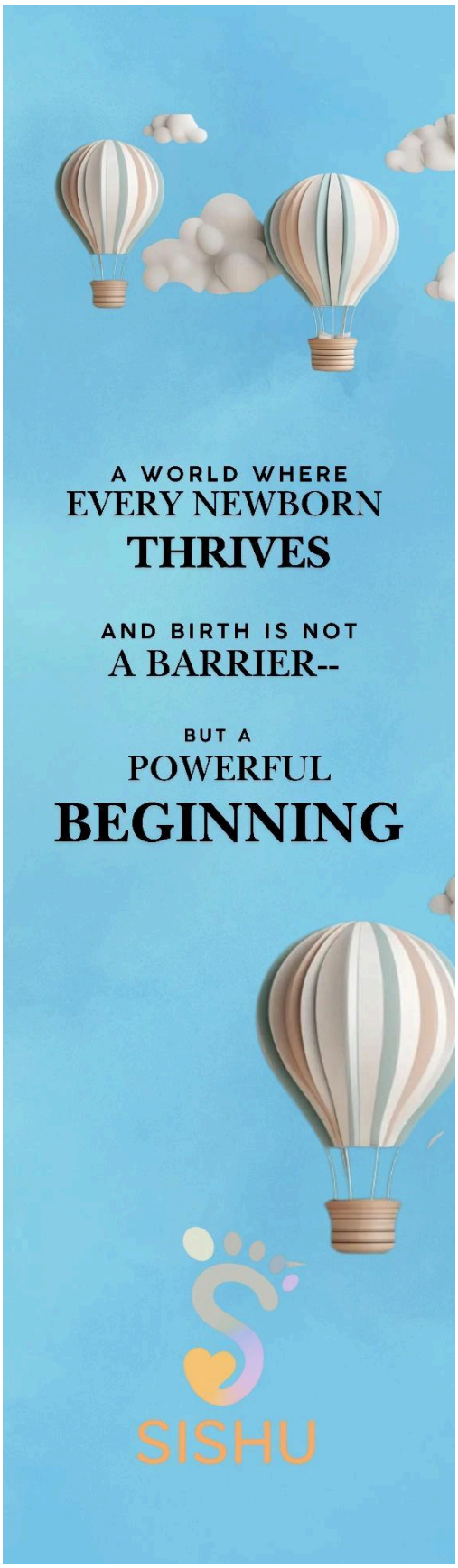


Spotlight on SISHU: Standardizing Infant Screening and Health for the Underserved

By: Supriya Bavisetty, MD

SISHU is a pioneering newborn screening initiative developed through a collaboration between the Swami Vivekananda Youth Movement (SVYM) in India and UCLA Global Health. At the forefront of this effort is Dr. Kumar Suryanarayana, a visionary pediatrician who has dedicated 14 years to serving a population of approximately 300,000 rural indigenous tribals in rural Karnataka. Guided by the vision that “every newborn thrives, and birth is not a barrier but a powerful beginning,” his work has focused on bridging gaps in equitable newborn care for vulnerable communities.

Dr. Suryanarayana introduced a transcutaneous bilirubin screening program in 2012, followed by selected newborn genetic screening using cord blood for congenital hypothyroidism and hemoglobin electrophoresis to address the high prevalence of sickle cell disease among tribal populations. Alongside audiologist Dr. Deepashree Ramachandra, he established a newborn hearing screening center in collaboration with the All-India Institute for Speech and Hearing (AIISH), Mysuru, offering hearing screening to nearly 3,500 rural-tribal newborns annually and ensuring seamless referral pathways for follow-up care. Building on this foundation, Dr. Supriya Bavisetty, Associate Professor at UCLA and Director of Newborn Services at Olive View-UCLA Medical Center, and Dr. Kalpashri Kesavan, Associate Professor of Pediatrics in the Division of Neonatology at UCLA, partnered with Dr. Suryanarayana to formally launch SISHU: Standardizing Infant Screening and Health for the Underserved. Together, they created a

collaborative model that integrates global expertise with local innovation.

The mission of SISHU is to advance equitable newborn screening and care in underserved regions of India by establishing a standardized, evidence-based model for neonatal screening and management. The program emphasizes universal screening for critical congenital heart disease (CCHD), select genetic conditions, hearing impairment, and hyperbilirubinemia, while also supporting timely diagnosis and management of hypoglycemia, sepsis, and early detection of cerebral palsy (CP). By contextualizing evidence-based workflows and empowering rural healthcare teams, SISHU reduces unnecessary patient transfers and improves outcomes directly at the point of care. Piloted at Vivekananda Memorial Hospital (VMH), the initiative has already demonstrated feasibility and measurable impact.

A major milestone was the newborn screening workshop conducted on January 16, 2026, in Saraguru, India, which brought together physicians and healthcare workers from rural and tribal hospitals covering a delivery rate of 4,000 newborns per year. The workshop focused on universal and targeted screening, provided equipment and hands-on training, and fostered a supportive network between local hospitals. This event exemplified SISHU's commitment to capacity building and collaboration.

SISHU has also forged global academic and technical partnerships with organizations that have validated low-cost screening tools suitable for rural settings. These include a smartphone-based otoacoustic emissions (OAE) device developed by the University of Washington and Carnegie Mellon University, enabling affordable hearing screening, and Picterus Newborn Health in Norway, which has advanced smartphone-based transcutaneous bilirubin monitoring using an AI-driven system with a color calibration card. Together, these innovations reduce equipment costs dramatically while ensuring accessibility and sustainability. With NGO partnerships, SISHU is poised to expand across rural India and serve as a replicable global model. The initiative was presented at the World Health Innovation Forum in India in December 2025.

