

CURRICULUM VITAE

Vinny (Vinod) K. Bhutani, MD, FAAP

Professor Emeritus, Stanford University, School of Medicine

Department of Pediatrics. Division of Neonatal and Developmental Medicine

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*email: bhutani@stanford.edu**(abbreviated version)***PERSONAL STATEMENT**

Graduate of Armed Forces Medical College and trained in the postgraduate disciplines of neonatology, pulmonary physiology, bilirubin biology, neonatal nutrition, affordable neonatal device design and global maternal-child health policy, my translational areas of study encompass five investigative domains. These are: (i) prevention of bilirubin-related newborn brain damage; (ii) elucidating neonatal pulmonary function testing and pulmonary graphics, iii) translation by systems application to operationalize novel healthcare practices including global prevention of kernicterus; (iv) elucidation of biomarkers and technologies for targeted interventions to optimize neonatal health and improved outcomes; and, (v) design strategies for global reduction of infant mortality and morbidities to advocate for durable paradigm shifts in clinical practice and equitable health policy. My academic role at Stanford as an experienced maternal-child-health expert of bench, translational, global health and clinical scholarship has privileged me to mentor scholars world-wide. Now, my curiosity and skills allow me to navigate and implement surveillance of global neonatal well-being outcomes and inform my ongoing research, counsel, and advocacy.

ACADEMIC APPOINTMENTS AT STANFORD UNIVERSITY

2020 to date	Professor Emeritus, Pediatrics (Neonatology [Active]), Department. of Pediatrics, Lucile Packard Children's Hospital, School of Medicine, Stanford University, Stanford
2009 to date	Member, Maternal Child Health Research Institute, Stanford University.
2006-2020	Professor of Pediatrics (Neonatology) Department of Pediatrics, Lucile Packard Children's Hospital, School of Medicine, Stanford University, Stanford.
2005-2006	Clinical Professor of Pediatrics (Neonatology) Department of Pediatrics, Lucile Packard Children's Hospital, School of Medicine, Stanford University, Stanford.

PRIOR ACADEMIC APPOINTMENTS IN PHILADELPHIA, PA.

1979-1984	Research Assistant Professor of Physiology	Temple University
1982-1987	Assistant Professor of Pediatrics; by courtesy, Department of Obstetrics and Gynecology	University of Pennsylvania
1988-2001	Associate Professor of Pediatrics; by courtesy, Department of Obstetrics and Gynecology	University of Pennsylvania
1999-2005	Adjunct Professor: School of Nursing	University of Pennsylvania
2002-2005	Clinical Professor, Pediatrics and Neonatology	University of Pennsylvania
2002-2005	Professor, Department of Pediatrics	Thomas Jefferson University

PRIOR HOSPITAL APPOINTMENTS

Nation's First Hospital: Physician to the Pennsylvania Hospital (1982 to 2004)

Children's Hospital of Philadelphia: Assistant/Assoc. Physician; Senior Physician, (1982 to 2005).

EDUCATION

1967-71	Armed Forces Medical College, University of Poona, India
1977	Pediatrics Certification, American Board of Pediatrics, USA
1980	Neonatal-Perinatal Medicine Certification, American Board of Pediatrics, USA
1981	Post-Doctorate in Physiology, Temple University Philadelphia, PA

POSTGRADUATE TRAINING

- 1974-75 MD candidate. Delhi University. Thesis submitted. Advisor. *Shanti Ghosh, MD*.
1976-77 Chief Resident, Pediatrics, Albert Einstein Med. Ctr, Temple Univ. PA
1977-79 Fellow, Neonatal-Perinatal Medicine, St Christopher's, Temple Univ.
1978-80 Sabbatical: Post-Doctorate in Pulmonary Physiology, Temple University. Physiology
Advisor: Thomas H Shaffer, PhD
2003-05 Sabbatical: Kernicterus Research and Prevention; University of Pennsylvania
(AAMC /CDC Award). *Bilirubin Advisor. Lois Hamerman-Johnson, MD*.
2017-17 Sabbatical: NeoDesign, the first novel translational discipline of biology and technology.
2020-21 Sabbatical: Global Neonatal Health. Disability, Morbidity Mortality & Economic Burdens.

