



# YOUR HEALTH

An Official Monthly Publication in English of the Indian Medical Association since 1952 for the people to Propagate Health Awareness in the Community

**DON'T MISS A BEAT**

*World*



*Heart day*

**SEPTEMBER 29**

**Volume 74 | Number 9 | September 2025 | Kolkata**

# YOUR HEALTH

## OF INDIAN MEDICAL ASSOCIATION

### HEADQUARTERS (KOLKATA)

Sir Nilratan Sircar IMA House, 53 Sir Nilratan Sarkar Sarani (Creek Row),  
Kolkata-700014, West Bengal, Ph: 033-22364200/9123674412,  
Email: yourhealthofima@gmail.com,yourhealthoffice@gmail.com



**Dr Ketan Desai**  
Chief Patron  
Past National President, IMA



**Dr R V. Asokan**  
Imm Past National President  
Indian Medical Association



**Dr Dilip Bhanushali**  
National President  
Indian Medical Association



**Dr Sarbari Dutta**  
Hony. Secretary General  
Indian Medical Association



**Dr Piyush Jain**  
Hony. Finance Secretary  
Indian Medical Association

### Your Health Office Bearers (2025-26)



**Dr Khwaja Alim Ahmed**  
Hony. Editor



**Dr Sankar Sengupta**  
Hony. Secretary



**Dr Molla Abul Kasem**  
Hony. Associate Editor



**Dr Shailendra Kumar Singh**  
Hony. Associate Editor



**Dr Jyotirmoy Pal**  
Hony. Jt. Finance Secretary  
(IMA Hqs.)

### Your Health Committee Members (2025-26)



**Dr Pallab Gangopadhyay**



**Dr Shakil Akhter**



**Dr Bibartan Saha**



**Dr Satabdi Dalui**



**Dr Suvadeep Bose**

### Your Health Advisory Board (2025-26)



**Dr Atul Kochhar**



**Dr Syed Monajatpur Rahaman**



**Dr Ranjan Kamilya**



**Dr Basab Bijoy Sarkar**



**Dr Amanul Hoque**

# YOUR HEALTH of the INDIAN MEDICAL ASSOCIATION

# CONTENTS



**04**

**Editorial**

**Dr. Khwaja Alim Ahmed**

**05**

**From the Desk of Secretary**

**Prof. (Dr.) Sankar Sengupta**

**08**

**Guest Editorial**

**Dr Amanul Hoque**

**10**

***A National Heart Safety Net for Physicians: Combining Occupational Health, AI Screening, and Emergency Preparedness***

**Dr. Manoj Kumar Daga**

**13**

***Heart Failure: Definition, Epidemiology, Pathophysiology, and Management***

**Dr. A. B. Malpani**

**15**

***Advances and Challenges of Paediatric Cardiac Care in India***

**Dr Kuntal Roy Chowdhuri**

**17**

***INFORMED CONSENT- Legal consideration***

**Dr Pravir Kumar Das**

**20**

***Pediatric Intensive Care Unit-History, Myths and Facts***

**Dr. Satarupa Mukherjee**

**22**

***FETAL ECHO***

**Dr. Shyamajit Samaddar**

Disclaimer: the views and information expressed and provided in the Articles are the views and information of the respective authors. Your Health of IMA is not responsible for the authenticity of the contents of the Articles and Your Health cannot be held responsible or liable for any claim or damage arising out of any action or belief on the basis of the contents of the Articles.

## CPR "Golden Time"

Editorial

The CPR "Golden Time" refers to the critical window after sudden cardiac arrest when intervention is most effective. Ideally, CPR and defibrillation should begin within the first 3 to 4 minutes to prevent severe brain damage and maximize survival, as brain cells begin to die within minutes of oxygen loss and survival rates drop significantly with each passing minute.

### Why Time is Critical

**Brain Damage:** When the heart stops, blood flow to the brain stops, and oxygen deprivation begins within minutes.

**Survival Rates:** For every minute that defibrillation is delayed, the chance of survival decreases by 7-10%.

**Permanent Harm:** Irreversible brain damage can occur in as little as 4 minutes, and after 10 minutes without intervention, survival chances are nearly zero.

### What to Do During the Golden Time

**Recognize the emergency:** A person who collapses and is unresponsive needs immediate help.

**Call for help:** Call emergency services (like 108 in India or emergency services elsewhere) immediately.

**Start CPR:** If you're trained, begin chest compressions to circulate oxygenated blood.

**Use an AED:** If an AED (Automated External Defibrillator) is available, use it immediately. AEDs are designed to analyze heart rhythm and deliver a shock to restore normal function.

### The Role of CPR

**Buys Time:** CPR helps to circulate oxygenated blood, but it doesn't restart the heart.

**Supports the Brain:** This temporary circulation provides vital oxygen to the brain, preventing further damage and buying time for advanced medical care.

In summary, the "Golden Time" for CPR is the first few minutes after a sudden cardiac arrest. Acting quickly with CPR and an AED significantly increases the chances of survival and reduces the risk of permanent damage.

**General concept:** Cases of severe trauma, especially internal bleeding, require [surgical](#) intervention. Complications such as [shock](#) may occur if the person is not managed appropriately and expeditiously. It therefore becomes a priority to transport people with severe trauma as fast as possible to specialists, most often found at a [hospital trauma centre](#), for treatment. Because some injuries can cause people to deteriorate extremely rapidly, the lag time between injury and



**Dr. Khwaja Alim Ahmed**  
Hony. Editor, Your Health

treatment should ideally be kept to a bare minimum.

**Origins of the term:** [R Adams Cowley](#) is credited with promoting this concept circa 1944, first in his capacity as a military surgeon and later as head of the University of Maryland Shock Trauma Centre. The concept of the "Golden Hour" may have been derived from the [French military's World War I](#) data. The [R Adams Cowley Shock Trauma Centre](#) section of the Centre's website quotes Cowley as saying, "There is a golden hour between life and death. If you are critically injured you have less than 60 minutes to survive. You might not die right then; it may be three days or two weeks later — but something has happened in your body that is irreparable.

**Controversy :** While most medical professionals agree that delays in definitive care are undesirable as they may lead to significant increases in morbidity and mortality, research casts doubt on the validity of the golden hour as it appears to lack a scientific basis. [Bryan Bledsoe](#), a physician and outspoken critic of the golden hour and other controversial medical topics, such as [critical incident stress management](#), has said that the peer-reviewed medical literature does not demonstrate any "magical time" for saving critical patients. There are different critical periods for different injuries.

## Heart Disease

Heart disease includes many diseases that affect your heart, but coronary artery disease (CAD) is the most common and familiar one. CAD can create a waxy build-up in your heart's arteries that can cause a heart attack. Healthy habits, medicines and procedures can prevent or treat CAD and other heart diseases.

### Overview

Heart disease has many types and can affect various parts of your heart.

#### What is heart disease?

Heart disease is a variety of issues that can affect your heart. When people think about heart disease, they often think of the most common type — coronary artery disease (CAD) and the heart attack it can cause. But you can have trouble with different parts of your heart, like your heart muscle, valves or electrical system.

When your heart isn't working well, it has trouble sending enough blood, oxygen and nutrients to your body. In a way, your heart delivers the fuel that keeps your body's systems running. If there's a problem with delivering that fuel, it affects everything your body's systems do.

Lifestyle changes and medications can keep your heart healthy and lower your chances of getting heart disease.

