

ABSTRACTS

Section A: Nellcor Clinical Laboratory

- A1. Effects of Motion on Three Pulse Oximeters Designed for Use in Motion During Stable Normoxia and Hypoxia**
Michael W. Jopling, M.D, Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D., R.R.T
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Journal of Clinical Monitoring and Computing 16(1): 51-52, January 2000
*(Note: subsequently published as White Paper [ref D2])
- A2. Effects of Motion on Three Pulse Oximeters Designed for Use in Motion During Induced Transient Hypoxic Episodes**
Michael W. Jopling, M.D, Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D., R.R.T
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Proceedings of the Tenth Annual Society for Technology in Anesthesia; January 2000
*(Note: subsequently published as White Paper [ref D3])
- A3. Effects of Severe Motion on Three Pulse Oximeters Designed for Use in Motion during Induced Transient Hypoxic Episodes**
Michael W. Jopling, M.D, Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D., R.R.T
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Journal of Clinical Monitoring and Computing 16(1): 52-53, January 2000
*(Note: subsequently published as White Paper [ref D4])
- A4. Sensitivity and Specificity Performance during Motion Artifact in Three Pulse Oximeters Designed for Use in Motion**
Michael W. Jopling, M.D., Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D.
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Anesthesiology 93(3A): A-585, 2000
- A5. Methodology of Generating Motion Artifact Affects Measures of Pulse Oximetry Experimental Performance**
Michael W. Jopling, M.D., Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D.
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Proceedings of the 54th Post Graduate Assembly of The new York State Society of Anesthesiologist, Inc., January 2000
*(Note: subsequently published in White Paper [ref D5])
- A6. Methodology of Generating Motion Artifact Affects Measures of Pulse Oximetry Experimental Performance**
Michael W. Jopling, M.D., Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D., R.R.T
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Proceedings of the Eleventh Society for Technology in Anesthesia; January 2001
*(Note: subsequently published in White Paper [ref D5])

- A7. Methodology of Generating Motion Artifact Affects Measures of Pulse Oximetry Experimental Performance**
Michael W. Jopling, M.D., Paul D. Mannheimer, M.S., and Donald E. Bebout, Ph.D.
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
Critical Care Medicine 28(12): A-61, 2001
*(Note: subsequently published in White Paper [ref D5])
- A8. Site Dependent Time Delays in Pulse Oximetry Monitoring**
DE Bebout, PD Mannheimer, RP Chin, and MW Jopling
Nellcor, Pleasanton CA; and St. Ann's Hospital and The Ohio State University, Columbus OH
American Journal of Respiratory and Critical Care Medicine 163: A-142, 2001
- A9. Improved Pulse Oximeter Saturation Monitoring During Simulated Low Perfusion Conditions**
Kelly Jager, RRT, Charles Porges, Paul Mannheimer MS,
Nellcor, Pleasanton CA
Respiratory Care 46(10): 1106, 2001
- A10. Site-Dependent Differences in the Time to Detect Changes in Saturation during Low Perfusion**
Donald. E. Bebout, Paul. D. Mannheimer, Chuan-Chuan C. Wun
Nellcor, Pleasanton CA
Critical Care Medicine 29(12): A115, 2001
- A11. Site Dependent Lag Times in Saturation During Low Perfusion**
D. Bebout, P. Mannheimer, and M. Jopling
Nellcor, Pleasanton CA; and St. Ann's Hospital and The Ohio State University, Columbus OH
Anesthesia and Analgesia 94(1S): S101, 2002
- A12. An Evaluation of Pulse Oximetry Performance during Motion Artifact in a Cold Room Environment in Three Oximeters Designed for Use in Motion**
M. Jopling, P. Mannheimer, D. Bebout
St. Ann's Hospital and The Ohio State University, Columbus OH and Nellcor, Pleasanton CA
Anesthesia and Analgesia 94(1S): S104, 2002
*(Note: subsequently published in Invited Paper [ref F2])
- A13. Pulse Oximetry Accuracy and Performance during Combined Motion and Low Perfusion**
Cook, C.M., C.-C. Wun, P. D. Mannheimer, and D. E. Bebout
Nellcor, Pleasanton CA
Critical Care Nursing (in press), 2002
- A14. Effects of Cold-Induced Peripheral Vasoconstriction on Pulse Amplitude at Various Pulse Oximeter Sensor Sites**
Donald E. Bebout, Ph.D and Paul D. Mannheimer, M.S
Nellcor, Pleasanton CA
Anesthesiology (submitted), 2002

Section B: Supported by Nellcor

B1. The Performance of a New Pulse Oximeter Generation to Motion and Low Perfusion Simulation During a Desaturation Procedure

Christoph Hornberger, Ph.D., Hartmut Gehring, M.D., Holger Matz, ME, Reiner Schafer, M.D., Ewald Konecny, Ph.D., Peter Schmucker, M.D.