LICENSURE

- 1974 ECFMG: 209-163-5, Jan 23, 1974
1976 FLEX: 365503, August 6, 1976
1976 UPIN: B33579
1975 Commonwealth of Pennsylvania MD036583L (inactive)
1979 New Jersey (inactive)
2005 California MD C52042 (active August 1, 2005, C-52042)

BOARD CERTIFICATION

- 1977 Certified, American Board of Pediatrics; #22355
1981 Certified, Sub-Board of Neonatal Medicine, American Board, #39199
2009 MOC, Sub-Board of Neonatal Medicine, American Board, #0857

GLOBAL TOOL-KITS AND TECHNOLOGIES FOR HEALTHY NEONATAL CARE

- Neonatal resuscitation tool-kits for frontline clinicians at newborn birthing
- Infrastructure platforms for affordable neonatal care in resource-limited communities
- Breastfeeding: maternal empowerment and supportive technologies (adaptation of paladai cup)
- Kangaroo mother care tool-kit for standard of practice.
- Neonatal pulmonary graphics, CPAP and physiologic ventilation support
- Neonatal thermal control, conductive thermal mattress and "Embrace" device.
- Asepsis, handwashing, hygiene and behavior modification for safe healthcare environment
- Bilirubin screening, hour-specific percentile bilirubin nomogram, BiliTool at birthing
- Transcutaneous bilirubin testing, icterometer validation
- Affordable phototherapy, filtered heliotherapy, LED phototherapy, Brilliance device
- Blood bilirubin testing, bilirubin binding assay, unbound bilirubin assay and bilirubin-albumin ratio.
- Neonatal hemolysis, end-tidal carbon monoxide testing to identify hemolysis
- Preterm hyperbilirubinemia tool kit and online clinical decision tool-kit to initiate phototherapy
- Point-of-care G6PD enzyme assay and testing.
- Crash-cart tool-kit for emergency care of Acute Bilirubin Encephalopathy
- Devices to assess and discriminate sensori-neural hearing loss in newborns.
- Video-documentaries of living with kernicterus when prevention fails.

HONORS AND AWARDS (partial list)

- 1968-1992not listed.
1992-2004 "Top Doc for Kids" Philadelphia Magazine, annually until 2004.
1999 Health and Society: PENN in PUNE. Universities of Pennsylvania and Pune Initiative
2002 Visiting Professor, Pediatrics, Post Graduate Institute of Medical Education and Research
2003 Quality Service Award, University of Pennsylvania Health System
2003 Woodward Colby Memorial Lecture, Children Hospital of Minneapolis
2003 Chair, District III, Section of Neonatal-Perinatal Medicine, AAP.
2003 Elected Executive Committee, Section of Neonatal-Perinatal Medicine, AAP.
2005 "Physician of the Year" Award, Philadelphia Breastfeeding Group.
2006 Awarded the "Fellow of the National Neonatology Forum of India"
2006 Stanford-India Health and Society Initiative, Stanford

2006	Chair, District IX Committee of Fetus and Newborn, AAP.
2007	Presidential Fund for Innovation in International Studies Award (Stanford)
2007	Elected to the Board of California Association of Neonatologists
2007	Armed Forces Medical College, Appreciation Award for Indo-US Newborn Care
2009	Visiting International Professor, Dept. of Pediatrics, All India Institute of Medical Sciences
2010	Stanford India Biodesign Clinical Immersion Award, Stanford Biodesign, Stanford Univ.
2011	Curran Lecture, Department of Pediatrics, University of South Florida
2012	Lifetime Achievement Award, Neonatology Forum of India
2014	Landmark Award. Section on Perinatal Pediatrics, American Academy of Pediatrics
2014	Keynote Speaker at the 50 th Year Celebration of Pediatrics at AFMC, Pune, India
2016	Legend of Neonatology, NeoForum, Pediatrix, USA
2017	Usher Lecture, Department of Pediatrics, McGill University, Quebec, Canada
2018	All India Institute of Medical Sciences (AIIMS/PRESIDE). India NeoDesigns
2019	Life-time Achievement Award, Indian Academy of Pediatrics (Neo). India
2023	Audrey K. Brown Award, Pediatric Academic Societies, USA.

