

BACKGROUND

In-center hemodialysis programs usually operate Monday through Saturday, encompassing two conventional thrice-weekly schedules: Mon-Wed-Fri or Tue-Thu-Sat. On Sundays, in the midst of the long 72-hour Fri-Mon or Sat-Tue interval, dialysis centers are regularly closed and patient care relies on emergency rooms.

OBJECTIVES

After setting up a 6 days a week in-center short daily hemodialysis program, we started to provide dialysis treatments also on Sundays. We have now examined the 10-year impact of the seven-day availability on patient schedule and compliance as well as on hospitalization and survival rates.

METHODS

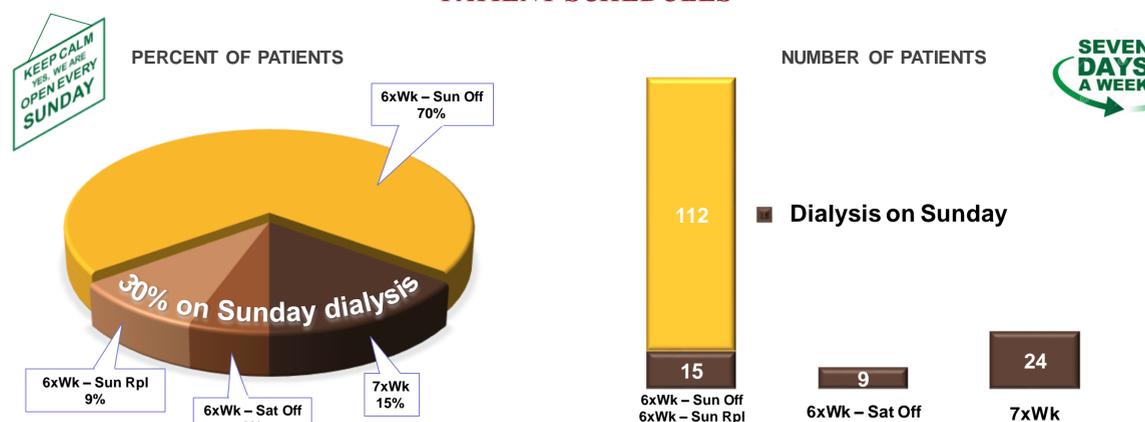
We assessed the conversion rate from 6 to 7 times a week, the prevalence of absences from hemodialysis treatments (no shows), the hospitalization rate and the actuarial survival curve of 160 private-insured patients (98M/62F; mean age at dialysis initiation 57.3 ± 8.2 yrs, range 8-92) receiving in-center short daily hemodialysis treatments (6-7 times/week; lasting 118 ± 18.7 min, range 90-180; ultrapure dialysate and single-use highflux dialyzer). To accommodate all patient needs, our hemodialysis schedule encircles five 2-hour duration shifts on weekdays, 3 shifts on Saturdays and 2 shifts on Sundays.

RESULTS

From June 2007 to May 2017, 24 out of 160 (15%) of our cumulative short daily hemodialysis patients extended their schedule from 6 to 7 treatments per week, 9 (6%) chose Saturdays as their regular day-off, and the remained 127 (79%) have occasionally dialyzed on Sundays to replace most of the missed treatment occurring in their original track. Over the 10-year study period, the average missed treatment rate was 1.47% or 4.5 days per patient-year and the hospitalization rate was 0.4 admissions per patient-year. In parallel, the 5-year cumulative patient survival rates were 98%, 92%, 82%, 69% and 60% at 12, 24, 36, 48 and 60 mo, respectively. Sunday dialysis additional costs have been offset by favoring low missed treatment rate and very low hospitalization rate.

