Multilevel Intervention To Improve Equity In Access To Kidney Transplant For African Americans

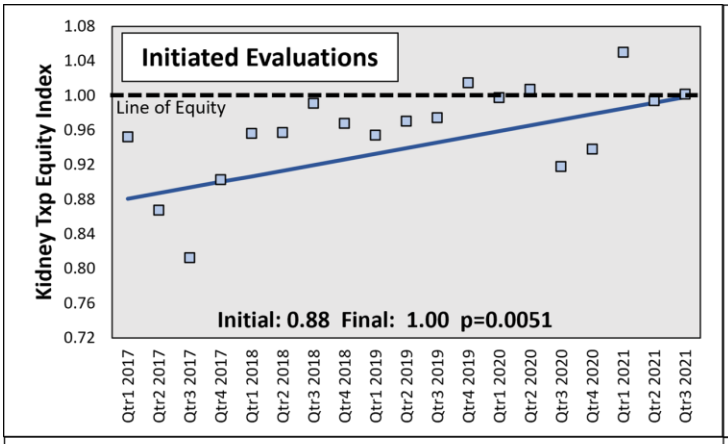
Ammar Mahmood MD, David Taber PhD, Zemin Su, Patrick Mauldin PhD, Thomas Morinelli, Michael Casey MD MS, Joseph Scalea MD, Derek DuBay MD

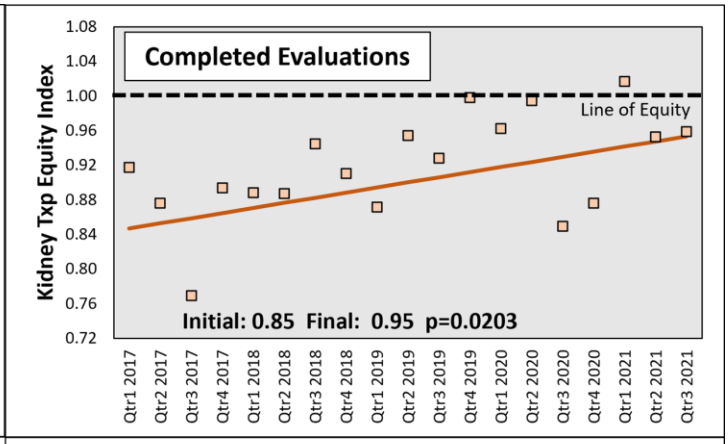
Introduction: African Americans (AAs) have reduced access to kidney transplant (KTX). Our center undertook a multilevel quality improvement endeavor to address KTX access barriers, focused on vulnerable populations. This program included dialysis center patient/staff education, embedding three telehealth centers across SC, partnering with community providers to facilitate testing/procedures, and increased use of marginal donors.

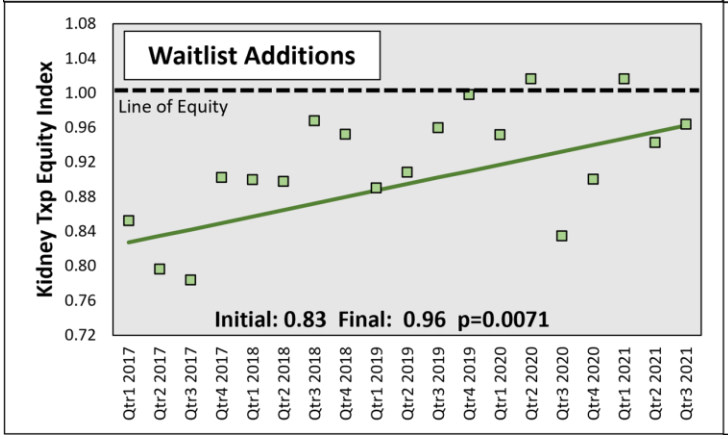
Methods: Time series analysis from 2017 to 2021 using segmented regression to assess trends in equitable access to KTX for AAs. Equity was measured using a modified version of the Kidney Transplant Equity Index (KTEI), defined as the proportion of AAs in SC receiving dialysis versus the proportion of AAs initiating evaluation, completing evaluation, waitlisting, and undergoing KTX. A KTEI of 1.00 is considered complete equity; KTEI < 1.00 is indicative of disparity.