CONSULTANT to Governmental Organizations and Academic Institutions [pro-bono]

- Department. of Biotechnology, Government of India, New Delhi, India. Technical Adviser (pro bono)
- Post Graduate Institute of Medical Education, Chandigarh (Newborn Jaundice)
- All India Institute of Medical Sciences, New Delhi, India
- Ministry of Health, Government of Egypt. Prevention of Kernicterus
- Ministry of Health, Maternal Child Health, (Abuja, Lagos) Nigeria: CURhE Initiative
- Ministry of Health, Maternal Child Health, Baghdad, Iraq: CURhE Initiative
- St. John's Hospital, Bangalore, Karnataka, India (CURhE, Initiative)
- Institute of Perinatology, Mexico City, Mexico (CURhE, Initiative)
- Stellenbosch Hospital, Cape Town, South Africa (Newborn Jaundice)
- Ministry of Health, Rwanda. Evaluation of Technology Transfer (LED Phototherapy).
- Manipal University, Manipal, Kerela, India (India NeoDesigns)
- St. John's University, Bengaluru, Karnataka, India. (India NeoDesigns)

PROFESSIONAL SOCIETIES

National Societies

American Pediatric Society

- Co-Chair, Audrey K. Brown Kernicterus Symposium
- Chair, Bilirubin Club AAP, PAS
- Advisor. g6pd Deficiency Foundation, USA
- Member, Subcommittee on Hyperbilirubinemia, AAP (2001-2022)
- Liaison to the Committee of Fetus and Newborn (2005-2012)
- Newborn Screening Medical Home Group (2006-08)
- Safe and Healthy Beginnings Project (2004-2009)
- Research Subcommittee Member to Perinatal Section (2001-2008)
- Executive Committee Member: Section on Perinatal Pediatrics (2000-2014)
- District III Representative for Perinatal Pediatrics (2000-05)
- Member, Sub-Committee on Hyperbilirubinemia (2000-22)
- Program Chair, SOPPe Annual NCE Meeting (2002)

Local and Regional Medical Societies

- District IX (California) American Academy of Pediatrics
 - Committee of Fetus and Newborn (Chair, 2007-2012)
- California Association of Neonatologists
 - Board Member (2008-2013)
- Western Society for Pediatric Research (Member: 2005---)
- Philadelphia Neonatal-Perinatal Society
 - (Secretary: 1985---87)

- (President: 1990---92)
- (Program Director, 1999---04)
- American Lung Association of Philadelphia (inactive)
 - (Member, Pediatric Pulmonary Committee: 1981---82)
- American Red Cross – Penn---Jersey Program
 - (Member: Medical Advisory Board 1990---01)
- Thomas Bond Society of Pennsylvania Hospital

Community Based Programs:

- City of Philadelphia Department of Public Health: Healthy Start Initiative
 - (1990-97)
 - (Chairperson, Clinical Services Group 1992)
- Maternity Care Coalition of Greater Philadelphia (Momobile):
 - (Board Member: 1992-00)
 - (Vice-President: 1997-98), (President of the Board, 1998-00)
- Association of Indians in America (Philadelphia Chapter)
 - (President, 1994-01)
- Asian American Health Care Task Force, City Dept. of Public Health.
 - (Member: 1992-96)
 - (Treasurer: 1996)
- Asian Pacific American Advisory Committee (Health Care); Dept of Public Health; Philadelphia
 - (Member: 1996-02)
- St. Peter's School, Philadelphia
 - (Board Member: 1999-04; Vice-President: 2000-04)
- St. Christopher's Hospital Foundation for Children
 - (Board Member: 2000-02)
- Parents of Infants and Children with Kernicterus (PICK)
 - (Chair, Medical Advisory Board: 2001-03)

COMMITTEES AND OTHER ACTIVITIES

Academic Committees at Children's Hospital of Philadelphia and University of Pennsylvania

