

Digital Health Data Solutions Tool Suite

Collecting, Validating, and Reporting Kidney Transplant Data using IPRO's Data Solutions Tool Suite



IPRO's Data Services Tool Suite

The Challenge

IPRO, in conjunction with Emory Transplant Center and the SouthEastern Kidney Transplant Coalition (SEKTx), was tasked with collecting data from nine Kidney Transplant Centers to address kidney transplant access disparities affecting African American End Stage Renal Disease (ESRD) patients residing in Georgia, North Carolina, and South Carolina. These data were not immediately available and were difficult to gather via either public or commercial data sources.

The Approach

IPRO worked with SEKTx to gather Kidney Transplant data from nine different Transplant Centers in Georgia, North Carolina and South Carolina. In order to combine and analyze the data, the IPRO Digital Health Data Solutions Team developed a REDCap Collection Survey instrument to upload thousands of rows of transplant data from the Centers. Due to the sensitive nature of the data, DUAs were established with each Center, and individual user and permission fields were created in order to ensure that only designated individuals at each transplant center could upload, validate, and view the data.

Data were collected regarding services provided from January 2012 through December 2016. Once the data were collected and reviewed, IPRO's Data Solutions Team ran quality checks, issued reports, and addressed missing or incomplete data submissions with appropriate staff at Transplant Centers. REDCap's built-in quality checks were also used to validate submissions and enhance project data quality. SEKTx and IPRO were able to combine the collected data with QualityNET database variables to further enhance the quality of the data and investigate any discrepancies in demographic representation as it pertains to kidney transplants.¹ SAS and SQL coding were also used to develop composite measures and additional data calculations for further analysis.

Once the data were compiled, IPRO's Data Solutions Team developed interactive dashboards for each Transplant Center with the goal of reporting patient demographics, the proportion of patients who started treatment appropriately, the location of treatment facility, and a roster of patients in care.

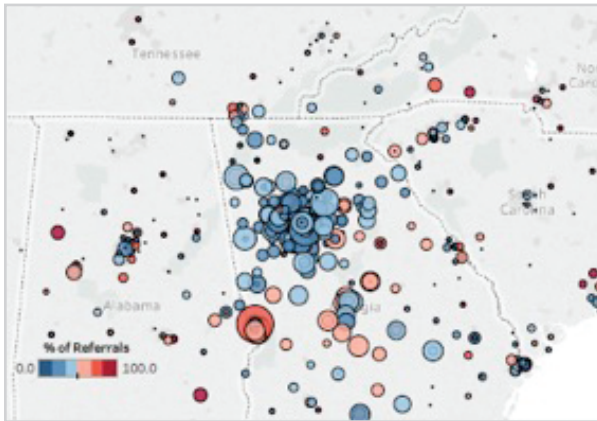
Results

Collecting, analyzing and reporting this data provided useful results for the Transplant Centers. In addition to collecting demographic and service area data, we were also able to identify specific centers likely to recommend that patients start treatment at facilities outside of patients'

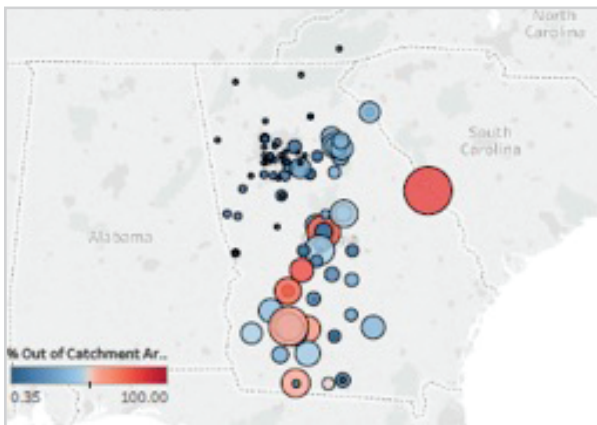
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Above: A map of the region, showing areas with high percentages of patients not checking in to begin renal disease treatment. Percentages range from 0-100 and are blue to red, respectively. The size of the circle is determined by the number of patients who failed to check in.



designated catchment service area. This allowed the Transplant Centers to identify instances where they could improve relationships with dialysis facilities and explore better service delivery for patients in specific geographic locations. Additionally, the Data Solutions team was able to identify high-risk dialysis facilities where a large percentage of patients failed to check-in for treatment at recommended locations. Ultimately, this project improved data collection, validation and reporting processes, and efforts are underway to analyze data for 2017 and the first half of 2018. SEKTx and IPRO are currently developing version 3.0 of the dashboards for transplant data reporting.

Left: This map indicates instances where dialysis facilities refer patients to a facility outside the intended referral zone. Percentages range from 0-100 and are blue to red respectively. The size of the circle is determined by the number of patients who received treatment at a facility outside of the associated zone of referral.

Looking Forward

IPRO's Digital Health Team is working with SEKTx to enhance reporting and investigate ways to improve the service available through the Transplant Centers. The Digital Health team is also exploring predictive modelling techniques that enable proactive interventions for the communities served by these Centers. Digital Health is expanding its use of these tools beyond SEKTx to enable broader technology adoption.

1 .QualityNet is the only CMS-approved website for secure communications and healthcare quality data exchange between: Quality Improvement Organizations (QIOs), hospitals, physician offices, nursing homes, End-Stage Renal Disease (ESRD) networks and facilities, and data vendors.

For information on IPRO, contact us at info@ipro.org.

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- Facilitate collaborative provider education and action
- Harness information technology to drive quality improvement
- Build and apply quality measures
- Collect and analyze data on large scale
- Create tools to assess performance