A hallmark of SISHU is its commitment to mentoring early-career investigators. Drs. Bavisetty and Kesavan are guiding trainees across UCLA, CHLA, and VMH in global health projects. Notable achievements include the introduction of universal CCHD screening led by Dr. Aneesha Pydi, which raised screening rates from 0% to 99% in just four months, and the implementation of a standardized neuroprotection protocol for neonates at risk of hypoxic-ischemic encephalopathy (HIE), led by Dr. Jyodi Mohole. VMH now supports approximately 150 children with CP, most diagnosed after age two, and with new training of VMH's early career investigator Dr. Sushma Vydyanath in general movements assessment (GMA) and early therapy, SISHU is shifting diagnosis and intervention earlier, improving long-term outcomes.

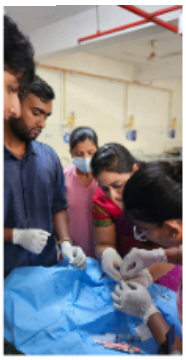
Together, the SISHU initiative demonstrates a collaborative model that integrates global expertise with local innovation. By combining standardized protocols, innovative low-cost technologies, and structured training, SISHU directly addresses inequities in newborn health. Adaptable and scalable across diverse rural settings, it has the potential to transform neonatal care delivery, reduce preventable deaths, and establish a sustainable framework for newborn screening globally.

SISHU

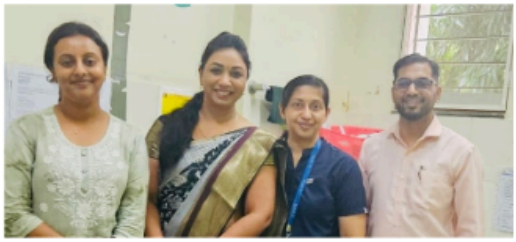
Standardizing Infant Screening and Health for the Underserved

A Collaborative Initiative between Swami Vivekananda Youth Movement and UCLA Global Health

Dr. Supriya, Dr. Deepa (Audiology), Dr. Shri and Dr. Kumar (Pediatrics, VMH)



Training sessions: PPV via self inflating bag; Intubation training; UVC placement.



Highlights from Newborn Screening workshop (above): Top left is Dr. Kumar introducing importance of newborn screening, Top right demonstrating smartphone based transcutaneous bilirubin measurement, Bottom left Dr. Aneesha presenting CCHD screening outlining AAP algorithm, Botton right Dr. Deepa showing proper OAE placement for hearing screening.


heart
SCREENING
CRITICAL CONGENITAL HEART DISEASE
affects 1-2/1,000 newborns
OFTEN REQUIRES
urgent cardiac surgery
Structural heart disease leads to mixing of oxygenated and de-oxygenated blood. the resulting lower oxygen saturations can be picked up by simple pulse oximetry and comparison of pre- and post-ductal saturations
Screening
COMPARISON OF RIGHT HAND (PREDUCTAL) AND EITHER FOOT (POSTDUCTAL) MEASUREMENTS
Pre-ductal Right hand
Post-ductal Either foot
REFER FAILED SCREENS FOR ECHOCARDIOGRAM and CARDIOLOGY
Innovation
In partnership with Sri Sathya Sai Institute of Higher Learning, we're developing a dual-sensor pulse oximeter that connects to a smartphone app—enabling simultaneous pre- and post-ductal oxygen saturation measurement with one device.
SISHU
Standardizing Infant Screening and Health for the Underserved
hearing
SCREENING
CONGENITAL HEARING LOSS
affects 1-6/1,000 newborns
CAUSES DELAYS IN
language and speech development
Screening
1
3
6
SCREEN by 1 month of age
DIAGNOSE by 3 months of age
INTERVENE by 6 months of age
Innovation
In collaboration with the University of Washington and Carnegie Mellon University, we are validating a low-cost, smartphone-based OAE device—reducing equipment costs by over tenfold. Current efforts focus on optimizing air-conduction (AC) versus bone-conduction (BC) models to enhance performance and affordability
AC TO AC OAE PROBE
AC TO BC OAE PROBE
SISHU
Standardizing Infant Screening and Health for the Underserved
jaundice
SCREENING
NEONATAL JAUNDICE
affects 60-80% of newborns
FOR AN ESTIMATED 1 IN 10
severe jaundice can lead to serious and irreversible complications if untreated
Screening
MEASUREMENT OF SERUM OR TRANSCUTANEOUS BILIRUBIN, AND EVALUATING FOR NEUROTOXICITY RISK FACTORS CAN GUIDE TREATMENT
Innovation
Picterus Jaundice Pro is a validated smartphone-based tool utilizing AI and a color calibration card to screen transcutaneous bilirubin
1
2
3
SISHU
Standardizing Infant Screening and Health for the Underserved
clinical decision-making
SUPPORT APPLICATION
Identify at-risk newborns
LOW BIRTH WEIGHT
MATERNAL FEVER
NEUROLOGIC DEFICIT
PREMATURITY
BIRTH ASPHYXIA
Provide management guidelines
Neonatal Hypoglycemia
RECOGNITION AND TREATMENT OF CRITICAL AND MODERATE HYPOGLYCEMIA
Neonatal Sepsis
LAB TESTS
ANTIBIOTIC DOSING
DIAGNOSTIC PROCEDURES
Early Detection of Cerebral Palsy
CAPTURING GENERAL MOVEMENT ASSESSMENTS VIDEO
SISHU
Standardizing Infant Screening and Health for the Underserved