1986-94	Perinatal Fellowship Recruitment Committee, PA Hospital
1988-94	Neonatal Fellowship Recruitment Board, CHOP
1991-94	Neonatology Research Committee, CHOP
1991-94	Fellowship Committee, Division of Neonatology, CHOP
1991-94	Fellowship Education Committee, Division of Neonatology, CHOP
1992-94	Member, Admission Interview Panel for Medical Students at PENN
1997-04	Member, Penn International Health Group for India
1999-04	Chair, PENN India Health Group, University of Pennsylvania
1999-02	Executive Committee of IRB at the University of Pennsylvania
1999-04	Provost's Committee on International Health, University of Pennsylvania

Academic Committees and other activities at Lucile Packard Children's Hospital and Stanford University

2005-	Grand Rounds, LPCH, Stanford University
2006-	Fulbright Scholar Interview Panel, Stanford University
2006-	Preceptor, ME294, Bioengineering Medical Device Coaching, Stanford University
2006--	Undergraduate Advising, Stanford University
2006-	Annual LPCH CME Program. Guest Lecturer, Stanford University
2007	MCPOP, Outreach Education, Guest Lecturer, Carmel, CA 2007
2008-	Global Health Initiative, Stanford University School of Medicine
2008-	Neonatal Health and Society Mentoring for Undergraduates, Postgraduates and Faculty
2009-	Academic Partnership Development, Dept of Pediatrics, All India Institute of Medical Sciences
2009-	LPCH Outreach Education CME Lecturer Program
2009-	MCPOP, Outreach Education, Guest Lecturer, Carmel, CA
2010-	Stanford India Biodesign Clinical Immersion Program in Pediatrics.

2011- Medical Student Selection Committee, Stanford University School of Medicine
2014- Pediatric Intern Selection Committee, Stanford University School of Medicine.

Other Teaching Activities

1981-03 Neonatal Resuscitation and Workshop on Intubation Techniques
1987-03 Postgraduate Neonatology Seminars for Developing Countries through Department of Neonatology, University of Illinois, Chicago, Illinois
1989-03 Perinatal-Neonatal Update: Section on Perinatology, Dept. of Obs/Gyn, PA Hospital
1990-03 Neonatal Resuscitation Program Coordinator at Pennsylvania Hospital.
1991-99 Rural Neonatal Care: Indo---US Faculty Exchange Program.
1993-05 NeoPrep Course Instructor, American Academy of Pediatrics.
1993-01 National Medical Education: Specialty Review Course: Lecturer, Chicago, IL 1993-05 (designated as Compass from 1997 onwards)
1988 to date: Grand Rounds and Invited Lectures at National and Professional Organizations

Reviewer for NIH Study Sections/Projects/FDA/HRSA/CDC

2001 Neonatal Network Project Reviews, NICHD
2002 Global Health Programs Reviewer, NIH
2002 National Trial Oversight Committee: Twin to Twin Transfusion Study
2003 Bilirubin Induced Brain Injury Project: Panelist, NICHD
2004 Invited Expert to FDA: Research use of Tin Mesoporphyrin to Prevent Severe Jaundice.
2004 Societal Education Programs to Prevent Kernicterus, CDC
2005 Late-Preterm Program: Panelist, NICHD
2007 Neonatal Pharmacology Project Reviewer, NIH
2007 Stanford-India Neonatal Health Program: Chief, NICHD
2008 Invited Expert: NIH---Egypt Consortium to Prevent Kernicterus in Egypt, NIH
2009 Chair, Stakeholders' Meeting to Review Feasibility of National G6PD Screening: HRSA
2010 Invited Expert for Universal Bilirubin Screening, Secretary's Advisory Committee on Heritable Disorders in Newborns and Children.

RESEARCH ACTIVITIES

Bilirubin Binding Capacity To Assess Bilirubin Load in Preterm Infants,
NIH R21 (PI: Bhutani)
02/2014 to 01/2016

This study will test the role Bilirubin Binding Capacity (BBC) as a biomarker of insufficient bilirubin binding and increased bilirubin load in vulnerable and moderately preterm human infants; and that BBC alone or in combination with phenotypic biomarkers of bilirubin production are associated with objective clinical correlates of early onset BIND by term-equivalent age. From a clinical perspective, vulnerable infants [<32 wks GA; BW <1500 g] with bilirubin loads $>45\%$ saturation of BBC, are likely to develop short-term signs of BIND as compared with GA-matched infants at lowest risk (bilirubin loads $\sim 25\%$ saturation).

