



# Impact of Delayed Graft Function (DGF) on Length of Stay After a Deceased Donor Kidney Transplant

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## INTRODUCTION

- Deceased donor kidney transplant (DDKT) recipients who experience Delayed Graft Function (DGF) might have longer index hospitalizations
- The Medicare Diagnosis Related Group bundled payment system aimed to increase efficiency and decrease cost of hospital care, but may disincentivize the use of kidneys perceived to be at higher risk of DGF
- Objectives:
  - Assess temporal trends in DGF over the past decade
  - Determine the impact of DGF on length of stay (LOS) of the index hospitalization for DDKT

## METHODS

- Data source: United Network for Organ Sharing (UNOS) Standard Transplant Analysis and Research (STAR) files
- Study population: 112,748 DDKT recipients in the United States, 2009-2018
  - Excluded: multi-organ transplant recipients, LOS > 180 days (n = 67) or not reported (n = 658), unknown DGF status (n = 10)
- DGF definition: received dialysis within the first 7 days post-transplant
- Outcomes of interest:
  - LOS of the index hospitalization for DGF versus non-DGF patients
  - Total excess number of hospital days attributable to DGF
- Model: An adjusted Poisson regression model examined the association between DGF and LOS

## CONCLUSIONS

- Incidence of DGF has been increasing over time, with a sharp rise after implementation of KAS in 2014
- Recipients with DGF had a significantly longer index hospitalization compared to those without DGF (median 7 versus 5 days)
- DGF accounted for 93,231 excess hospital days over the 10-year study period
- After accounting for recipient, donor, and transplant characteristics, DGF was significantly associated with longer index hospitalization