#### What are the types of heart disease?

##### Heart disease types include:

- Narrowing of your heart's blood vessels because of fatty deposits (coronary artery disease).
- Abnormal Heart Rhythms (arrhythmias).
- Heart valve diseases.
- Abnormal heart muscle (cardiomyopathy).
- Heart squeezing and relaxation difficulties (heart failure).
- Heart issues you have at birth (congenital heart disease).
- Issues with the fluid-filled sac surrounding your heart (pericardium).

##### How common is heart disease?

Heart disease is the top cause of death in the United States. In 2021, heart disease caused 1 in 5 deaths. That's nearly 700,000 people. Coronary artery disease, the most common type of heart disease, caused about 375,000 of those deaths.



**Prof. (Dr.) Sankar Sengupta**  
Hony. Secretary, Your Health

Heart disease affects people from most ethnic backgrounds, regardless of sex.

#### Symptoms and Causes

##### What are the symptoms of heart disease?

You can have different symptoms of heart disease depending on what's wrong. Heart disease symptoms may include:

- Pounding or racing heart (palpitations).
  - Sweating.
  - Light-headedness.
  - Shortness of breath.
  - Dizziness or sudden unexplained loss of consciousness.
  - Chest or upper body pain, pressure, heaviness or discomfort.
  - Neck pain.
  - Heartburn or indigestion.
  - Nausea or vomiting.
  - Swelling in your lower body.
  - Exhaustion.
  - Difficulty sleeping.
  - Inability to handle exercise.
  - Fever.

##### What are the early warning signs of heart disease?

Early warning signs of heart disease include:

- \* Chest Pain
- \* Shortness of breath

- \* Swelling in your legs
- \* Fatigue
- \* Dizziness, fainting unexpectedly or near-fainting repeatedly

### What causes heart disease?

Different types of heart disease have different causes.

Heart disease causes include:

- Heart muscle scarring.
- Coronary artery disease.
- Genetic issues.
- Problems with kidney function.
- Infections, including severe infections outside of your heart.
- Thyroid problems.
- Rheumatic disease.
- Aging.
- Injury to part of your heart.
- Heart attacks.
- Certain diseases, like autoimmune diseases.
- Pregnancy.
- Certain medications, like specific kinds of chemotherapy.
- Substance use, including alcohol, cocaine, methamphetamine and others.
- High blood pressure.
- Abnormal heart rhythm.

### What are the risk factors for heart disease?

Heart disease causes may be more likely to happen to you if you have certain risk factors. Risk factors for heart disease include:

- High cholesterol.
- High blood pressure.
- Tobacco product use.
- Inactive lifestyle.
- Heart disease in your biological family.
- Type 2 diabetes.
- Having a BMI (body mass index) higher than 25 (having overweight).
- Eating unhealthy foods.
- Substance use disorder.

### What are the complications of heart disease?

Some types of heart disease can lead to other kinds of heart disease. Complications of heart disease — many of which are life-threatening — include:

- Heart attack.
- Heart failure.
- Cardiomyopathy.
- Stroke.
- Abnormal heart rhythms.
- Cardiogenic shock.
- Cardiac arrest.
- Heart valve disease.

- Pulmonary hypertension.
- Damage to your kidneys or liver.

### Diagnosis and Tests

#### How is heart disease diagnosed?

A provider can make a heart disease diagnosis after:

- Doing a physical examination.
- Hearing about your symptoms.
- Learning about your personal and biological family health history.
- Performing diagnostic tests.

#### What tests will be done to diagnose heart disease?

Tests to diagnose various types of heart disease include:

- Electro-cardiogram (EKG or ECG).
- Ambulatory monitors.
- Echo-cardiogram (Echo).
- Cardiac – Computerized Tomography (CT).
- Heart magnetic resonance imaging (MRI).
- Blood tests to check your cholesterol level and other substances.
- Stress test.
- Cardiac catheterization.

### Management and Treatment

#### How is heart disease treated?

Depending on your heart issue, you may need to make changes to your daily life, take medication or have surgery.

#### Heart disease treatments may include:

- **Changing your lifestyle:** This could consist of cutting saturated fats from your meals, stopping the use of tobacco products or starting a walking program.
- **Taking medicine:** You can lower blood pressure and cholesterol with medicine. Also, certain medications can help with heart failure or abnormal heart rhythms. You need to consistently take these medications the way your healthcare provider tells you to.
- **Having surgeries or procedures:** You may need open-heart surgery, minimally invasive surgery or an ablation. Other procedures include catheterization procedures, stent placement or cardio-version.
- **Taking part in a cardiac rehab programme:** This supervised exercise program can strengthen your heart after a heart attack. With nutritional counselling and monitored exercise, it provides extra support for changing your lifestyle.

#### Complications/side effects of the treatment

Most prescription medications have some side effects. Medicines you take to lower your blood pressure can

make you dizzy or tired or give you a headache. The most common medications that help you manage your cholesterol levels can give you sore muscles, nausea or headaches.

Surgeries or procedures have some risks, like bleeding, stroke, abnormal heartbeats, infection or other issues.

#### **How long does it take to recover from treatment?**

Depending on the surgery or procedure you have, your recovery can take a few days to many weeks. You may only need a few days to recover from minor procedures. But you may need two to four weeks to recover from minimally invasive surgery and six to 12 weeks to recover from open-heart surgery.

#### **Outlook / Prognosis**

##### **What can I expect if I have heart disease?**

Medications and/or procedures can help people who have various types of heart disease. It's easier to treat most types of heart disease if you get an early diagnosis instead of waiting for symptoms to get worse. Many people can live full lives when they follow their healthcare provider's treatment plan.

#### **Prevention:**

##### **Can heart disease be prevented?**

**You can lower your risk of some kind of heart diseases in these ways:**

- 
- Reach and stay at a weight that's healthy for you.
- Manage other conditions like diabetes, high blood pressure and high cholesterol.
- Get at least 30 to 60 minutes of exercise per

day on most days of the week.

- Decrease your stress level.
- Eat foods low in salt and saturated fat. (Your healthcare provider can recommend heart-healthy foods).
- Don't use any tobacco products.

You can't prevent congenital heart disease because you're born with it.

#### **Living With**

##### **How do I take care of myself?**

If you have coronary artery disease (the most common kind of heart disease), you can improve your health by making changes to your daily life. This may include reducing how much salt and saturated fat you eat and increasing how much you exercise. In addition, a provider may recommend taking medicine to lower your cholesterol and/or blood pressure.

##### **When should I see my healthcare provider?**

If you have a biological family history of heart disease, you may want to ask your provider if you have other risk factors. If you do, you can make a plan to help prevent heart disease.

Contact your provider if you have heart disease symptoms.

##### **When should I go to the ER?**

Call your local emergency number if you suddenly experience these issues:

- Chest pain, pressure, heaviness or discomfort.
- Fainting.
- Shortness of breath.



## HEART ATTACKS, it's CURRENT SURGICAL SOLUTIONS.

"LIMA-RIMA-Y" = TOTAL ARTERIAL REVASCLARIZATION.

Poverty, ignorance, lack of awareness and unhealthy habits may be driving heart disease-related deaths in India, especially in West Bengal. India is considered to be a capital of heart disease in the world. More than a quarter of all deaths, at ages 30-69 years, 70% were caused by coronary heart disease.

