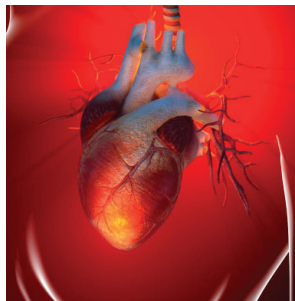


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Keynote Forum  
December 02, 2019

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***Heart Congress 2019 &  
Cardiac Surgery 2019***



Joint event on  
**10<sup>th</sup> WORLD HEART CONGRESS**  
&  
6<sup>th</sup> International Congress on  
**CARDIOLOGY AND CARDIAC SURGERY**  
December 02-03, Dubai, UAE

Joint event on

# 10<sup>th</sup> WORLD HEART CONGRESS

&

6<sup>th</sup> International Congress on

# CARDIOLOGY AND CARDIAC SURGERY

December 02-03, Dubai, UAE



## Suresh Vatsyayann

*ourDoctor, India*

### An End to Non-Communicable Diseases (NCDs)? The Human Life Cycle: A Grand zigsaw puzzle; Trying to put the millions of pieces together not knowing what to make

**Background:** Life is a mystery where today we have uncountable pieces of the zigsaw puzzle that we are trying to put together to make the whole. Some times we stumble into the pieces and other frequent times we search for the new pieces. We get so engrossed in the depth and vastness of the puzzle pieces that we forget what to make of them, the total picture of the puzzle pieces that we want to make without leaving any piece that is left out of place. Such is the complexity of life, the life cycle I would try to clarify through my keynote speech; an end to the NCDs by solving the grand zigsaw puzzle.

The question; a struggle: Being born itself is a mystery to me partially unravelled and so is the growth and development, and yet details about from where and where to are suspicious. Why, how, when and where remains a mystery, even to the collective scientific mind. We know and yet we forget that the pandemic of NCDs is pretty recent in this cosmic time, a few hundreds to a maximum of a few thousands of years. We, the medical practitioners, rarely explore the history and its evolution to know the root cause of all the NCDs. Moreover, reality is just a social construction that becomes our own construction when we adopt it and adapt to it, if we do. Therefore, certain things we take for granted coupled with the monetarisation of the economy, businessization of every aspect of life, including the health & education, science and the minds forces many to live in their little cocoons.

Deducted from the well known and proven scientific developments till today, I have constructed story of life that

will clarify many myths and let us see clearly what led to the exponential burden of NCDs (from the cardiovascular diseases, to Diabetes, other metabolic diseases, cancers, mental and psychological issues, autoimmune diseases, shorter and sicker lives, etc.).

I would take you on a snap shot scientific journey from the Sun to us humans and our internal cosmos-like body that should not have to go through early NCDs, related disability and death. I have gone through the available evidence and the results that convince me that at least 80%, if not more NCD burden could be prevented, contained and, or reversed in the world within 2-5 years if we all get together to start working on it through various available modalities.

#### Biography

Suresh Vatsyayann is a family medicine specialist with an MBBS, FCGP, DNB, FRNZCGP, an international MBA with Distinction and honours graduate with 1st class honours in International Health Development and Policy. He has over 70 publications in the various fields affecting health and has invented 10s of new techniques in surgery and medicine both. He has shared the principles behind a healthy life every week with doctors, medical staff and the general public for the last 47 years in Cook Islands, in New Zealand, in India and the world over. Most of the lectures have been part of the series of "Health for All Through Wisdom," a crusade against the epidemic of the non-communicable diseases (NVD) affecting us today. He has astonishing results with over 30 thousand followers and beneficiaries of his guidance and management. He has enlightened great medical, management and health policy audiences world over through participating as a speaker in many countries.

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 Notes:

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December 02-03, Dubai, UAE

**Kayapanda Mandana***Fortis Hospitals, India***Artificial intelligence and machine learning technology for early non-invasive detection of Coronary Artery Disease**

Coronary Artery Disease (CAD) is a leading cause of death globally. The proven Gold standard to diagnose CAD is an invasive procedure, leading to Coronary Angiography. However, all physiological manifestations of CAD either appear late in the Time- Curve or are non-specific surrogate markers.

Affordable non-invasive solutions for health monitoring have become an important area of research. With the advent of Artificial Intelligence (AI), there has been newer multi-modal non-invasive sensing and analysis. We started with Fuzzy expert system approach for CAD screening using clinical parameters. Following this we screened CAD patients and recorded their Phonocardiogram (PCG) signals along with simultaneously recording of Photoplethysmogram (PPG). Important information regarding heart sounds generated by early CAD is typically confined within 150 Hz. Following this we proposed a new multi-channel PCG -based system to classify CAD affected individuals and normal individuals. We simultaneously acquired PCG signals produced by weak CAD murmurs from four different auscultation sites. The two-class classification is done in a machine learning framework by employing an artificial neural network (ANN) classifier.

