Comprehensive Dialysis Transportation: The Way to Sustain a Long-Term In-Center Short Daily Hemodialysis Program

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BACKGROUND

There is a rising demand for dialysis treatment among senior population. Dialysis physical toll prevents many patients arriving at the dialysis clinic via traditional transit from safely returning home the same way. While in-center short daily hemodialysis has been consistently associated with better outcomes, the availability of convenient transportation may be its most important limiting factor. Therefore, we examined the impact of a comprehensive transportation program on in-center daily hemodialysis compliance, vintage and survival.

OBJECTIVES

We examined the impact of a comprehensive transportation program on in-center daily hemodialysis compliance, vintage and survival.

METHODS

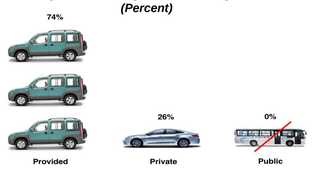
We assessed the prevalence of absences from hemodialysis sessions (no shows), the length of time on dialysis and the actuarial survival curve of 145 privately insured patients (93M/52F; mean age 56.1±19.3 years, range 8-95) receiving in-center short daily hemodialysis treatments (6-7 times/week; lasting 118±18.7 min, range 90-180; ultrapure dialysate and single-use high flux dialyzer). Round-trip free of charge shared passenger-transportation has been provided by a dedicated fleet of 10 midsize vans and 10 full time trained drivers, running about 1200 km throughout the day to timely attend 5 dialysis shifts, from 7am to 9pm, 7 days a week.

RESULTS

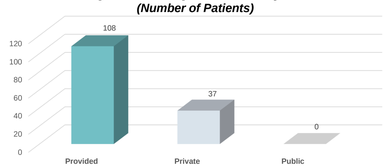
From June 2006 to May 2016, 74% (108/145) of our short daily hemodialysis patients were transported to and from the clinic by an exclusive transportation service and the remaining 26% (37 patients) used their private transportation (self-driven or brought by a family member or caregiver). No patients relied on public transport. Over the 10-year study period, average missed treatment rate was 1.4% or 4.4 days per patient-year. There was no patient dropout, allowing a dialysis vintage of 42.1±33.6 months (3-120). In parallel, the 5-year cumulative patient survival rates were 97%, 92%, 84%, 71% and 63% at 12, 24, 36, 48 and 60 months, respectively. Institutional transport costs have been offset by combining low missed treatment rate with high patient retention rate.

TRANSPORTATION OPTIONS

Dialysis Transportation Options
(Percent)



Dialysis Transportation Options
(Number of Patients)



ECONOMICS

Transportation Costs

. Upfront Investment – ***Vehicles***
. License, Insurance
. Fleet - ***Fuel***
- ***Maintenance***
. Labor - ***Salaries***
- ***Benefits***

Transportation-Induced Savings

. Low Missed Treatment Rate
. High Patient Retention Rate
. Low Hospital Admission Rate
. Low Hospital Length of Stay Rate

COMPLIANCE

Missed Treatment Rate

1.4% No Shows

(**4.4 days per patient-year**)

VINTAGE

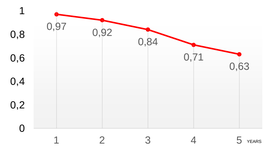
Time on Dialysis

42.1±33.6 Months

(Range **3-120 Months**)

SURVIVAL

Actuarial Survival Curve



CONCLUSIONS

Providing reliable transportation options for all patients helped us overcome compliance challenges on the way to establishing and sustaining an active in-center short daily hemodialysis program.

DISCUSSION

Once prescribed by the nephrologist, accepted by the patient and authorized by the health insurance company, the most challenging barrier to adopting in-center SDHD is the availability of comfortable, timely and efficient transportation to and from the dialysis unit.

This study's findings reveal a successful implementation of a regular transportation service that strongly favored our patients to comply with the daily dialysis schedule.

Our Dialysis Unit has provided in-center SDHD on a regular basis for the past 10 years, with consistent improvements on survival and quality of life. In spite of higher cost of dialysis treatment *per se*, by dramatically reducing hospital admissions and lengths of stay, lowering use of anti-hypertensive drugs and increasing kidney transplantation rate, SDHD tends to become economically advantageous. To a certain extent, it represents a more expensive ticket for a cheaper trip.

REFERENCES

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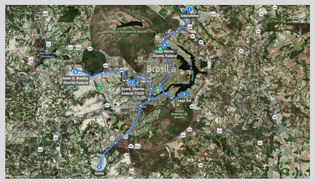
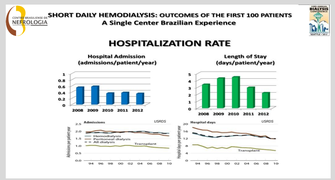
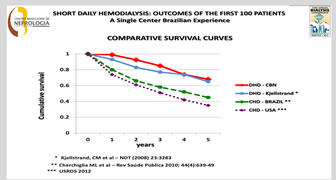
APPENDIX

DIALYSIS ROUTES



COMPARATIVE HOSPITALIZATION AND SURVIVAL





TRANSPLANTATION AND MORTALITY RATES