Effects of Hyperbilirubinemia on Visuocortical Functioning in High-Risk Infants

NIH R01, (Good); Site PI: Bhutani (co-PI).

07/15 to 06/1/2023. This study will use the sweep visual evoked potential to measure 3 types of vision in these infants at 3, 6, and 12 months of age. Vernier acuity refers to the ability to see fine offsets of lines. Since the offsets are smaller than the resolution afforded by spacing of cone cells in the retina, the perception of these offsets requires considerable cortical input. Contrast sensitivity and grating acuity are also important aspects of vision. All 3 are subserved by different cortical mechanisms. We will measure acuity thresholds, conduction time, suprathreshold changes, and other components of vision processing and compare these to bilirubin values measured in the hospital and in the Stanford bilirubin lab.

[Point of Care Assay for Bilirubin Binding Capacity in Neonates](#)

ABSA001 (Bhutani)

07/01/2012–06/30/2014

Aviv Biomedical Inc.

Role: Co-Investigator

The aim of this study is to verify the accuracy of a new upgraded hematofluorometer for measuring bilirubin-binding capacity in whole blood taken from healthy term as well as jaundiced preterm neonates.

LAB-ON-A-CHIP for Neonatal Hyperbilirubinemia Screening
NIH [SBIR: Phase II] (Srinivasan) 05/01/2011–11/30/2014

Advanced Liquid Logics

Role: Site PI

The overall objective of this Phase II project is to demonstrate the feasibility of an integrated rapid turnaround “lab-on-a-chip” for multiplexed screening of neonates at risk for hyperbilirubinemia and its most common underlying pathological causes, glucose-6-phosphate dehydrogenase deficiency, and congenital hypothyroidism.

Transcutaneous Bilirubinometry in Neonates with the Bilicare System

(Bhutani) 07/01/2014–06/30/2015

Gerium, Inc \$70,000 Role: PI

The purpose of this study is to test the performance of a new transcutaneous (“measured through skin”) bilirubin device (BiliCare™) to measure bilirubin levels. We plan to evaluate the clinical performance of this device as a point of care test. If we can validate the BiliCare™ with bilirubin from your baby’s blood we could verify a non-invasive alternative for measuring bilirubin.

Identification of Neonatal Hemolysis

(Bhutani) 07/01/2014–06/30/2015

LCPCF Foundation.

Role: PI

The aims of this project are to define normative data (mean, median, range, inter-quartile ranges) among healthy infants (including those who are at-risk for neonatal hemolysis soon after birth to first 4 days of post-natal age after birth (6 to 72–96h of age). Secondary aim is to delineate the prospective natural history of end-tidal carbon Monoxide (ETCOc) levels and stratify those most or least likely at risk for developing hemolysis.

Initiative to Identify and Intervene for Neuro-developmental Disorders (NDD) in South Asia (The INDISA Study)

110946 (Bhutani) 12/01/2013–11/30/2018

INCLIN, Inc

Role: co-PI

The major goal of this project is to develop a model of neurodevelopmental risk assessment, NDD screening, NDD diagnosis and intervention strategy for children 2-9 years old, stratified by their specific age by year, within the prevalent primary health system.

Scaling Brilliance: Affordable Phototherapy for Newborns in Low-Resource Geographies

107327 01/01/2013–12/31/2016 0.12

D-Rev: Design Revolution (Bhutani)

Role: Consultant

The major goal of this project is to pull together key and diverse global players in neonatal health to address ecosystem barriers to neonatal care, and leverages feedback from users and decision-makers to rapidly iterate promising products and approaches.

Stanford-International Health and Society Initiative (Bhutani).
September, 2006.

A Plan for an Initial Program initiative in the Indian Subcontinent.

This is a planning project to develop a “Maternal Child Health and Society” Scholar mentorship program to provide diverse multi-disciplinary mentorship for undergraduate, graduate and junior faculty scholarly research. The plan is to build partnership programs with academic partners in India using biomedical and educational strategies through mentorship, collaboration and advocacy. To convene bilateral workshops of prospective interdisciplinary partners to promote research, scholarship and advocacy for beneficial maternal-child-health outcomes on the Indian subcontinent.