A Multi-modal approach for Early Non-invasive detection of CAD is being proposed here using various Machine learning techniques tested in a tertiary care Hospital, wherein patients with various degree of CAD and age matched normal individuals were studied.

In first stage, a hierarchical rule-engine identifies the high cardiac risk population using patient demography and

Medical history, who are then further analysed in second stage using numeric features from Various Cardiovascular Signals. These numeric features were simultaneously extracted from the CAD predicted subjects from Single lead ECG, PCG and PPG.

Results in these 160 subjects (CAD 80 and Normal 80), show that the proposed approach achieves sensitivity=0.96 and Specificity=0.91 in classifying CAD patients on an in-house hospital dataset, recorded using commercially available sensors.

Performance of the existing CAD classifiers, available in literature is often compromised due to inconsistent manifestation of discriminating patterns in a single cardiovascular signal. Our study shows that the performance can be significantly improved if multiple CAD markers are effectively combined using Domain knowledge.

**Biography**

Kayapanda Mandana is at present Director of Cardiac Surgery at Fortis Hospitals in Kolkata, India. He has been a Consultant Cardiac Surgeon for over 30 years and has keen interest in Cardiovascular research, especially Coronary Artery Disease. He had his formal Cardiac surgery training at Mahe University, Manipal, in south India and then went on to work at University Hospital of Wales, in Cardiff, UK. At present he has been a Research Advisor for TCS (Tata consultancy services), in Eastern India and Advisor /Principal Investigator in the Department of Electronics and Electrical Engineering, Indian Institute of Technology, Kharagpur, India. He has over 25 international published articles on this subject. (CAD, Early detection). He has been a member of various societies (STS in UK, IACTS in India and FETCS: Fellow- European Board of cardio thoracic surgeons).

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# CARDIOLOGY AND CARDIAC SURGERY

December 02-03, Dubai, UAE

**Satyanarayana Upadhyayula<sup>1</sup>**  
**Rick Hongryul Kim<sup>2</sup>, Sumit Dhingra<sup>3</sup>**

<sup>1</sup>Medanta Hospital, India

<sup>2</sup>Wellysis Corporation, South Korea

<sup>3</sup>Samsung SDS, India

## Wellysis S- PATCH versus Conventional HOLTER Ambulatory Electrocardiographic Monitoring (The PACER Trial):

**Aims and Objectives:** This is a prospective, interventional, non-randomized, single group assignment, diagnostic sub study with intention to treat. This sub study aims to compare the diagnostic yield, or ability to detect arrhythmias - especially paroxysmal atrial fibrillation (PAF) - of the conventional Ambulatory Holter monitoring device with the Wellysis S Patch, a novel, dual-lead, low-profile device.

**Background:** It is widely recognized that technology can improve the health of populations in countries around the world. Smartphone technology is at the forefront of innovation in low, middle and high-income countries. The Smartphone technology has already improved the doctor-patient interaction, reducing costs and improving care for patients.

**Methods:** Patients referred for ambulatory electrocardiographic (ECG) monitoring wore both devices simultaneously for 24-48 hours and the incidence of clinically significant arrhythmias were compared. Patients who satisfied the eligibility criteria as well as referred for ambulatory ECG monitoring were consented and enrolled prospectively to have the Holter monitor and the Wellysis S Patch device placed simultaneously. A patient satisfaction survey was given to the patient and parent/guardian after completion of the study to compare the comfort, interference with daily activities, adverse events (such as skin irritation or if either device fell off), and preference for each device. The overall performance (comfort of wearing, ease of use, efficiency and durability, clarity of recorded signals)

**Results:** When it comes to comfort of wearing, ease of use, efficiency and durability, clarity of recorded signals of Wellysis S Patch was found to be superior to conventional Holter (feedback from patients, paramedical staff, clinical staff regarding the comfort of wearing, usability, operational efficiency) by Mc Nemars analysis, which revealed odds ratio of 8.75 with a 95% CI 4.205 to 21.060,  $P < 0.0001$ .

**Conclusion:** Multi lead ambulatory Holter monitoring remains the gold standard for arrhythmia detection in stroke patients. However Wellysis S Patch device has a definite complementary role in the detection of paroxysmal atrial fibrillation (PAF) in stroke patients. However with advances in technology a paradigm shift is possible.

### Biography

Satyanarayana Upadhyayula is a Consultant Cardiologist in Medanta Hospital, New Delhi. He completed his MBBS from Kakatiya Medical College in 1986. In 1990 he completed his M.D. from All India Institute of Medical Sciences – Biophysics, worked in Cardio Vascular Physiology, Hemodynamics, Nuclear Medicine and Nuclear Cardiology. Fellowship in Emergency Medicine (FEM) July 2007 - June 2008 (Royal College of General Physicians, UK). Life Member - Indian Academy of Echocardiography. American Heart Association (AHA) Certified Instructor in Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS) and International Trauma Life Support (ITLS).

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