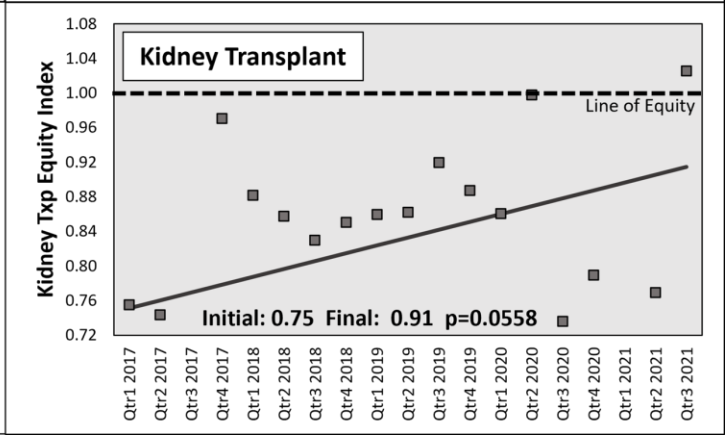
Results: From Jan 2017 to Sept 2021, 6,748 patients were referred for KTX (62.8% AA), 4,109 completed evaluation (59.7% AA), 2,762 were waitlisted (60.0%), and 1,229 underwent KTX (55.3% AA). During this time period, the average expected post-transplant survival (EPTS) score for recipients increased from 0.465 to 0.495 ($p=0.43$). The average kidney donor profile index (KDPI) increased from 0.329 to 0.421 ($p<0.001$). The percentage of donation after cardiac death (DCD) organs increased from 3.7% to 21.6% ($p=0.02$). MUSC's organ acceptance O/E increased from 1.06 to 2.35 ($p=0.02$). The KTEI for initiated/completed evaluations, waitlisting, and KTX demonstrated significant improvements in equity (Figure). The KTEI for initiated evaluations was 0.88 in 2017, improving to 1.00 in 2021 ($p=0.0051$). Completed evaluations KTEI improved from 0.85 to 0.95 ($p=0.0203$), while waitlist additions KTEI improved from 0.83 to 0.96 ($p=0.0071$). The KTEI also improved for KTX, from 0.76 to 0.91, which did not reach statistical significance ($p=0.0558$).

Conclusion: A multilevel intervention focused on improving access to vulnerable populations demonstrated significantly reduced racial disparities in AAs. The key features of this intervention appear to be several outreach measures that reduce structural barriers to transplant, waitlisting sicker ESRD patients, willingness to use "less perfect" kidneys, and aggressive organ acceptance behaviors.


Initiated Evaluations
Kidney Txp Equity Index
Line of Equity
Initial: 0.88 Final: 1.00 p=0.0051
1.08
1.04
1.00
0.96
0.92
0.88
0.84
0.80
0.76
0.72
Qtr1 2017
Qtr2 2017
Qtr3 2017
Qtr4 2017
Qtr1 2018
Qtr2 2018
Qtr3 2018
Qtr4 2018
Qtr1 2019
Qtr2 2019
Qtr3 2019
Qtr4 2019
Qtr1 2020
Qtr2 2020
Qtr3 2020
Qtr4 2020
Qtr1 2021
Qtr2 2021
Qtr3 2021


Completed Evaluations
Kidney Txp Equity Index
Line of Equity
Initial: 0.85 Final: 0.95 p=0.0203
1.08
1.04
1.00
0.96
0.92
0.88
0.84
0.80
0.76
0.72
Qtr1 2017
Qtr2 2017
Qtr3 2017
Qtr4 2017
Qtr1 2018
Qtr2 2018
Qtr3 2018
Qtr4 2018
Qtr1 2019
Qtr2 2019
Qtr3 2019
Qtr4 2019
Qtr1 2020
Qtr2 2020
Qtr3 2020
Qtr4 2020
Qtr1 2021
Qtr2 2021
Qtr3 2021


Waitlist Additions
Kidney Txp Equity Index
Line of Equity
Initial: 0.83 Final: 0.96 p=0.0071
1.08
1.04
1.00
0.96
0.92
0.88
0.84
0.80
0.76
0.72
Qtr1 2017
Qtr2 2017
Qtr3 2017
Qtr4 2017
Qtr1 2018
Qtr2 2018
Qtr3 2018
Qtr4 2018
Qtr1 2019
Qtr2 2019
Qtr3 2019
Qtr4 2019
Qtr1 2020
Qtr2 2020
Qtr3 2020
Qtr4 2020
Qtr1 2021
Qtr2 2021
Qtr3 2021


Kidney Transplant
Kidney Txp Equity Index
Line of Equity
Initial: 0.75 Final: 0.91 p=0.0558
1.08
1.04
1.00
0.96
0.92
0.88
0.84
0.80
0.76
0.72
Qtr1 2017
Qtr2 2017
Qtr3 2017
Qtr4 2017
Qtr1 2018
Qtr2 2018
Qtr3 2018
Qtr4 2018
Qtr1 2019
Qtr2 2019
Qtr3 2019
Qtr4 2019
Qtr1 2020
Qtr2 2020
Qtr3 2020
Qtr4 2020
Qtr1 2021
Qtr2 2021
Qtr3 2021