Surprisingly the demographic pattern of this disease has been changed over a period of last decade. It is not necessarily represent the disease of obese and rich people, rather it is happening in poor and manual labour also. This is called "Epidemiological Transition" of coronary artery disease, particularly in India and subcontinent. Firstly, the disease occurring more in younger population. Secondly, it is more aggressive in nature and thirdly female are suffering more than the past. Research is going on to determine the causality of this change. Most probably it is due to rapid urbanisation, excessive smoking, lack of exercise and unhealthy foods habits.

### How Heart Attacks occur

Heart is the central organ of our body, it acts as a pumping machine and circulates blood to every parts. However the heart gets it's own blood through the coronary artery. When the coronary artery is getting blocked by fat deposited in it's wall, coronary blood supply become compromised. Heart is not getting blood as per demands, and there is "demand-supply" mismatch which is leading to Angina (chest pain).

### Symptoms/why patients come?

Although Angina pectoris (chest pain) is the classic presentation it may not be present in 30-40% of patients, people like diabetic may not be able to perceive pain. Many people may ignore their cardiac pain being confused with the acidity and they take antacid for years. Interesting thing is that, recurrence may happen inspite of regular use of antacids, even at a double dose. It is very simple to differentiate GI pain from cardiac angina which is any discomfort on the left side of the chest, experience on exertion, compressive in nature, persist for few minutes and disappear on taking rest or sublingual nitrate. It may be associated with sweating or spread towards the arm and jaw but not related to the timing of food that is typically found in acid peptic disorders.



**Dr Amanul Hoque**  
Sr Cardiac Surgeon  
BM Birla Heart Hospital, Kolkata.

Shortness of breath, on walking or climbing on stairs. This is called "angina equivalent" especially in diabetic and long standing coronary artery disease with severely compromised heart function (LVEF<35%). Sometimes people may not have any problems of heart but for other reasons of doing cardiac evaluation, they are found to be a heart problems.

Few patients may also have sudden death due to massive heart attacks. Mostly we found our patients in hospital admission are acute myocardial infarction, severe chest pain and sweating, low blood pressure.

### How we can diagnose?

After listening the good history of the episode, we should examine thoroughly. However there may not have any significant findings on examination. The first investigation what we can do for this is a 12 lead ECG. That may give lots of information but Angiography is the investigation and it is considered as a gold standard for diagnosis. It gives us details about the disease pattern.

### Different treatment options

After getting the Angiography details, the following modalities of treatment can be offered to the patient.

1. Optimal Medical therapy
2. Angioplasty or Stenting
3. Bypass or CABG

What treatment option is suitable for which patients, is exclusively depends on the pattern of disease, risk factors and choice of the patient.

### Risk factors

It is a multifactorial, age and family history that can not be modified. Other preventable factors are smoking, diabetes, hypertension, obesity and dyslipidemia. Sedentary lifestyle and unhealthy foods may be driving to this disease.

### Bypass surgery/When & how?

It is not necessary to do bypass surgery for every patients of coronary artery disease. It has it's own complications and risks but when bypass surgery is indicated, it should be done because no way to get replacement of it's beauty in long term. Following are the key indications-(Angio)

1. Left main coronary artery disease which is tight enough to cause sudden massive attacks in any time.
2. Severe triple vessel coronary artery disease with severe LV dysfunction in a diabetic patients.

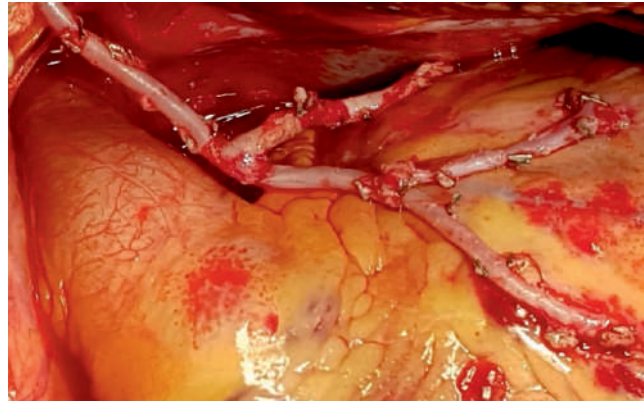
Pattern of disease- multiple block with long segment disease and diffusely involved artery is a suitable candidate for bypass surgery.

Bypass is not an open heart surgery, we need not to open the heart chamber but sometimes require help of a cardio-pulmonary bypass machine. 95% bypass surgery in India done on beating heart.

### Conduits for bypass- Artery/Vein?

Conduits for bypassing the blocks may be of two types, artery (LIMA/RIMA) or Veins eg, Reverse Saphanus Venus graft(RSVG). Arterial graft/conduits are always better than vein graft in long term patency rete. When both internal mammary/thoracic arteries are used for bypassing all the blocks without using any Veins then it is called total Arterial Revascularization (TAR). Radial artery from forearms may be used as an Arterial graft.

### Advantages of arterial graft



Arterial graft last for long term in comparison to the vein graft. In contrast to saphenous vein grafts, the long-term patency rate of arterial bypass conduits is very high, with 85% to 95% of grafts free of significant stenosis at 7 to 10 years. It doesn't need any second cut on the leg and less chance of brain stroke during bypass operation.

### MICS-CABG

When bypass surgery is done through a small cut/incision or making single or multiple holes then it is called minimally invasive cardiac surgery (MICS)

It is very much acceptable to the patients as it is less painful, cosmetically better and require short hospital stay. Patient can return to work very early however this type of operations cannot be done in all patients, Instruments are expensive and require experience and skills of the surgeon. Proper selection of Patient is the key of success.

### Prevention is better than cure

This is a preventable disease hence detection and prevention of it's causative risks factors may be the only way of controlling burden of heart disease. Smoking cessation, regular exercise and heart friendly dietary advice are strongly encouraged. Sugar control for diabetic and heart check up in regular intervals are very much important for high risk patients.

## A NATIONAL HEART SAFETY NET FOR PHYSICIANS: COMBINING OCCUPATIONAL HEALTH, AI SCREENING, AND EMERGENCY PREPAREDNESS

As we observe World Heart Month, a painful paradox demands urgent attention: the very doctors who devote their lives to caring for others are increasingly becoming victims of sudden cardiac death. In India, recent instances of young physicians collapsing on duty have turned tragic anecdotes into a systemic and warning call. These are not simply the results of lifestyle choices—they are signs of structural and professional vulnerabilities that we can no longer afford to ignore. What is needed now is a paradigm shift—from reactive grief to proactive prevention—through a multilayered National Heart Safety Net comprising occupational health mandates, AI-enabled cardiac risk screening, and institutional emergency preparedness.

### Introduction

The irony is stark: physicians, despite their deep insight into cardiovascular risk factors, are proving unusually vulnerable themselves. Between gruelling work hours, sleep deprivation, emotional fatigue, and the sidelining of personal health, a toxic confluence forms—one whose endpoint may be sudden cardiac catastrophe. The deaths of young doctors in India are a distressing reminder, forcing us to confront an uncomfortable truth: physician wellbeing cannot rely on individual resilience alone. Medicine must be acknowledged as a high-risk profession that requires a system-level protective framework—much like aviation or firefighting—designed not just to heal lives, but to preserve those who heal.

### Current Gaps in Prevention for Physicians

India's healthcare system remains heavily patient-oriented, often overlooking those who provide care. There are critical systemic gaps:

- **Lack of structured occupational health programs**  
Unlike other high-risk professions, medicine in India lacks formal, mandatory occupational health structures for those working in hospitals—without regular cardiovascular checks or systematic stress assessments.
- **Absence of mandated cardiac screening**  
There is no uniform national protocol for periodic ECGs, stress testing, or risk stratification, particularly for young doctors or those working in intensive



**Dr. Manoj Kumar Daga**  
Director CTVS,  
BM Birla Heart Research Centre

specialties or demanding residency programs.

