

- Are you a patient? Visit VanderbiltHealth.com (<http://www.vanderbilthealth.com>)



Monroe Carell Jr. Children's Hospital at Vanderbilt (<http://www.childrenshospital.vanderbilt.org/>)
 Vanderbilt University School of Medicine (<http://medschool.vanderbilt.edu/>)
 Vanderbilt University School of Nursing (<http://www.nursing.vanderbilt.edu/>)
 Vanderbilt University (<http://www.vanderbilt.edu/>)
 Research at Vanderbilt (<http://research.vanderbilt.edu/>)
 For Patients and Visitors (<http://www.vanderbilthealth.com>)
 Resources for Researchers, Employees and Students (<http://www.mc.vanderbilt.edu>)

Making order out of ordinal data

by [Melissa Stamm](http://news.vanderbilt.edu/author/melissamarino/) (<http://news.vanderbilt.edu/author/melissamarino/>) | Posted on Tuesday, Jun. 12, 2012 – 9:00 AM



(iStock)

Stage of disease (mild, moderate, severe) and frequency of drug use (never, yearly, monthly, weekly, daily) are examples of “ordinal” data, a type of data common in medical research. However, statistical methods for analyzing such data are limited.

Associate professors of biostatistics Chun Li (<http://biostat.mc.vanderbilt.edu/wiki/Main/ChunLi>) and Bryan Shepherd (<http://biostat.mc.vanderbilt.edu/wiki/Main/BryanShepherd>) have developed a new approach for analyzing ordinal data. They describe a new “residual” (a measure of how far an observed value is from its expected value) in the June issue of *Biometrika* (<http://biomet.oxfordjournals.org/content/99/2/473.abstract>). The new approach accounts for the ordered nature of the data without assigning arbitrary scores to categories – and considers categories’ relative position to other categories.

In collaboration with the Vanderbilt Institute for Global Health (<http://globalhealth.vanderbilt.edu/>), the researchers then demonstrated the residual’s utility by uncovering a non-linear association between age and the odds of having more severe cervical lesions among HIV-infected women from Zambia.

The authors note that improved statistical methods allow researchers to more easily detect meaningful associations with fewer patients, saving money and increasing the ability to make important discoveries.

The research was supported by grants from the [National Human Genome Research Institute](#) (<http://www.genome.gov/>) (HG004517) and the [National Institute of Allergy and Infectious Diseases](#) (<http://www.niaid.nih.gov/Pages/default.aspx>) (AI093234) of the National Institutes of Health.

Contact:

Melissa Stamm, (615) 322-4747

melissa.stamm@vanderbilt.edu (<mailto:melissa.stamm@vanderbilt.edu>)

Recent Stories from VUMC News and Communications Publications



- [Vanderbilt Medicine](#)

Getting Personal (<http://www.mc.vanderbilt.edu/vanderbiltmedicine/index.html?article=13095>)



- [Nurse](#)

The Art of Aging (<http://www.vanderbilt.edu/vanderbiltnurse/2012/04/the-art-of-aging/>)



- [Momentum](#)

Forecast Positive (<http://www.vanderbilt.edu/magazines/momentum/2012/06/forecast-positive/>)



- [Hope](#)

A Home Run (<http://www.childrenshospital.vanderbilt.org/hope/?p=932>)



- [Vanderbilt Medicine](#)

Bouncing Back (<http://www.mc.vanderbilt.edu/vanderbiltmedicine/index.html?article=13105>)

more (<http://news.vanderbilt.edu/section/vumc-publications/>)

Find Us On:



<http://www.youtube.com/user/vanderbilthealth>



<http://twitter.com/vumchealth>



<http://www.facebook.com/VanderbiltHealth>



85,118 people like this. Sign Up to see what your friends like.

Health Topics (<http://www.vanderbilthealth.com/main/healthtopics>) Doctors

(<http://www.vanderbilthealth.com/main/findadoc>) Locations (<http://www.vanderbilthealth.com/main/maps>) Guide to VUMC (<http://www.vanderbilthealth.com/newsite/information.php>) My Health at Vanderbilt

(<https://www.myhealthatvanderbilt.com/myhealth-portal/app>)

For Referring Physicians (<http://staging.vanderbilthealth.com/main/24065>) Giving

(<http://www.vanderbilthealth.com/main/27710>) Volunteer

(<http://www.vanderbilthealth.com/volunteeratvanderbilt/>) Media (<http://www.mc.vanderbilt.edu/root/vumc.php?site=npa&doc=207>) Quality Answers (<http://www.vanderbilthealth.com/main/11159>)

Careers (<http://www.mc.vanderbilt.edu/careers/>) Pay Your Bill

(<https://vanderbilt.patientcompass.com/hc/sp/vanderbilt/blindPayment>) About VUMC

(<http://www.vanderbilthealth.com/main/guide>) Feedback (http://www.vanderbilthealth.com/feedback.html?site=main&doc=11160&TB_iframe=true&height=460&width=400) Privacy Policy

(<http://www.vanderbilthealth.com/main/23526>)

Popular Links A-Z Directory (<http://www.vanderbilthealth.com/main/AtoZDirectory>) Medical Record

Information (<http://www.vanderbilthealth.com/main/guide>) Key Telephone Numbers

(<http://www.vanderbilthealth.com/main/guide>) Make an Appointment

(<http://www.vanderbilthealth.com/main/guide>)

Vanderbilt University Medical Center

1211 Medical Center Drive

Nashville, TN 37232

(<http://www.vanderbilthealth.com/main/maps>)

(615) 322-5000



(<http://www.vanderbilthealth.com>)

Vanderbilt University is committed to principles of equal opportunity and affirmative action. ©

(<http://news.vanderbilt.edu/manage/wp-admin/>) 2012 Vanderbilt University Medical Center.

Site Development: University Web Communications (<http://web.vanderbilt.edu/>)