RECENTLY COMPLETED

1 R21 EY019996-01 [NEI].

William Good {PI} / Consultant: Bhutani

Neonatal Jaundice and Vision Loss

This study investigates long lasting neurological effects consequent to moderate and severe hyperbilirubinemia in the newborn period. Preliminary data that “moderate” levels of bilirubin result in measurable alterations of the normal course of visual development will be confirmed in a “powered” sample and determine whether this visual “dysfunction” resolves by 12 months of age. The equipoise is whether temporary and persistent associations between severity of neonatal jaundice and vision [using the sweep visual evoked potential (sVEP), to measure visual acuity thresholds and signal amplitudes for 3 types of vision: contrast sensitivity, vernier acuity, and grating acuity].

NICHD [SBIR Phase I]. Aviv Biomedical, Inc.; Lakewood, NJ, USA: 2010-2011

Angelo Lamola (PI) Consultant: Bhutani

Point-of-Care Assays of Bilirubin, Bilirubin Binding Capacity and Unbound Bilirubin Using Whole Blood.

To develop a hematofluorometer devoted to assaying bilirubin and bilirubin binding capacity using 50 microliters of whole blood. The goal is an inexpensive, easy-to-use (no special specimen manipulation), point-of care system based on the prior work reported by ATT's Bell Lab and the experience of Aviv Biomedical, Inc.

R21HD060901-01 (NICHD)

Wennberg (PI). Bhutani: co-PI. 04/01/09-03/31/11 (completed)

Risk Factors for Encephalopathy in Newborns with Severe Hyperbilirubinemia (FRESH: Factors of Risk for Encephalopathy with Severe Hyperbilirubinemia)

The purpose of this study is to define readily measurable laboratory and clinical risk factors that identify newborns at risk for bilirubin-induced brain injury and thus improve the selection of patients needing treatment with phototherapy or exchange transfusion. This application was developed in collaboration with Egyptian partners because of a high prevalence of hyperbilirubinemia and kernicterus in Cairo, providing a unique opportunity to systematically evaluate risk factors for bilirubin encephalopathy.

R-21. NIH, Autism Speaks, Government of India [Ministry of Social Justice]: 2008-2011 (completed)

Arora NK (PI) /Technical Advisor: Bhutani

Neuro-developmental Disabilities (NDD) among children in India: An INCLIN Study

This is a study initiated INCLIN, an international network of healthcare professionals who apply multidisciplinary approaches to identify best practices to improve "health for all" in local, national, regional and global settings. The primary objective of this research project is to assess the screening and diagnostic prevalence of neuro-developmental disorders among children aged 2-9 years in India and to gather information on potentially modifiable risk factors. Data on the prevalence and spectrum of neuro-developmental disabilities in the community and potentially modifiable risk factors will be useful for advocacy purposes and help policy makers allocate adequate resources for prevention, treatment and rehabilitation for the neuro-developmentally disabled. [Bhutani serves as a Member of the Technical Advisor Group that include faculty from University of Pennsylvania and University of Wisconsin].

Other Completed Research Support

Contract No. 128888/126675 (NNSGRC) Bhutani (PI) 05/01/09-05/31/10

A Stake Holders Conference: Determine the Feasibility of G6PD Deficiency Identification for Prevention of Severe Neonatal Hyperbilirubinemia

The purpose of this grant was to identify stakeholders and convene a meeting to define the feasibility a pilot multi-state study to determine the utility of universal Glucose-6-phosphate dehydrogenase (G6PD) screening to prevent severe neonatal hyperbilirubinemia in at risk infants. The outcome of the meeting was "A White-Paper Report from a Stakeholders Meeting to Determine the Feasibility of G6PD Deficiency Identification for

Prevention of Severe Neonatal Hyperbilirubinemia".

HRSA/MCHB U21MC04403; NIH MO1RR-00070, MO1RR0018.