160 PATIENTS ON IN-CENTER SHORT DAILY HEMODIALYSIS

PATIENT SCHEDULES



COMPLIANCE

Missed Treatment Rate

1.47% No-Shows

(4.5 days per patient-year)

HOSPITALIZATION RATE

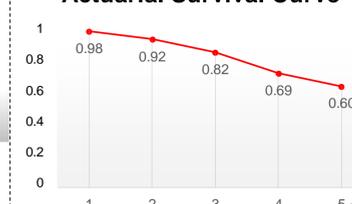
Admissions Per Patient-Year

0.4 Adm per patient-year

(1 adm every 30 Months)

SURVIVAL

Actuarial Survival Curve



CONCLUSION

Historically all but a few dialysis centers have provided treatments and care for patients Monday to Saturday, leading to concerns of higher mortality over weekends. To sustain a short daily hemodialysis program and to overcome its compliance and economic challenges, our dialysis center has successfully established a regular seven days a week schedule.

DISCUSSION

By introducing seven days a week dialysis service for our short daily hemodialysis patients, we have given them the option of *really daily* dialysis with no breaks (7xWk), the freedom of choosing any day-off other than Sunday (6xWk - Sat Off), or the opportunity of replacing, on Sundays, occasional missed treatment (6xWk - Sun Off). On average, 30% of our patients attend our Sunday dialysis program.

Prior studies from multiple fields have demonstrated that hospital admission on the weekend is associated with poorer patient outcomes. Seven-day dialysis services may well narrow the gap between weekday and weekend dialysis mortality, as supported by our consistently low hospitalization and mortality rates.

From an economic point of view, *extra* dialysis treatments delivered to our patients who extended their schedule from 6 to 7 times a week (2.25%) *exceed* the residual missed treatment rate (1.47%), and has allowed our Sunday dialysis to become, from concept to practice, a self-sustaining program.

Altogether, this Sunday dialysis program has been a convenient, protective and economically viable initiative.

REFERENCES

- 1 - Jeffrey S. Berns. Never on Sunday -- Except for Dialysis? - Medscape - Oct 12, 2011
- 2 - <https://www.nephroplus.com.br/try-not-to-give-more-than-a-one-day-gap-between-dialysis>
- 3 - <http://www.nhsconfed.org/~media/Confederation/Files/Publications/Documents>

APPENDIX

CBN&D LUCIO COSTA DIALYSIS CENTER



ERA-EDTA 2010: INTERIM ANALYSIS

RESULTS

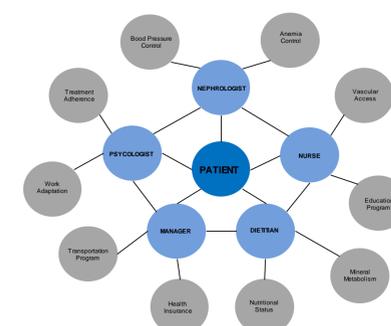
Analysis from the First 38 Incident SDHD Patients:

- GENERAL OUTCOMES**
- 78.5% employment rate of working-age patients
 - 21.8% on antihypertensive medications
 - 2.1% missed treatment
 - 4.3% days/patient-year hospitalization rate

- DIALYSIS PROFILE**
- 1164 ± 642 ml/treatment UF rate, 0.50 ± 0.07 URR
 - 5840 ± 4394 UI/week ESA dose, 11.9 ± 1.8 g/dl Hb
 - 9.2 ± 1.0 mg/dl Ca, 4.7 ± 1.4 mg/dl P, 205 ± 210 pg/ml PTH
 - 4.0 ± 0.6 g/dl Alb, 19.7 ± 8.4 mg/l B2-M and 7.7 ± 6.4 mg/l CRP

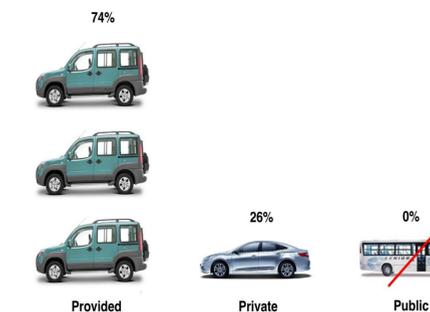
- FOLLOW UP**
- Six patients underwent successful renal transplantation
 - One 74-yo pt has died of lung cancer after 38 m on dialysis
 - Thirty-one patients remain on short daily hemodialysis

CBN INTERDISCIPLINARY PREDIALYSIS CARE



ASN 2016: CBN&D DIALYSIS TRANSPORTATION

(Percent)



(Number of Patients)