- **Cultural stigma around physician illness and burnout**

Many doctors resist admitting to burnout or cardiac risk—viewing such admissions as professional weakness or fearing it may jeopardize their careers or reputations.

- **Reactive institutional approaches**

Most wellness or intervention programs are triggered after a crisis. Hospitals frequently lack proactive wellness and screening protocols embedded in institutional policy, instead responding only when tragedy strikes.

The recent death of 39-year-old cardiac surgeon Dr Gradlin Roy, who collapsed while on rounds at Saveetha Medical College in Chennai, is a vivid and painful reminder. Even though colleagues initiated immediate advanced resuscitative efforts—CPR, angioplasty, intra-aortic balloon pump, ECMO—Dr Roy's 100% left main artery blockage proved fatal. Senior clinicians have warned that his death is not an isolated event, and point to long work hours, stress, sleep disruption, and neglected physician health as central contributors.

### The Case for a National Heart Safety Net

To address these vulnerabilities, a three-tiered National Heart Safety Net is essential—one that moves beyond lifestyle advice and sets up real, protective systems for doctors.

- **Occupational Health Infrastructure**

Physician health must become a formal, institutional priority. Hospitals should enforce regular cardiovascular screenings—ECGs, stress tests, lipid profiles, and other risk assessments—at defined intervals. Confidential mental health and stress-management counselling services should be easily accessible, and stigma around seeking help actively de-stigmatized. Furthermore, work-hour regulations, rest policies, wellness programs, and insurance schemes tailored for healthcare professionals need to be institutionalised, ensuring that prevention is not a personal afterthought but a professional right.

- **AI and Digital Screening Tools**

Advances in monitoring technology offer unique opportunities to predict cardiac risk proactively. Wearable devices can track vital parameters—heart rate variability, arrhythmia detection, sleep metrics, blood pressure—and feed this into AI-driven risk models that generate dynamic, individualized risk profiles. Research shows that AI models for wearable cardiovascular monitoring can detect arrhythmias and assess risk with increasing accuracy. When linked with hospital electronic medical record systems, these tools can trigger alerts for abnormal physiologic or behavioural patterns well before catastrophic events occur. This transformation—from periodic snapshots to continuous surveillance—could make early intervention and prevention a reality.

- **Emergency Preparedness and Safety Systems**

Even with prevention, acute cardiac events can still occur—so response systems must be flawless. It is unacceptable for a physician to suffer a cardiac arrest in a hospital without immediate access to lifesaving equipment. Automated External Defibrillators (AEDs) must be placed in staff areas—doctor lounges, on-call rooms, administrative wings—not just in clinical critical care zones. All hospital personnel, both clinical and non-clinical, should receive regular and mandatory training in CPR and rapid response. Pilot initiatives—such as a buddy system or check-in protocol during extended or overnight shifts—could create an extra layer of safety, ensuring no colleague is

alone in crisis.

### The Role of Policy and Administration

Real change requires policy-level commitment. National regulatory bodies—especially the National Medical Commission and Ministry of Health and Family Welfare—must draft and enforce guidelines around physician health, including mandatory cardiac risk screening, occupational health services, stress management, and institutional safety protocols. These should be incorporated into hospital accreditation standards—such as through NABH—to create institutional incentives for physician wellness. Funding and deployment of AI-assisted preventive technologies should be supported through public-private partnerships, ensuring equitable access in both urban centres and rural or public-sector health facilities.

### Ethical and Practical Considerations

While this framework is promising, it is not without challenges. AI-enabled monitoring and continuous health surveillance raise serious ethical questions around data privacy, autonomy, and consent. Institutional safeguards must ensure that health data is used exclusively for wellness and prevention, not for punitive or discriminatory decision-making. Screening programs must be evidence-based and carefully calibrated to avoid over-testing or psychological harm, especially among young, otherwise healthy practitioners. Finally, any model must be scalable and adaptable so that rural, under-resourced, and public hospitals can implement it—rather than becoming a privilege of elite urban centres.

### A Call to Action

The time for silent acceptance is over. This is a call to action for every stakeholder:

- **Hospitals and Healthcare Institutions:** Transition from rhetoric to action by embedding physician wellness into policy—mandating cardiac screening, wellness check-ups, and emergency preparedness as part of institutional norms.
- **Regulatory Bodies and Medical Councils:** Mandate evidence-based occupational health frameworks, physician risk screening, and wellness services as core accreditation requirements.
- **Government:** Invest strategically in AI-enabled preventive infrastructures and emergency safety nets to protect healthcare workers nationwide.

- **Physicians:** Embrace both personal accountability and collective advocacy—take charge of your own health, and support a culture of mutual care and wellness within the profession.

**Conclusion**

Our physicians are not immune. They are—and must remain—the backbone of our national health system. The preventable loss of life in young doctors is not just

a personal tragedy—it is a systemic failure that deserves urgent correction. A National Heart Safety Net is not a luxury or afterthought; it is an imperative. By weaving together occupational health, digital prevention, and emergency response, we can build a system that truly protects those who protect us. Preventive care, empowered by policy and technology, must redefine the way we defend physician cardiac health in India.

**Providing an Encyclopedia of Autoimmunity Diagnosis**

**Autoimmunity Center for Excellence**

**Orthopaedics**

**Rheumatology**

**Endocrinology**

**Gynaecology**

**Dermatology**

**Nephrology**

**Neurology**

**Gastroenterology**

**Objectives of L-ACE**

- Diagnosis of the disease
- Monitoring the evolution
- Tracking the efficacy of treatment

**Why Us**

- Widest test range for Autoimmunity
- Unmatched Turn-Around Time
- Latest Automated Platforms

**National Customer Care: 011-4988-5050**

**www.lalpathlabs.com**

## HEART FAILURE: DEFINITION, EPIDEMIOLOGY, PATHOPHYSIOLOGY, AND MANAGEMENT

### Definition

Heart failure (HF) is a clinical syndrome in which symptoms and/or signs arise from a structural or functional cardiac abnormality, accompanied by elevated natriuretic peptides or objective evidence of pulmonary or systemic congestion. It remains a major global cause of mortality, morbidity, impaired quality of life (QoL), and high healthcare expenditure.

### Epidemiology

HF has been described as a modern pandemic, affecting more than 64 million people worldwide. Rising prevalence reflects better survival after acute cardiac events, improved HF therapies, and increased life expectancy. In Europe, the median prevalence is around 17 per 1,000 individuals, varying from <12 in Greece to >30 in Germany and Lithuania. In the US, prevalence is projected to increase by 46% between 2012 and 2030. Asian data reveal heterogeneous prevalence: 6% in Taiwan, 5% in Indonesia, 1–2% in the Philippines, and 0.6% in South Korea.

In India, HF is emerging as a significant health challenge. Registries such as the Trivandrum HF Registry (2013), Kerala Acute HF Registry, and the National HF Registry consistently show that Indian patients present almost a decade earlier than those in high-income countries, with a mean age of ~60 years. The estimated prevalence in India is about 1% of the population (8–10 million people), with annual HF-attributable mortality of 0.1–0.16 million.

### Pathophysiology

HF is progressive, beginning with structural or functional cardiac injury from ischemia, hypertension, valvular disease, or genetic cardiomyopathy. Compensatory mechanisms initially maintain cardiac output but eventually lead to maladaptation.