Bhutani (PI) 06/01/04-06/30/09

Safe Outcome for Neonatal Hyperbilirubinemia: ICTERUS Study

The purpose is to prospectively test two methods to assess the risk of severe neonatal hyperbilirubinemia in a largely racially diverse US population: the use of a single prediction rule based on either a pre-discharge bilirubin measurement expressed as a risk zone based on clinical factors alone; and the use of a combined prediction rule of clinical risk factors and hour-specific bilirubin values.

MM-0048 (AAMC/CDC).

Bhutani (PI) 10/01/02-09/30/08

Kernicterus Research and Prevention

The purpose is to analyze data from the existing Pilot kernicterus Registry, conduct a root cause analysis, and develop partnerships for both clinician and community education so as to initiate a national prevention program with the assistance of an oversight group and Kernicterus Prevention Taskforce.

Kernicterus Fund (Pennsylvania Center for Kernicterus) Johnson (PI) 01/01/00-12/31/10.

This study investigates long lasting neurological effects consequent to moderate and severe hyperbilirubinemia in the newborn period.

Embrace Warmer for Neonatal Clinical Applications:

To deliver an optimal thermal environment for low-birth-weight infants at risk for hypothermia use of phase change materials [PCM] technology for its use in a portable and reusable infant warmer that is not dependent on a continuous external supply of energy.

D-REV:

Global Barriers to Effective Phototherapy:

This study explores the inability of current phototherapy devices to meet the current international evidence base standards. In the absence of access to affordable technologies to bridge these implementation gaps, certain minimum criteria for device performance need to be established for safe and practical use of phototherapy to prevent severe hyperbilirubinemia.

Contract No. 128888/126675 (NNSGRC) Bhutani (PI) 01/09-- 01/10

A Stake Holders Conference: Determine the Feasibility of G6PD Deficiency Identification for Prevention of Severe Neonatal Hyperbilirubinemia

The purpose of this grant was to identify stakeholders and convene a meeting to define the feasibility a pilot multi-state study to determine the utility of universal Glucose-6-phosphate dehydrogenase (G6PD) screening to prevent severe neonatal hyperbilirubinemia in at risk infants. The outcome of the meeting was "A White-Paper Report from a Stakeholders Meeting to Determine the Feasibility of G6PD Deficiency Identification for Prevention of Severe Neonatal Hyperbilirubinemia".

Sandy Eglin Fund and Pennsylvania Center for Kernicterus

Johnson L(PI); Bhutani (co-PI)

Bilirubin Induced Neurologic Dysfunction

This project compiles and analyzes cases of kernicterus voluntarily reported through colleagues, parents and consultations. Clinical manifestations of kernicterus and documentation of post-icteric sequelae are recorded for follow-up of infants through adolescence.

K-23 Award (NIH)

Keren (PI); Bhutani (Mentor): 10/01/2002–09/30/2006

Prediction Models for Neonatal Hyperbilirubinemia

This young investigator award to Dr. Ronald Keren is to identify predictions models for subsequent severe hyperbilirubinemia and investigate the cost-benefit, cost-effectiveness and practicality for health care services for the safe management of newborn jaundice.

K-23 Award (NIH). Amin (PI); Bhutani (Mentor): 10/01/2002–09/30/2006

Predictors For Bilirubin-Induced Auditory Neuropathy

This young investigator award to Dr. Sanjiv B. Amin is to identify predictors and risk factors for bilirubin-induced auditory neuropathy. Such studies will identify the need for potentially effective interventions and the need to focus on patients at highest risks for bilirubin-induced auditory toxicity.

PUBLICATIONS

(Partial list of 210 original articles in peer reviewed journals from a pool of 254 scholarly manuscripts; also excludes over 400+ abstracts)