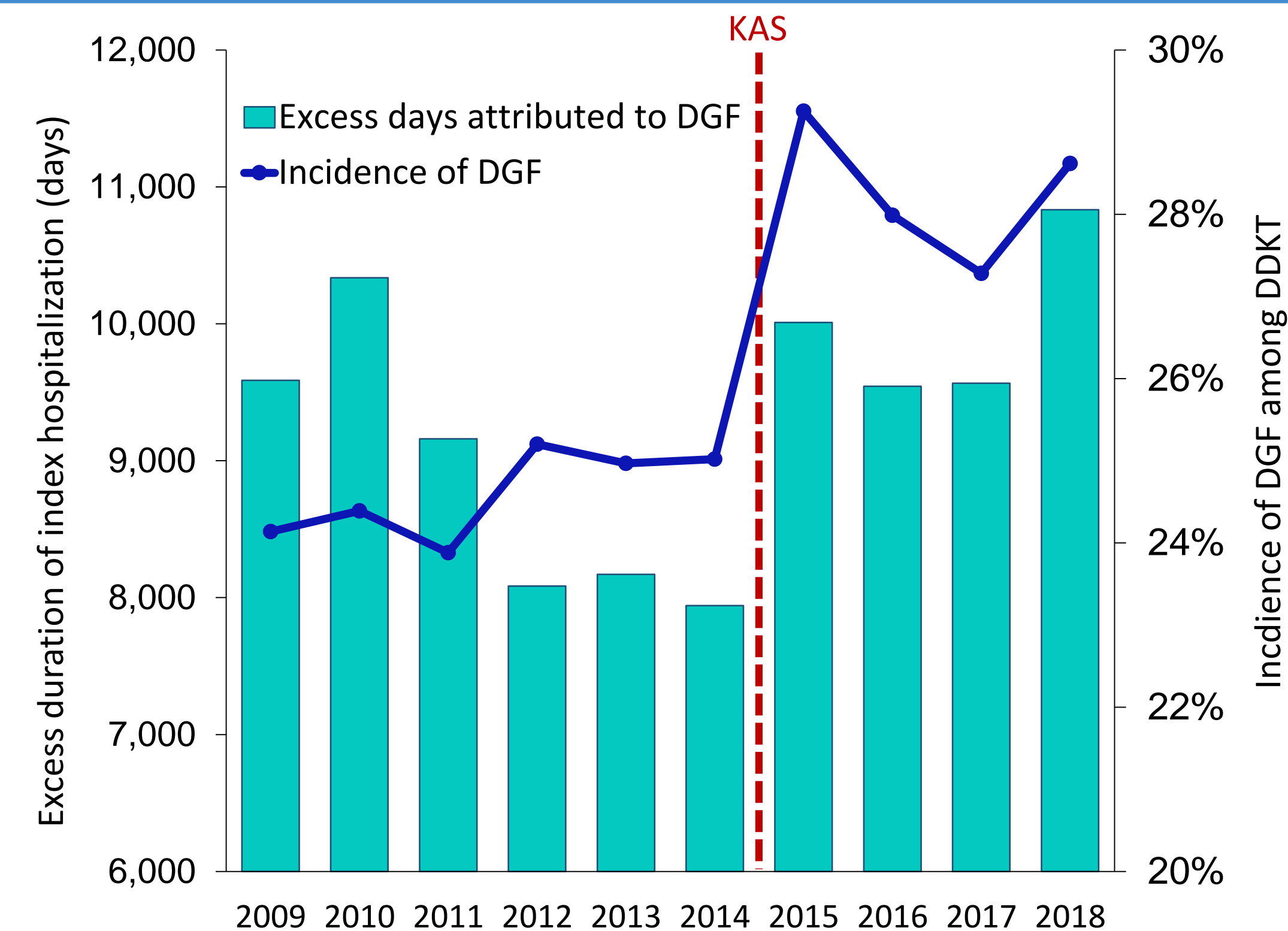
## RESULTS

**Table 1.** Characteristics of DDKT recipients with DGF versus without DGF

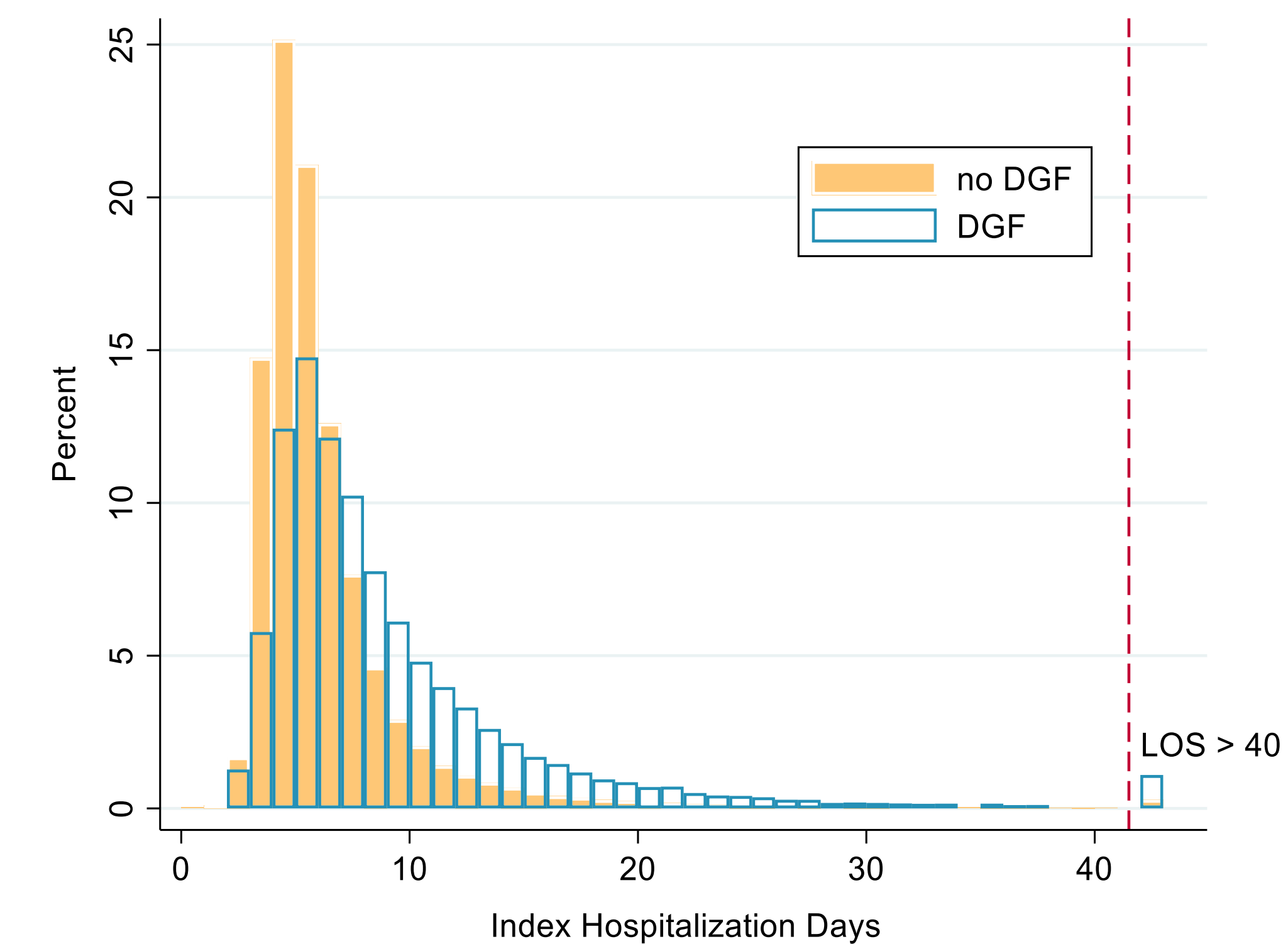
Median (IQR), or n (col %)	DGF (n = 29,589)	No DGF (n = 83,159)	Total (n = 112,748)
<b>Recipient Characteristics</b>			
Age	55 (45-63)	53 (41-63)	54 (42-63)
Female	33%	43%	40%
Black race	40%	31%	33%
Diabetes	42%	31%	34%
BMI	29 (25-33)	27 (23-31)	28 (24-32)
Preemptive	2%	11%	9%
Years on Dialysis (if non-preemptive)	5 (3-7)	4 (2-6)	4 (2-6)
<b>Donor Characteristics</b>			
Age	43 (30-53)	37 (24-50)	39 (25-51)
DCD	28%	14%	18%
Diabetes	9%	7%	7%
Hypertension	34%	25%	27%
Creatinine	1.0 (0.7-1.6)	0.9 (0.7-1.2)	0.9 (0.7-1.3)
KDPI	54 (34-74)	43 (22-66)	46 (24-69)
<b>Transplant Characteristics</b>			
CIT	18 (13-24)	16 (11-22)	16 (11-22)
HLA mismatch	4 (4-5)	4 (3-5)	4 (3-5)
Machine perfusion	48%	45%	46%
<b>Length of Stay</b>	<b>7 (5-10)</b>	<b>5 (4-6)</b>	<b>5 (4-7)</b>

All p < 0.001 when comparing the DGF vs non-DGF groups

DGF was significantly associated with **1.52 (95% CI: 1.50 – 1.54)** times longer length of stay for index hospitalization, after adjusting for recipient, donor, and transplant characteristics.



**Figure 1:** Temporal trends in the incidence of DGF and total excess number of days for index hospitalization



**Figure 2:** Distribution of Length of Stay for index hospitalization for recipients with DGF versus no DGF