**Sympathetic Nervous System (SNS):** Chronic SNS activation decreases  $\beta$ -receptor sensitivity, promotes hypertrophy, and increases oxygen demand.

**Renin–Angiotensin–Aldosterone System (RAAS):** Vasoconstriction and sodium retention exacerbate afterload. Angiotensin II and aldosterone drive hypertrophy and fibrosis, fueling adverse remodeling.

**Neurohormonal Mediators:** Epinephrine, norepinephrine, endothelin, and vasopressin elevate



**Dr Ashok B Malpani**  
Sr Interventional Cardiologist  
B M Birla Heart Research Centre  
Director CathLab BMBHRC  
Fellow Cardiological Society Of India

afterload and worsen myocardial strain.

**Nitric Oxide Pathway:** Endothelial dysfunction reduces NO and cyclic GMP signaling, increasing stiffness and fibrosis.

Once compensatory reserves are exhausted, progressive cell death, fibrosis, and impaired relaxation perpetuate the cycle of HF.

### Classification

HF can be staged and categorized by ejection fraction (EF).

**Stages (ACC/AHA):**

Stage A: At risk for HF (risk factors only).

Stage B: Pre-HF (structural changes, elevated biomarkers, but no symptoms).

Stage C: Symptomatic HF (past or current symptoms).

Stage D: Advanced HF (refractory symptoms, recurrent hospitalization).

**Ejection Fraction Categories:**

HFrEF: EF  $\leq$ 40%

HFmrEF: EF 41–49%

HFpEF: EF  $\geq$ 50% with evidence of HF

HFimpEF: Previously  $\leq 40\%$ , now  $> 40\%$

#### Risk Factors and Diagnosis

Non-modifiable risks include age, sex, race, and genetics, while modifiable risks include hypertension, diabetes, obesity, smoking, sedentary lifestyle, and coronary artery disease. Diagnosis integrates history, physical exam, biomarkers (BNP, NT-proBNP), imaging (echocardiography, cardiac MRI), and tools like the Framingham criteria.

#### Management

The overarching goals are to relieve symptoms, reduce hospitalizations, and prolong survival. Management depends on HF stage and phenotype.

#### 1. General and Non-Pharmacological Measures:

Lifestyle: sodium/fluid restriction, healthy diet, exercise, smoking cessation, weight control.

Vaccination against influenza and pneumococcal disease.

Screening for frailty, depression, and social barriers.

#### 2. Pharmacological Therapy:

Diuretics provide symptomatic relief but do not reduce mortality.

The “Four Pillars” of HFrEF therapy are:

1. Angiotensin receptor–neprilysin inhibitor (ARNI) or ACEI/ARB

2. Evidence-based  $\beta$ -blockers (carvedilol, bisoprolol,

metoprolol succinate)

3. Mineralocorticoid receptor antagonists (MRA)

4. SGLT2 inhibitors (dapagliflozin, empagliflozin)

Early initiation and rapid up-titration of these agents can extend survival by several years in younger patients with HFrEF.

Other agents: Ivabradine (for sinus rhythm HR  $> 70$  bpm), vericiguat (sGC stimulator for worsening HF), hydralazine/isosorbide dinitrate (particularly in African-American patients), and digoxin (symptom control).

#### 3. Device Therapy:

Implantable cardioverter-defibrillator (ICD) for EF  $\leq 35\%$  with NYHA II–III.

Cardiac resynchronization therapy (CRT) for LBBB with QRS  $\geq 150$  ms and EF  $\leq 35\%$ .

LV assist devices (LVAD) and transplant for advanced HF (Stage D).

#### 4. Palliative Care:

In advanced, refractory HF, shared decision-making and supportive care become essential.

#### Conclusion

Heart failure is a global public health burden with rising prevalence, particularly in low- and middle-income countries like India. Early recognition of at-risk individuals, timely institution of guideline-directed medical therapy, and structured follow-up are critical to reduce morbidity and mortality. Advances such as SGLT2 inhibitors, ARNI, and vericiguat have significantly improved outcomes, yet challenges remain in ensuring access, affordability, and adherence, especially in resource-constrained settings.

## ADVANCES AND CHALLENGES OF PAEDIATRIC CARDIAC CARE IN INDIA

Introduction: Paediatric cardiac care (PCC) has observed stupendous growth and development in last few decades which has significantly improved outcome of congenital heart disease (CHD). As higher socio demographic index is shown to have lower mortalities and morbidities from CHD, only developed countries have been able to afford the best advanced care.

In India, over 200,000 infants born annually with CHD and approximately 70,000 would need any sort of cardiac intervention in first year of life. Most important but less recognised fact is that more than 30,000 baby born annually with critical heart disease which lead to death in neonatal period if not properly managed. Sadly less than 10% of these sick neonates receive appropriate treatment. It is really painful that even today the perception amongst parents and many doctors is that treatment of CHD is only a futile exercise and associated with gloomy outcome. But the reality is almost 85% CHD can be successfully treated by intervention and/or surgery or reasonably palliated with less than 5% mortality and morbidity and ultimately leading to good quality of life and long term results.

Advances in Paediatric cardiac care:

- **Diagnosis and Monitoring:** Fetal echocardiography has revolutionized the early detection and proper planning of termination of pregnancy (in case of very complex heart disease) or integrated treatment at appropriate time after birth. Other important advances are cardiac magnetic resonance imaging (cardiac MRI), 3D Echocardiography, 3D cardiac CT and virtual imaging. Genetic and metabolic diseases related to CHD has been more commonly diagnosed in recent decades.

Advances in monitoring includes continuous arterial blood gas analysis and mixed venous saturation, Continuous EEG and Near infrared spectroscopy (NIRS) monitoring.

- **Catheter intervention:** Challenging interventions in complex CHD patients has been possible due to advances of technology, availability of trained expertise and better anaesthetic and postoperative care. Most common interventions which has gained popularity is ASD, VSD, PDA device closure,



**Dr Kuntal Roy Chowdhuri**  
 MBBS, MS, MCH (CTVS), FICS, FACS  
 Fellowship, Cardiac surgery,  
 RCH, Melbourne, Australia  
 Paediatric and Adult Cardiac surgeon

- ductal stenting, coarctation stenting and Balloon pulmonary and aortic valvotomy.
- **Mechanical circulatory support devices:** Discovery of Extracorporeal membrane oxygenation [ECMO] has revolutionized management of post cardiac surgery cardiogenic shock. ECPR [ECMO assisted cardiopulmonary resuscitation] has become standard of management in most first world countries and impacted overall outcome positively. Likely, Ventricular assist devices [VAD] has been used for ventricular failure [due to cardiomyopathy or postoperative heart failure] as a destination therapy or more commonly as a bridge to heart transplantation..
- **Inhaled Nitric oxide (iNO):** Treatment of severe pulmonary hypertension (PHT) is a crucial part of PCC which includes administration of newer drugs, inhaled nitric oxide and ECMO.
- **Heart and lung transplant:** Definitive treatment of end stage cardiac or pulmonary disease is transplantation which have gained popularity due to good early and midterm outcome. Ex-vivo continuous coronary perfusion technology has

been able to surpass the problem of donor ischemia time even though not practiced everywhere due to financial constraint.