Medical University of Lübeck, Lübeck, Germany

Respiratory Care 45(8): 993, 2000

*(Note: subsequently published in Original Manuscript #1 [ref G1])

B2. The Bias and Precision of a New Generation of Pulse Oximeter

Hartmut Gehring, M.D., Christoph Hornberger, Ph.D., Holger Matz, ME, Reiner Schafer, M.D., Ewald Konecny, Ph.D., Peter Schmucker, M.D.

Medical University of Lübeck, Lübeck, Germany

Respiratory Care 44(8): 993, 2000

*(Note: subsequently published in Original Manuscript #1 [ref G1])

B3. Artifact Resistance of Newest Generation of Pulse Oximeters in Volunteers Undergoing Hypoxemia

Hartmut Gehring, M.D., Christoph Hornberger, Ph.D., Holger Matz, ME, Ewald Konecny, Ph.D., Peter Schmucker, M.D.

Medical University of Lübeck, Lübeck, Germany

Anesthesiology 93(3A): A-584, 2000

*(Note: subsequently published in Original Manuscript #1 [ref G1])

B4. Pulse Oximetry by Forehead Sensor During Exercise in Normoxia and Hypoxia

S.R. Hopkins, P.D, Wagner, H. Bogaard, K., Niizeki, Y. Yamaya

Department of Medicine, University of California, San Diego, La Jolla CA 92093

Presented at the 2000 American Physiological Society The Integrative Biology of Exercise; September, 2000; Portland, Maine

*(Note: Subsequently published as Original Manuscript #2 [ref G2])

B5. A Comparison of a Forehead and Digit Pulse Oximetry Sensor in Mechanically Ventilated Adults

Lo T., Rogers M., Benton G., Langga L., Mauro S.

Loma Linda University Medical Center and Children's Hospital, Loma Linda California

American Journal of Respiratory and Critical Care Medicine 165(8): A178, 2002

B6. Comparison of Four Pulse Oximeters on Pediatric Patients during Anesthesia and the Initial phases of Recovery

Charles Cote.

Children's Memorial Hospital, Chicago Illinois.

Anesthesiology (submitted), 2002

B7. The Use of Routine Pulse Oximetry to Detect Otherwise Undiagnosed Congenital Heart Disease

Jonathan D. Reich, M.D., Sean Miller, Brenda Brogdon, ACNP, Jennifer Casatelli, M.D., Timothy C. Gompf, M.D., Christine Falkensammer, Kevin Sullivan, and James Huhta, M.D.
Lakeland Regional Medical Center, Lakeland FL
American Academy of Pediatrics (submitted), 2002

*(Note: subsequently published as Original Manuscript [ref G3])

Section C: Independent (not supported by Nellcor)

C1. Failure Rate of Three Different Pulse Oximeters in the Intensive Care Unit

Lutter N, Kroeber S, Urankar S, Kozma E, Schuettler J
Dept. of Anesthesiology, University of Erlangen-Nuremberg, Erlangen, Germany
Proceedings of the Eleventh Society for Technology in Anesthesia; January 2001

*(Note: subsequently published in Invited Paper [ref H2])

C2. Reliability of Third Generation Pulse Oximeters in the PACU with Respect to Motion and Low Perfusion

Lutter N, Urankar S, Kroeber S, Kozma E, Schuettler J
Dept. of Anesthesiology, University of Erlangen-Nuremberg, Erlangen, Germany
Proceedings of the Eleventh Society for Technology in Anesthesia; January 2001

*(Note: subsequently published in Invited Paper [ref H2])

C3. Accuracy of Two Pulse Oximetry Devices with Motion Artifact Reduction Technology on Very Small Birth Weight Infants in an Intensive Care Nursery

S Slogic
Dartmouth Hitchcock Medical Center, Lebanon, NH, USA
Anesthesia and Analgesia 94(1S): S108, 2002

WHITE PAPERS

Section D: Nellcor

D1. Nellcor 04 Algorithm Summary

Clark R. Baker and Thomas J. Yorkey
1999 Mallinckrodt Inc. 00870-0999

D2. Effects of Motion on Three Pulse Oximeters Designed for Use in Motion During Stable Normoxia and Hypoxia

Michael W. Jopling, MD, Paul D. Mannheimer, MS and Donald E. Bebout, Ph.D., RRT
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
2000 Mallinckrodt Inc. 00879.2-0500

D3. Effects of Motion on Three Pulse Oximeters Designed for Use in Motion During Induced Transient Hypoxic Episodes

Michael W. Jopling, MD, Paul D. Mannheimer, MS and Donald E. Bebout, Ph.D., RRT
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
2000 Mallinckrodt Inc. 00879.3-0500

