013
<b>Rheumatology</b>	384/1404 (27%)	31	32 (103%)	19 (59%)	1.4	8 (42%)	0.6	4.61 (1.61-13.24)	0.0045
<b>Pulmonary</b>	685/741 (92%)	59	60 (102%)	42 (70%)	5.7	14 (33%)	1.9	4.95 (1.78-13.79)	0.0022

a: percentage of PHQ2 completed relative to total encounters; b: percentage of PHQ9 completed relative to total number of PHQ2 >3; c: percentage of PHQ9 >10 relative to total PHQ9 completed; d: percentage of patients indicating thoughts of suicide with PHQ9 >10.

Kidney transplant recipients and nephrology patients were least likely to be identified with depression by PHQ2 scores when compared to Neurology, Endocrinology, Rheumatology and Pulmonary patient visits.

**Discussion/Conclusions.** At RCHSD the PHQ-2 screening was easily implemented by medical assistants and nurses. Unexpectedly, kidney transplant and nephrology patients were less likely to report feelings of depression during clinic visits than their peers in other clinics. Limitations of the study include: population study, limited information collected and visit rather than patient data. With implementation of screening, RCHSD created new behavioral pathways with Behavioral Health Specialists, patient education materials, counseling resource list to facilitate the recovery process. Quality of life survey results might be different between these outpatient groups, due to differences in disease severity.

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