- **Miscellaneous:** Advanced monitoring of coagulation and anticoagulation, which is an integral part of PCC, has been possible due to newer technology (Thromboelastography). Similarly, achieving haemostasis and after complex surgery is not so difficult due to availability of different haemostatic agent and blood products. Hybrid palliation for hypoplastic left heart which consists of ductal stenting and bilateral pulmonary artery banding has become popular in many centers worldwide. Minimally invasive cardiac surgery in selected CHD patients is feasible and very attractive option. Other important developments in this field includes fetal intervention, genetic diagnosis and stem cell therapy.
- **Finance:** Most important hindrance for PCC is finance. Until recently, many patients with CHD remained untreated due to lack of affordability. PCC is seemingly not profit making due to multiple reasons and hence not attractive to majority of private sectors.
- **Resources and infrastructure:** Trained manpower and dedicated centers to deliver PCC has been lacking in India. However, number of trained manpower and centers related to PCC has increased substantially in last decade. Paradoxically, these centers are geographically maldistributed and some are not financially sustainable. It is a matter of great concern today that many of these trained doctors are not satisfied with their job profile and struggling for quality work and descent payment.
- **Late presentation :** Late presentation is very common in Indian context and results from delayed and missed diagnosis, late referral, ignorance and fear of treatment, financial problems and social stigma. Harmful effects of late presentation includes cardiogenic shock, severe pulmonary hypertension, severe cyanosis, polycythemia, stroke, brain abscess, cyanotic nephropathy and cyanotic cardiomyopathy. Deleterious consequences of late presentation is more pertinent in single ventricle patients and

sometimes it becomes inoperable or suffers from long term problems.

- **Malnutrition, Hygiene and Infection:** Most patients with CHD are severely malnourished which complicates the outcome profoundly. Poor hygiene, specially oral and dental hygiene is responsible for ventilator associated pneumonia and infective endocarditis in patients with or without CHD. Poor hygiene is also risk factor for rheumatic fever in children subsequently causing rheumatic heart diseases.
- **Lack of follow-up:** Follow-up in patients with treated or untreated CHD are very irregular and often complicates the disease outcome. Plausible causes are lack of knowledge, sociocultural misbelief and economic constrain.

#### Way Forward:

Early diagnosis is of crucial importance which can be attained by wide implementation of fetal echocardiography, pulse oximetry screening of newborn and training of primary health care assistants. Establishing PCC with government support rather than private is more beneficial considering financial constrain of most patients. Government should pay attractive salary to employ highly trained doctors related to this speciality. Budget for scheme patients need to be revised regularly considering cost of complexities and expertise to excel that care. Payment for preoperative treatment, postoperative complications and follow-up is actually non-existent which should be rectified. Although ethically challenging, one-time fix CHD should get preference over complex and possible multistage surgery considering the resource strapped situation. We can envisage that good leadership, strategic planning of healthcare, collaborative action and strict accountability of resource utilization will possibly accelerate the progress of PCC. We shall overcome someday!!!

## INFORMED CONSENT- Legal consideration

I would like to give brief introduction to the informed consent and its basic format as a procedure, with feature and responsibility of the doctors and patient as well. Informed consent requirement and its actual importance, legally can anybody fill this or not. Type of informed consent, about legal status and legal scenario, informed consent is not a mere do form, it is a procedure. Special conditions and circumstances and how doctors should react in such condition with their patients with that a brief view of conclusion.

### Informed consent:

Starting from the beginning, let's talk about what informed means, basically informed means having knowledge or information about something. In detail it turns out to be the required information to the person whom it is necessary, there should be a complete knowledge about the facts and information without any ambiguity.

Informed consent is a process with respect of which the patient learns about an actual procedure of the medical and surgical intervention as this includes everything such as clinical trials, and here patient understands the risk and benefits of the procedure of the treatment.

Informed consent is a normal and a starting process of giving all the information to the patients regarding everything. Basically, this is purposed so that the patients or the responsible whoever is so agreed to all the statements and try to figure out all the consequences from treatment. This is done by keeping the safety feature in the sight.

This informed consent process provides you with all the health care factors and gives you all the opinion regarding the treatment and procedural way to be cured.

Whereas, now we will discuss what this informed consent form contains and what is the responsibility of a patient.

### This information includes:

- The exact position of the patient.
- Treatment procedure and its name which is provided by the health care providers.
- Benefits and risk of the treatment procedure.
- If treatment is not given to the patient then what will be the consequences.
- Name of the person performing the procedure.



**Dr Pravir Kumar Das**  
Senior Consultant & Head Cardiac-anesthesia  
B M BIRLA Hospitals, Kolkata

- Alternatives of the procedure.
- Physicians Name, signature, Registration number of respective Medical Council, Date & Time should be mentioned.

### Responsibility of the patient:

The sign you have done on the basis of reading all the treatment procedure and you are agreeing to all the facts and the circumstances.

- Patient can ask questions and before that you must completely understand all the points of the information.
- You can further talk to the health care providers so that they can help you with the exact satisfaction and you may choose the whole treatment procedure or the one portion.

Whereas, if there is any query then the patient should consult to the health providers.

Informed consent is the main responsibility of the doctors to provide the required information to the patient and make sure that the information is correct to the point and this information should be provide in simple words without creating hectic words.

### Why informed consent is required?

The participant has to give their autonomy which implies the responsibility must be given to the individual to make the decision and give consents

related to their medical conditions. It is not only essential for the safety and the protection of the patient but also for the respect toward the bodily integrity right of the patient. The form signed is a legal document that shows the acceptance of a patient and agreement to the medical procedure specified by the healthcare providers. Once the consent form is signed it means that the patient has received all the relevant information about the procedure and agreed with their free will. This signifies that the healthcare provider can proceed with the treatment. If any participant denies to the treatment suggested by the doctors, then may not sign the form. Everyone has the right to refuse to the treatment if they are capable of taking decisions. The legal competent that is capable to make medical decisions have the legal and moral right to refuse any treatment.

#### **Can other person sign a consent form on the behalf of the patient?**

We need a surrogate consent in below mentioned scenarios.

#### **The following are such cases where another person can sign the consent form:**

- **Minor-** When the patient is a minor who is incapable of making decisions for their betterment. The parents or guardian of the minor can sign the form on their behalf.( In case of adolescence-(12 to 17 yrs)the kid needs to be counselled regarding the surgery & anaesthesia & its outcome.)
- **Advance Medical Directive** - In this case, the patient himself has directed the other person to make their future medical decisions. A form has to fill prior to giving consent which is called an advance directive. It will allow someone else to be consent on your behalf.
- **Cannot give consent-** when the person is incapable to give consent then the other can give the consent. These are the cases where the patient is in coma.

#### **Informed consent is a process not a mere form**

There are few requirements which should be considered in the informed consent document i.e. it should be in the simple and plain language which patient can understand & there should not be any use of hard words or ambiguity.

Moreover, this should not be treated as a formality, it should be taken as much as serious and the complete procedure should be followed by doctors and patient as well. There should be a proper management so that

it will become easy for everyone. To make it easy doctors can provide them counseling and this counseling procedure should be done in easy language, so that they can understand properly. Informed consent should be taken by the person performing the procedure or anyone from the team members( like Anaesthesia & surgery team).

#### **Legal Scenario of Informed Consent -**

There are instances where consent had been taken for the procedure, but while performing the procedure surgeon operated on another organ in good faith because of diseases nature( called PATERNALISM), which is not acceptable in court of law except in live saving circumstances.

