The Collaborative Improvement and Innovation Network (COIIN): Deceased donor transplant rates and offer acceptance practices

Andrew Wey, PhD

Disclosures

Andrew Wey, PhD
Biostatistician
SRTR/CDRG/HHRI, Minneapolis, MN, United States

I have no financial relationships to disclose within the past 12 months relevant to my presentation. The ACCME defines 'relevant' financial relationships as financial relationships in any amount occurring within the past 12 months that create a conflict of interest.

My presentation does/does not include discussion of off-label or investigational use, and I do/do not intend to reference unlabeled/unapproved uses of drugs or products in my presentation.

SR TR SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Collaborators

SRTR

Sally Gustafson, MS

Nicholas Salkowski, PhD

Bertram Kasiske, MD

Ajay Israni, MD

Jon Snyder, PhD

UNOS

Julia Foutz, MPH

Bob Carrico, PhD

Kristen Sisaithong, MA

Henrisa Tosoc-Haskell, RN, MS, MSHA

Maureen McBride, PhD

David Klassen, MD

Background

COIIN aimed to increase transplants of kidneys with a kidney donor profile index (KDPI) greater than 50% by reducing risk aversion through a collaborative approach to performance improvement.

COIIN was a 3-year study split into three phases:

- Design
- Implementation
- Evaluation

Background

Design

- Identified practice model hospitals (PMHs): Kidney programs with high acceptance rates and favorable graft survival
- Interviews and on-site visits to PMHs was the foundation for the intervention for enrolled and participating programs

Implementation

- Split into temporally separate but sequential cohorts
- Cohort A was smaller and more selective (19 of 44 applications) with five PMHs
- Cohort B was larger and less selective (39 of 47 applications) with one PMH, and included 20 hospitals that applied and were not selected for cohort A

Evaluation

- As part of COIIN, participating hospitals were constantly evaluating specific performance measures
- This study compared the organ utilization practices of programs participating in COIIN with those of programs not participating in COIIN.

"Comparison" groups

We compared the deceased donor transplant and offer acceptance rates for programs in three different groups:

- COIIN cohort A
- COIIN cohort B
- Programs not participating in COIIN

Evaluated cohort

Period 1
- January 1, 2016–December 31, 2016
- Determines the deceased donor transplant and offer acceptance rates for each group before the COIIN intervention

Period 2
- January 1, 2017–September 30, 2017
- Active intervention period for cohort A
- Especially interested in the difference between periods 1 and 2 for cohort A compared with programs not in COIIN

Period 3
- October 1, 2017–June 30, 2018
- Active intervention period for cohort B
- Especially interested in the difference between periods 2 and 3 for cohort B compared with programs not in COIIN

Analysis

Deceased donor transplant rates

- Cox proportional hazards model with a period-prevalent cohort.
- Time-scale was calendar time in order to identify temporal changes in deceased donor transplant rates.
- Adjusted for several candidate characteristics at listing, including time on the list at the beginning of the cohort.
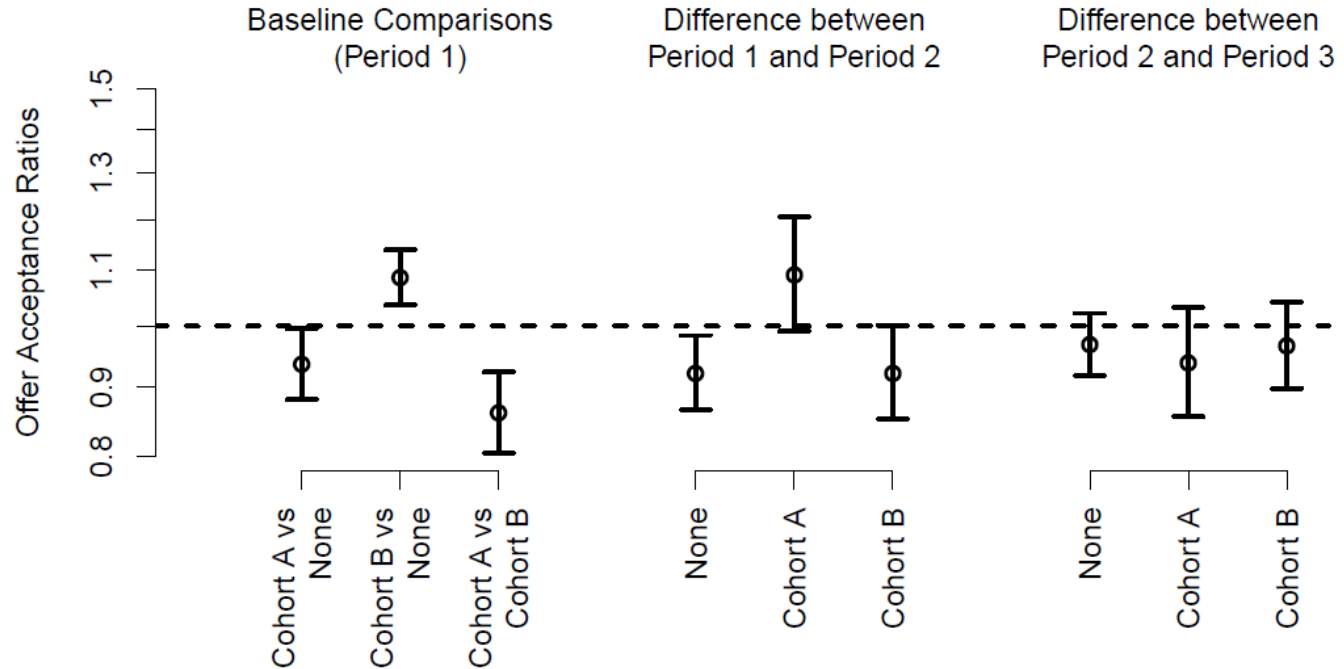
Offer acceptance rates

- Logistic regression.
- Included a linear effect for calendar time to identify temporal changes in offer acceptance rates.
- Adjusted for candidate and donor characteristics, and offer number.