1. a. Bhutani VK, Vidavalur R, Wong RJ. Advances to diminish global newborn kernicterus mortality. *J Perinatol*. 2023 Dec 27 PMID: 37734928 .
b. Christensen RD, Bahr TM, Wong RJ, Vreman HJ, Bhutani VK, Stevenson DK. A "Gold Standard" Test for Diagnosing and Quantifying Hemolysis in Neonates and Infants. *J Perinatol*. 2023 Jul 19. doi: 10.1038/s41372-023-01730-4. PMID: 37468612
c. Vidavalur R, Bhutani VK. Trends in infant mortality due to haemolytic disease and other perinatal jaundice in the USA, 1999-2020. *Arch Dis Child Fetal Neonatal Ed*. 2023 PMID: 38151598
2. Okwundu CI, Olowoyeye A, Uthman OA, Smith J, Wiysonge CS, Bhutani VK, Fiander M, Gautham KS. Transcutaneous bilirubinometry versus total serum bilirubin measurement for newborns. *Cochrane Database Syst Rev*. 2023 May 9;5(5):CD012660. doi: 10.1002/14651858.CD012660.pub2. PMID: 37158489
3. Vidavalur R, Bhutani VK. Georacial Epidemiological Estimates of Glucose-6-Phosphate Dehydrogenase Deficiency among Newborns in the United States. *Am J Perinatol*. 2023 May 31. doi: 10.1055/a-2082-4859. PMID: 37105226
4. Chemoprevention of bilirubin encephalopathy with a nanoceutical agent. Adhikari A, Bhutani VK, Mondal S, Das M, Darbar S, Ghosh R, Polley N, Das AK, Bhattacharya SS, Pal D, Mallick AK, Pal SK. *Pediatr Res*. 2023 Mar;93(4):827-837. doi: 10.1038/s41390-022-02179-5. Epub 2022 Jul 6. PMID: 35794251
5. Kemper AR, Newman TB, Slaughter JL, Maisels MJ, Watchko JF, Downs SM, Grout RW, Bundy DG, Stark AR, Bogen DL, Holmes AV, Feldman-Winter LB, Bhutani VK, Brown SR, Maradiaga Panayotti GM, Okechukwu K, Rappo PD, Russell TL. Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 or More Weeks of Gestation. *Pediatrics*. 2022;150(3):e2022058859. PMID: 35927462
6. Jegathesan T, Ray JG, Bhutani VK, Keown-Stoneman CDG, Campbell DM, Shah V, Berger H, Hayeems RZ, Sgro M; Hour-Specific Total Serum Bilirubin Percentiles for Infants Born at 29-35 Weeks' Gestation. *Neonatology*. 2021;118(6):710-719. doi: 10.1159/000519496. Epub 2021 Oct 28. PMID: 34710869
7. Bahr TM, Henry E, Christensen RD, Minton SD, Bhutani VK. Reply *J Pediatr*. 2021 Oct;237:317-318. doi: 10.1016/j.jpeds.2021.07.011. Epub 2021 Jul 12. PMID: 34265341
8. Bahr TM, Henry E, Christensen RD, Minton SD, Bhutani VK. A New Hour-Specific Serum Bilirubin Nomogram for Neonates ≥ 35 Weeks of Gestation. *J Pediatr*. 2021 Sep;236:28-33.e1. doi: 10.1016/j.jpeds.2021.05.039. PMID: 34023346
9. Vidavalur R, Bhutani VK. Economic evaluation of point of care universal newborn screening for glucose-6-Phosphate dehydrogenase deficiency in United States. *J Matern Fetal Neonatal Med*. 2022 Dec;35(25):5745-5753. doi: 10.1080/14767058.2021.1892067. Epub 2021 Feb 24. PMID: 33627013
10. Bhutani VK, Wong RJ. A global approach to prevent kernicterus: A dedication to Lois Johnson-Hammerman (Sep. 14, 1927 to Aug. 11, 2019). *Semin Perinatol*. 2021 Feb;45(1):151350. doi: 10.1016/j.semperi.2020.151350. Epub 2020 Dec 1. PMID: 33339605.
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3. Textbook of Fetal Medicine: Editor: G Reed. Section Editor, VK Bhutani. Publisher: P. Altman, London 4, UK 1999.

MENTORSHIP

- Neonatology Fellow (project mentor/co---investigator): USA (1981 to 2010)
- Global Neonatal Health (1993 to 2010)
- Nursing: (1994 to 2010)
- Physiology: (1980 to 1990)
- Global Health: (1998 to 2010) (for undergraduates and graduates)
- Stanford MedScholar Program
- Stanford-India Biodesign: (2010-2012)