#### **The following are the cases where the consent is required to be taken and if not then the legal actions will be taken:**

- **Right to Refusal-** the patient has the right to protect their body from any kind of interventions. If any patient has not given consent for the treatment then the doctors cannot perform the treatment on them and if they operate then it will be punishable. In Indian, the burden of proof lies on the doctor to justify their actions which would be illegal in the absence of consent. Indian courts may presume the consent to be implied but up to certain limits. Beyond that, the specific proof needs to be presented to the court.
- **Minor's consent-** the age of majority as 18 years in India. Therefore, the person below the age is minor and cannot give consent. The parental consent will be considered lawful.
- **Medical termination of Pregnancy-** In the minor or a lunatic( Mentally retarded person who can understand the nature of procedure, can give valid consent) for termination of pregnancy, the parental consent is required. The Medical Termination of Pregnancy Act, 1971 provisions ensures that no pregnancy shall be terminated without the consent of the women. The termination must be done only in good faith and in the benefit of a person's life.

#### **Doctors' duty towards the informed consent**

As the health and life is the most basic requirement of the human body so there should not be any risk related to the health status of a human body. In India, doctors are considered as equal to the god who are lifesavers for us and give us the ray of hope in the toughest time. There should not be lack of knowledge from their side

because it is considered that doctors are the one who always serve their patient in any situation and it is clearly visible by the recent example of coronavirus in the society.

Sometimes doctors forget about the informed consent document due to any of the reason such as not sufficient time, lack of their duty or due to any other reasons. So it is very important that doctors should perform their duty perfectly, there should not be any lacking point which can raise question on their profession. Health is the most preferred thing for a normal human being and if a doctor shows any point of carelessness towards it, this would be totally wrong. Throughout the whole treatment, a doctor should act

as responsible and should work with complete dedication.

**Conclusion** The rights of a person are determined through their human status. The responsibilities and importance of this consent must be ethical and genuine for the betterment of the participant. This paper involves a brief description of informed consent. The legal perspective, its importance and the requirement of the consent form is explained. The guidelines on informed consent in India should be based on complex factors such as diversity, culture, level of education and the demography.



CLOPITAB

Clopidogrel 75 mg, 150 mg



CLOPITAB-CV

Clopidogrel 75 mg + Aspirin 75 mg + Atorvastatin 10/20 mg



CV  
Gold



PLANEP

Eplerenone 25 mg Tablets

## PEDIATRIC INTENSIVE CARE UNIT-HISTORY, MYTHS AND FACTS

The PICU is a specialized unit of the hospital where the sickest pediatric patients are admitted.  
Who gets admitted to the PICU?

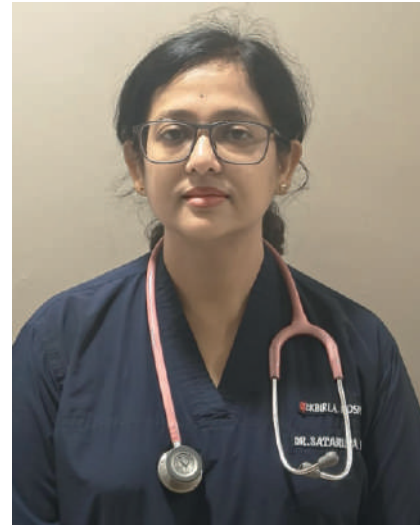
Any critically ill patient from newborn to young adult. Although most patients are under the age of eighteen, some with rare diseases may be slightly older. A PICU is typically directed by one or more pediatric [intensivists or PICU consultants and staffed by doctors, nurses, and respiratory therapists who are specially trained and experienced in pediatric intensive care](#). The unit may also have [nurse practitioners, physician assistants, physiotherapists, social workers](#) although this varies widely depending on geographic location.

Goran Haglund is credited with establishing the very first pediatric ICU in 1955; this PICU was located at Children's Hospital of Goteburg in Sweden.

Pediatric Intensive Care in India started in early 90s, almost simultaneously at 4 centres in north, south and West by individual efforts. The pioneering Institutions were PGIMER, Chandigarh (Dr Sunit Singh), Sir Ganga Ram Hospital, Delhi (Dr K Chugh), Hinduja Hospital, Mumbai (Dr. Soonu Udani) and Child Trust Hospital, Chennai, (Dr Suchitra Ranjit). The pioneers were trained and worked abroad and returned to India to set up PICUs. Soon the specialty became popular with the pediatricians and in 1996 there were already 21 centres offering pediatric Intensive Care.

Common reasons for admission to the PICU include:  
[Respiratory failure](#)

- due to pneumonia, sepsis needing additional support or [mechanical ventilation](#).
- [Acute respiratory distress syndrome](#) (ARDS) due to infection, burns, trauma etc.
- [Severe asthma exacerbation](#)
- [Apnea](#) due to poisoning, head trauma, brain infection etc.
- [Sepsis](#)
- [Shock](#)
- [Trauma](#) (including [non-accidental trauma](#))
- [Altered mental status](#)
- [Congenital heart defects](#)
- [Diabetic ketoacidosis](#) complications
- [Gastrointestinal perforations](#)



**Dr. Satarupa Mukherjee**  
MD, FNB (pediatric critical care),  
MRCPCH, Fellowship (UK)  
Consultant and PICU incharge,  
B. M. Birla Heart Hospital and  
CMRI Hospital, Kolkata

- [Cancer/ chemotherapy](#)
- [Organ transplants](#)
- [Prolonged seizures](#)
- [Poisoning](#)
- Other [life-threatening conditions](#)

### Common myths about PICU among common people: 1. Patient admitted to PICU is terminally ill and will definitely die

Parents are often of the misconception that children admitted to PICU are only those who are seriously ill and will pass away. Pediatric intensive care unit is for continuous monitoring of patient vitals. Any child who needs continuous monitoring of their blood pressure, oxygen saturation, urine output, heart rate needs to come to the PICU. Time to time monitoring will lead to the timely identification of any deterioration. Majority of them will recover and get discharged.

### 2. Patient on a ventilator will not survive

It's a common belief that children requiring a ventilator will not survive. There are two main indications of mechanical ventilation in any sick child-one is for supporting the child's breathing efforts when they are in respiratory distress and the second indication when the child has less respiratory efforts.

For example, when a child has severe pneumonia, he breaths fast and tires out. Ventilation is helpful to support the breathing efforts, give him rest and improve oxygen in the body. The second example is when a child has severe brain infection or has brain trauma such that his sensorium drops and he stops breathing. Mechanical ventilation acts as a temporary support to maintain oxygen levels in the body. In all these scenarios the patient often recovers with time and as soon as indicated he is liberated from the ventilator.

### 3. PICU is just ventilation and invasive procedures

People are often of the thought that PICU is only mechanical ventilation and invasive lines like central line, arterial lines, urinary catheters and drain. With the improvement in technology medical management of sick children has become more advanced. There are many non-invasive methods as non-invasive ventilation, High flow nasal cannula which often act as surrogate for respiratory support of sick children in the PICU. In PICU many invasive procedures are done under sedation and appropriate pain control where the child is made to sleep by medicines to alleviate pain.

### 4. In a PICU parents are not allowed

Parents are of the belief that if their child gets admitted to the PICU they will be separated from them. In a PICU parents are often involved in patient care as it has been associated with good outcome. Mothers are at times called in the PICU and asked to assist in care of children with chronic illness. Parental perspectives are often considered in decision making of serious illness care in the PICU.

### 5. Pediatric intensive care admissions are always associated with health care associated complications

Previously it was believed that any intensive care unit is associated with increased burden of health care associated complications as hospital acquired pneumonia, central line associated infections, catheter associated urinary tract infections, pressure ulcers, venous thrombo-embolism and so on. But there has been a paradigm shift from a more invasive approach to a less invasive and protective care for children in the PICU.

