

## The Development of a Machine Learning Inpatient Acute Kidney Injury Prediction Model\*

Koyner, Jay L., MD; Carey, Kyle A., MPH; Edelson, Dana P., MD, MS; Churpek, Matthew M., MD, MPH, PhD

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## The Artificial Intelligence Clinician learns optimal treatment strategies for sepsis in intensive care

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[Journal of Clinical Monitoring and Computing](#)

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## Applying machine learning to continuously monitored physiological data

Authors

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Barret Rush , Leo Anthony Celi, David J. Stone



**Viewpoint**

July 3, 2018

## Big Data and Predictive Analytics Recalibrating Expectations

Nilay D. Shah, PhD<sup>1</sup>; Ewout W. Steyerberg, PhD<sup>2</sup>; David M. Kent, MD, MS<sup>3</sup>

**Viewpoint**

September 18, 2018

## Deep Learning—A Technology With the Potential to Transform Health Care

Geoffrey Hinton, PhD<sup>1</sup>

September 18, 2018

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William W. Stead, MD<sup>1</sup>

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December 4, 2018

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Edward H. Shortliffe, MD, PhD<sup>1,2</sup>; Martin J. Sepúlveda, MD, ScD<sup>3</sup>



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Authors

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Lieuwe D. J. Bos, Elie Azoulay, Ignacio Martin-Loeches

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Perspective | Published: 06 September 2018

## Deep learning in biomedicine

Michael Wainberg, Daniele Merico, Andrew Delong & Brendan J Frey

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## Data science is science's second chance to get causal inference right: A classification of data science tasks

Miguel A. Hernán, John Hsu, Brian Healy

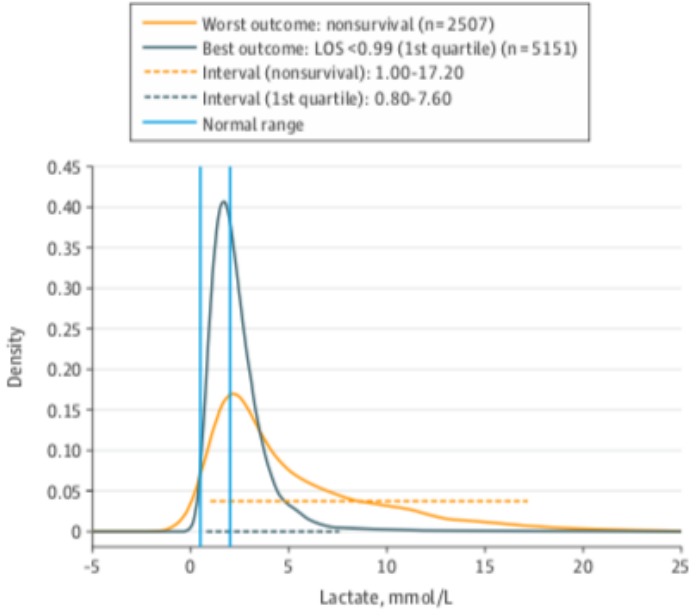


# Assessment of Intensive Care Unit Laboratory Values That Differ From Reference Ranges and Association With Patient Mortality and Length of Stay

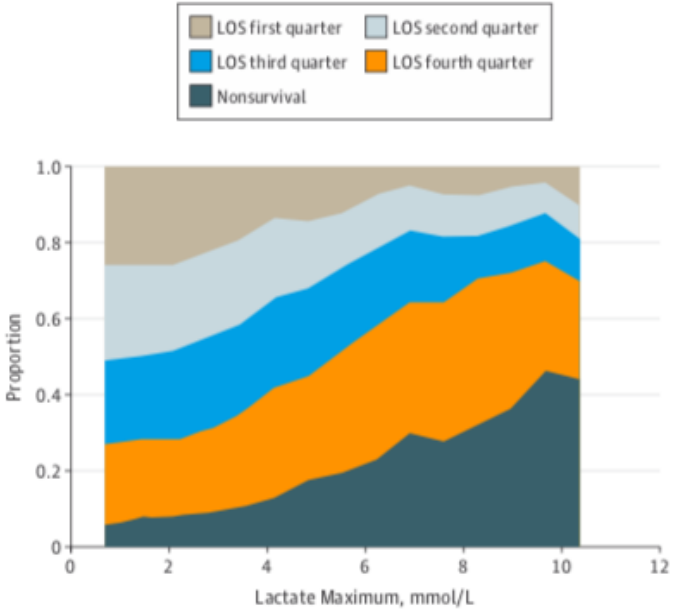
Patrick D. Tyler, MD; Hao Du, BS; Mengling Feng, PhD; Ran Bai, BS; Zenglin Xu, PhD; Gary L. Horowitz, MD; David J. Stone, MD; Leo Anthony Celi, MD, MS, MPH

Variables	Hazard Ratio	95% CI		p-value
		Lower Bound	Upper Bound	
<b>Potassium Category (4~5 mEq/L as reference)</b>				
3.5~4.0	1.06	0.96	1.18	0.26
3.0~3.5	1.21	1.02	1.44	0.03
<3	1.68	1.30	2.17	<0.001
<b>Age (18~35.25 as reference)</b>				
35.25~53.5	1.22	0.98	1.53	0.08
53.5~71.75	1.60	1.29	1.98	<0.001
71.75~91.4	1.03	0.80	1.31	0.83
<b>Gender, male</b>	1.21	1.10	1.32	<0.001
<b>Apache_IV (&lt; 35 as reference)</b>				
35~47	1.19	1.01	1.39	0.04
47~63	1.37	1.17	1.60	<0.001
63~195	1.78	1.53	2.07	<0.001
<b>Charlson score</b>	1.03	1.01	1.05	0.006

**C** Maximum lactate measurement on first ICU admission vs ICU mortality



**D** Relative proportions for maximum lactate values



# Barriers to AI for Decision Support

- Reproducibility issues
- Data issues
- Workforce issues
- Transfer learning and generalizability issues

