

Disclosures

Jonathan Miller, PhD
Biostatistician
Hennepin Healthcare Research Institute, Minneapolis, MN

I have no financial relationships to disclose within the past 12 months relevant to my presentation.

My presentation does not include discussion of off-label or investigational use.

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Prediction of Cause, Age, and Location-Consistent Deaths

Jonathan M. Miller, David Zaun, Nick L. Wood, Grace
R. Lyden, Ryutaro Hirose, Ajay K. Israni, Jon J. Snyder

Background

- Cause, age, and location-consistent (CALC) deaths, calculated from the Centers for Disease Control and Prevention (CDC) Multiple Cause of Death dataset, has become a popular measure for estimating donor potential in an organ procurement organization (OPO) donation service area (DSA).
- CDC data are published with a 2-year lag, meaning data available in 2023 are for deaths from 2021.
- The data lag limits OPOs' ability to track impacts of changes to their practice in near-real time.
- This study presents a method to predict OPOs' current CALC deaths using Scientific Registry of Transplant Recipients (SRTR) data.



Methods

- Hierarchical linear regression models estimated monthly CALC deaths by DSA January 2019–December 2021.
- Model predictors: Year, number of deaths referred to the OPO in the month, number of imminent and eligible deaths together reported by the OPO in the month, month of the year, random intercept for the OPO.

Results - Equation

$$\begin{aligned} & \text{CALC} = -455.1737 \\ & + (0.000261 * \text{Number of Referrals [Month]}) \\ & + \left(0.02579 \right. \\ & * \text{Number of Imminent or Eligible Deaths} \left[\frac{\text{DNR}}{\text{Month}} \right] \left. \right) \\ & + (0.2307 * \text{Year}) \\ & + \text{Month Coefficient} \\ & + \text{OPO Coefficient} \end{aligned}$$

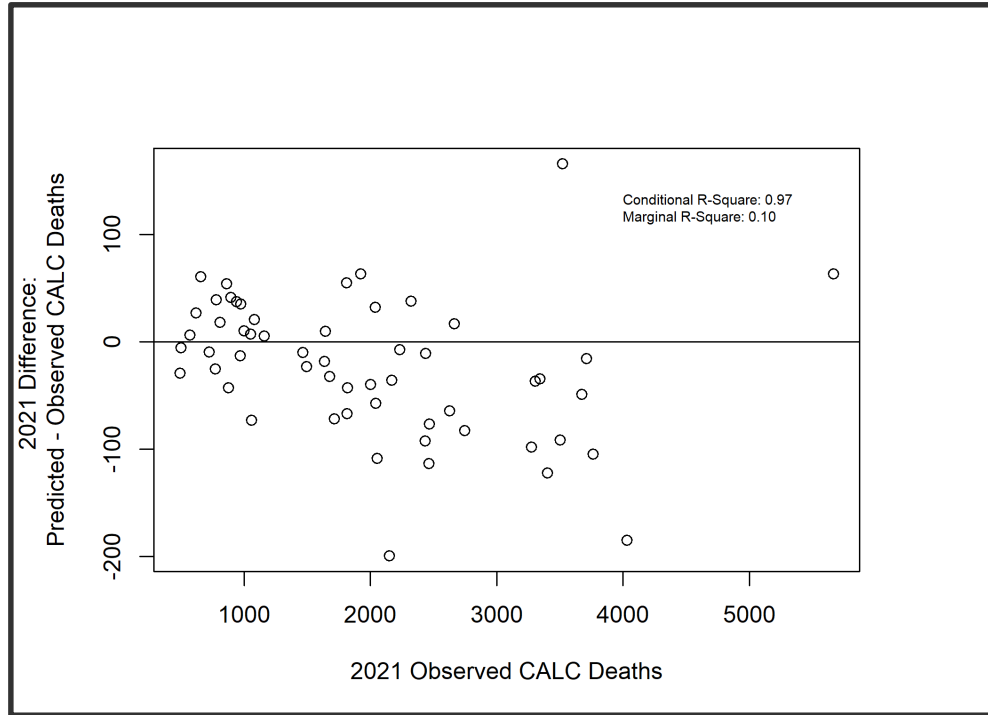
Results – Month Coefficients

Month	Coefficient
January	0
February	-0.4951
March	-0.0881
April	-0.4099
May	-0.1751
June	-0.2689
July	-0.1074
August	-0.1024
September	-0.3136
October	-0.1182
November	-0.2082
December	0.0421

Results – OPO Coefficients

OPO	Coefficient	OPO	Coefficient	OPO	Coefficient	OPO	Coefficient	OPO	Coefficient
ALOB	0.4046	GALL	3.0562	MSOP	-1.6614	OHLB	-0.3624	TXGC	3.6076
AROR	-1.8303	HIOP	-4.9771	MWOB	-0.2009	OHLC	-3.1442	TXSA	1.7929
AZOB	1.9387	IAOP	-2.3718	NCCM	-2.3919	OHLP	-1.2600	TXSB	3.8609
CADN	2.8987	ILIP	3.6420	NCNC	1.4241	OHOV	-3.5406	UTOP	-3.0036
CAGS	-2.6209	INOP	1.8470	NEOR	-4.2587	OKOP	0.0713	VATB	1.0592
CAOP	7.5660	KYDA	0.7955	NJTO	-0.1426	ORUO	0.0046	WALC	2.6508
CASD	-2.7195	LAOP	0.2509	NMOP	-3.8916	PADV	3.7639	WIDN	-3.0280
CORS	-0.5393	MAOB	3.4336	NVLV	-2.5083	PATF	1.5848	WIIUW	-2.1285
FLFH	-0.7867	MDPC	2.0373	NYAP	-3.5577	PRLI	-2.3938		
FLMP	1.7468	MIOP	3.4255	NYFL	-3.3491	SCOP	0.3788		
FLUF	0.4677	MNOP	1.0042	NYRT	3.6019	TNDS	3.5399		
FLWC	1.9583	MOMA	-0.2176	NYWN	-4.6199	TNMS	-2.3072		

Results – Calibration



Conclusion

- Prediction of CALC deaths from SRTR data enables OPOs to estimate their donor potential in near-real time.





Transplantation

Director Jon Snyder, PhD, MS

Medical Director Ajay Israni, MD, MS

Surgical Director Ryutarō Hirose, MD

Program Manager Caitlyn Nystedt, MPH, PMP

Sr. Administrative Assistant Sydney Kletter

Marketing & Comm. Mona Shater, MA
Amy Ketterer, SMS
Tonya Eberhart

Project Managers Katherine Audette, MS
Bryn Thompson, MPH
Katie Siegert, MPH

Project Coordinator Avery Cook

Medical Editor Anna Gillette

Sr. Manager, Biostatistics David Zaun, MS

Sr. Biostatisticians Jon Miller, PhD, MPH
Grace Lyden, PhD
Nick Wood, PhD

Biostatisticians David Schladt, MS
Tim Weaver, MS
Yoon Son Ahn, MS

IT, Web, Database, Simulation Ryan Follmer
Patrick Johnson
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Eugene Shteyn, MS



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