Setting up advanced pediatric intensive care units in India is of utmost priority for delivering quality care to our children.



[www.scri.org.in](http://www.scri.org.in)

**Scientific Clinical Laboratory Pvt. Ltd.**  
Late Prof. Dr. Subir Kumar Dutta

***Serving For Decades***



**NABL ACCREDITED LAB**  
since 2002  
MC - 2741



**ALL PATHOLOGICAL SERVICES ARE AVAILABLE**

- ▶ Histo/Cytopathology
- ▶ Clinical Pathology
- ▶ Biochemistry
- ▶ Immunoassay
- ▶ Microbiology & Serology
- ▶ Haematology

**FOR HOME COLLECTION CALL**  
033 22651098 / 033 22658309 / 7605803833

2, Ram Chandra Das Row, Kolkata - 700013    [scientificlab86@gmail.com](mailto:scientificlab86@gmail.com)

## FETAL ECHO

Different scientific research had shown that congenital heart disease can be present in 4 to 50 per 1000 live births. Among them 2.5-3 per 1000 presents with serious illness at newborn period or early infancy. By fetal echocardiography it is now possible to diagnose most of the congenital heart diseases in the early pregnancy period. Early detection of CHD helps in anticipating the cardiological complications which can occur soon after birth and helps to plan the mode and place of delivery. It also reduces the load of CHD by leading to therapeutic abortion for extreme complex CHD where life expectancy after birth is poor.

### How is it done?

Fetal echo is basically a transabdominal ultrasound exam but its sophistication demands high end machines. The small size and the high frequency of motion of a beating fetal heart require a high spatial and temporal resolution in ultrasound imaging platforms. Frame rates should be above 40 Hz and higher for visualizing finer structures and performing advanced techniques such as strain. In addition to typical image optimization techniques in pediatric echocardiograms, fetalechocardiography requires technical expertise to obtain the best imaging windows considering the continuous movement of the fetus relative to the maternal position.

### Who needs a fetal echo?

Had it been not a costly and limited test, the easiest way to say is that every pregnancy should have a fetal echo. However, due to its limitations, the current guidelines state that fetal echo is indicated in those cases where the chance of congenital heart disease in the fetus is more than 3% due to maternal or fetal condition.

### What is the timing of Fetal Echocardiography?

The best transabdominal window for fetal echo is at 18-22 weeks of gestation. In some situation even 1<sup>st</sup> trimester fetal echo is also done, however its sensitivity to detect heart disease is low. Serial fetal echocardiography is needed for some disorder like fetal arrhythmia, fetal cardiomyopathy and fetal heart block.



**Dr. Shyamajit Samaddar**  
Consultant – Paediatric Cardiology  
Attached with:  
NRS Medical College & Hospital  
B. M. Birla Heart Research Centre

### To Conclude:

Diagnosis and ongoing assessment of fetuses with cardiac disease by fetal echocardiography allows for multidisciplinary comprehensive care, counselling, and support. Fetal cardiac imaging allows us to optimize the perinatal and delivery plan for the fetus. In certain cases, with evolving disease, fetal cardiac imaging is critical to determining the timing and need for delivery and/or prenatal or postnatal intervention. Existing risk stratification systems in literature can facilitate coordination and communication of care plans. Additional techniques such as fetal MRI, and advanced echo techniques may provide additional prognostic information. This knowledge will further our efforts to provide accurate prognoses and timely care, which is of course the why which drives those of us who practice in this field.



**35**  
YEARS  
of Excellence in Cardiac Care



On this World Heart Day, I extend my heartfelt wishes to the Indian Medical Association and the entire medical fraternity across the nation. Clinicians stand at the very forefront of the fight against cardiovascular disease — leading efforts in prevention, early detection, advanced interventions, and long-term rehabilitation. Your knowledge, sound judgment, and unwavering dedication ensure that patients receive safe, timely, and effective care. Your leadership in raising clinical standards, driving research, and fostering innovation continues to strengthen the field of cardiology, while your guidance and mentorship prepare the next generation of medical professionals to carry this noble mission forward. As we observe this day of reflection and commitment, I take this opportunity to express deep gratitude for the countless hours of service, thoughtful decisions, and steadfast dedication that you bring to keeping the nation's heart healthy and strong.

**Supratik DeSarkar**  
Regional Head – BMB & RBH  
CK Birla Hospitals

[www.ckbirlahospitals.com/bmb](http://www.ckbirlahospitals.com/bmb)

Group Hospitals

**CMRI** **BMB** **RBH**  
KOLKATA KOLKATA JAIPUR

# YOUR HEALTH

Estd.1952  
only publication of  
The Indian Medical Association  
for the people in English  
GST No. 19AAATI0290G2ZR



**SEPTEMBER 2025**

Date of Publication  
2nd Sep 2025

R.N. I. No.2756/1964

Your Health

Sir Nilratan Sarcar IMA House  
53, Sir Nil Ratan Sircar Sarani,  
(Creek Row), Kolkata -700 014  
Tel:(033)2236-4200,

Email:yourhealthofima@gmail.com,  
yourhealthoffice@gmail.com



*Dedicated to bring Joy and Jubilation  
in peoples' Lives*



*With Best Compliments From*

**Bevon**<sup>®</sup>  
Capsules/Suspension/Drops

*True friend* for a healthy life

**Lobetron-0.5**<sup>™</sup>

Lobeglitazone Sulfate 0.5 mg Tablets

Smart **bet** for **better** outcomes

**Coralium-D<sub>3</sub>**<sup>™</sup>

Calcium Carbonate from Coral Grains  
(elemental calcium 500mg) + Vitamin D<sub>3</sub> 500 IU

Higher Calcium Utilization... **Guaranteed**

**Vitanova-D<sub>3</sub> MG**

Magnesium Bisglycinate equivalent to Magnesium 250 mg +  
Vitamin D<sub>3</sub> 600 IU Tablets

**Synergy** for **Magnified** effect

**Trelaglip**<sup>®</sup> **100**  
**50**  
**25**

Trelagliptin 100 / 50 / 25 mg

Tablets

Makes a Difference to QoL with **Compliance & Control**

**Eslo**<sup>®</sup> **-Tel**

S(-)Amlodipine 2.5mg/5mg + Telmisartan 40mg

For **360° Control & Protection**

**Feronia**<sup>®</sup> **-XT**

Ferrous Ascorbate equivalent to elemental iron 100mg + Folic Acid 1.5mg/Tablet **Tablets/Suspension**  
Ferrous Ascorbate equivalent to elemental iron 30mg/5ml Suspension

**Designed to Ensure Maximum Hb Rise**



Head Office: Zuventus House, Plot Y2, CTS No: 358/A2,  
Near Nahur Railway Station, Nahur (West), Mumbai - 400 078.

If undelivered please return to:  
Your Health  
Sir Nilratan Sircar IMA House  
53, Sir Nilratan Sircar Sarani,  
(Creek Row), Kolkata-700014, INDIA

Printed and Published by **Dr.Sankar Sengupta**  
on behalf of Indian Medical Association  
and Printed at Prabaha, 45, Raja Rammohan Sarani, Kolkata-700009.  
Published from Sir Nilratan Sircar IMA House, 53 Sir Nilratan Sircar Sarani,  
(Creek Row), Kolkata-700014, INDIA. Hony. Editor **Dr. Khwaja Alim Ahmed**