Deceased donor transplant rates

Offer acceptance rates
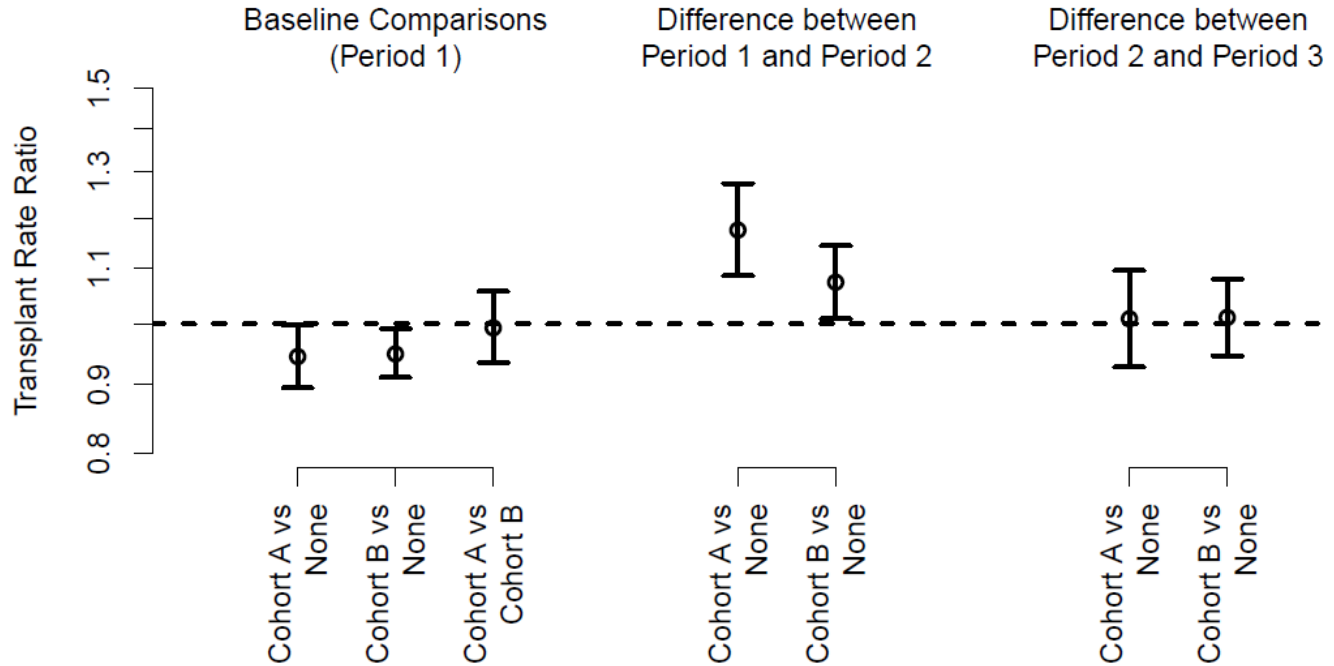
SCIENTIFIC REGISTRY OF TRANSPLANT RECIPIENTS

Conclusion

Cohort A but not cohort B had higher deceased donor transplant and offer acceptance rates after starting the COIIN intervention. There are multiple reasons for the differences between cohorts A and B:

- 20 cohort B programs originally applied for cohort A. COIIN required programs to identify at least two people engaged in increasing transplants.
- Cohort B was nearly twice as large as cohort A, resulting in less focused monthly conference call discussions due to the larger group.
- Cohort A was more selected: more PMHs than cohort B, may have had more hospitals with more resources, and more selective in outcome measures.
- Cohort B had higher baseline acceptance rates, possibly leaving less room for improvement.

Further monitoring is required to understand the effect of COIIN on posttransplant outcomes.

Limitations

In addition to the typical limitation of unmeasured risk factors, COIIN was a quality improvement project and therefore not a randomized or blinded study.

- COIIN participants were selected based on potentially important factors, e.g., could not be under active MPSC review, a potential cause of the notable baseline differences in transplant and offer acceptance rates.
- Utilization may have increased because participants knew COIIN was evaluating transplant and offer acceptance rates, i.e., the Hawthorne effect.

Questions

Are there any questions?

Extra: Covariates

Deceased donor transplant rate model

Age, blood type, BMI, diabetes type, education level, ethnicity, sex, height, previous malignancy, peripheral vascular disease, primary payer, race, total albumin, weight, working for income, CPRA, primary diagnosis, years of ESRD, preemptive listing, previous heart transplant, waiting for heart transplant, previous KP transplant, waiting for KP transplant, previous liver transplant, waiting for liver transplant, previous lung transplant, previous pancreas-alone transplant, previous kidney transplant, and previous failed kidney transplant.

Extra: Covariates

Offer acceptance model

Candidate factors: Dialysis at offer, BMI, primary diagnosis, CPRA at beginning of cohort, blood type, kidney-pancreas candidate, estimated posttransplant survival, and age at offer.

Donor factors: PHS increased risk, DCD donor, kidney donor risk index, and HCV positive.

Candidate-donor factors: Number of HLA mismatches, local, candidate/donor body surface area, and distance between donor and transplant hospitals