D4. Effects of Severe Motion on Three Pulse Oximeters Designed for Use in Motion during Induced Transient Hypoxic Episodes

Michael W. Jopling, MD, Paul D. Mannheimer, MS and Donald E. Bebout, Ph.D., RRT
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
2000 Mallinckrodt Inc. 00879.4-0500

D5. Methodology of Generating Motion Artifact Affects Measures of Pulse Oximetry Experimental Performance

Michael W. Jopling, MD, Paul D. Mannheimer, MS, and Donald E. Bebout, Ph.D., RRT
St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor, Pleasanton CA
2001 Nellcor Puritan Bennett 00879.9-0201

D6. A Critical Review of Motion in Pulse Oximetry

Paul D. Mannheimer, MS, Donald E. Bebout, PhD, RRT
Nellcor Puritan Bennett F.f 0485-1201

Section E: Novamatrix

E1. Performance of a New Pulse Oximeter Technology During Controlled Normoxia and Hypoxia in Normal Volunteers During Voluntary Motion

Technical Staff, Novamatrix Medical Systems, Inc.
Technical Report 2000-2 Rev 01, Novamatrix Medical Systems, Inc., Wallingford CT 06492

INVITED PAPERS AND ORIGINAL MANUSCRIPTS

Section F: Nellcor Clinical Laboratory

F1. Design and Validation of Pulse Oximetry for Low Saturation

Paul D. Mannheim, MS
Nellcor Division, Tyco Healthcare, Pleasanton CA.
Anesthesia and Analgesia 94(1S): S21-S25, 2002

F2. Issues in the Laboratory Evaluation of Pulse Oximeter Performance

Michael W. Jopling, MD, Paul D. Mannheim, MS and Donald E. Bebout, PhD
Mount Carmel St. Ann's Hospital and The Ohio State University, Columbus OH; and Nellcor
Division, Tyco Healthcare, Pleasanton CA.
Anesthesia and Analgesia 94(1S): S62-S68, 2002

F3. The OxiMAX™ System – Nellcor's new platform for pulse oximetry

Paul D. Mannheim, M.S., Donald E. Bebout, Ph.D., and the Nellcor Technical Staff
Nellcor/Tyco Healthcare, Pleasanton CA
Minerva Anestesiologica (in press), 2002

Section G: Supported by Nellcor

G1. The Effects of Motion Artifact and Low Perfusion on the Performance of a New Generation of Pulse Oximeters in Volunteers Undergoing Hypoxemia

Hartmut Gehring, M.D., Christoph Hornberger, Ph.D., Holger Matz, ME, Ewald Koecny, Ph.D.,
Peter Schmucker, M.D.
Medical University of Lübeck, Lübeck, Germany
Respiratory Care 47(1): 48-60, 2002

G2. Validity of pulse oximetry during maximal exercise in normoxia, hypoxia and hyperoxia

Yamaya Yoshiki, Harm J. Bogaard, Peter D. Wagner, Kyuichi Niizeki, and Susan R. Hopkins
Department of Medicine, University of California, San Diego, La Jolla CA 92093
Journal of Applied Physiology 92: 162-168, 2002

G3. The Use of Routine Pulse Oximetry to Detect Otherwise Undiagnosed Congenital Heart Disease

Jonathan D. Reich, M.D., M.Sc., Sean Miller, Brenda Brogdon, ACNP, Jennifer Casatelli, M.D.,
Timothy C. Gompf, M.D., Christine Falkensammer, and James Huhta, M.D
Lakeland Regional Medical Center, Lakeland, FL and University of South Florida School of
Medicine, Tampa, FL.
Archives of Adolescent and Pediatric Medicine (submitted), 2002

Section H: Independent (not supported by Nellcor)

H1. A Characterization of Motion Affecting Pulse Oximetry in 350 Patients

Robert M. Tobin, B.S, Jonas A. Pologe, B.S. and Paul B. Batchelder, R.R.T.
Datex-Ohmeda, Inc., Louisville, CO
Anesthesia and Analgesia 94(1S): S54-S61, 2002

H2. False Alarm Rates of Three Third-Generation Pulse Oximeters in PACU, ICU and IABP Patients

Norbert O. Lutter, M.D., Sabine Urankar, M.D., and Steffi Kroeber, M.D.
Department of Anesthesiology, University of Erlangen-Nuremberg, D-91054 Erlangen, Germany
Anesthesia and Analgesia 94(1S): S69-S75, 2002

H3. Comparison of Two Pulse Oximeters during Sub-Maximal Exercise in Healthy Volunteers: Effects of Motion

William Kist, Rosemary Hogan, Lorilie Weber-Hardy, Tarilyn Dobey, Kathryn Moss, Mark Wernsman, Marian Minor, and Michael Prewitt
University of Missouri, Columbia, MO
Journal of Exercise Physiology_{online} 5(1): 42-48, 2002