



# PROFESSORIAL LECTURE

**PROFESSOR DATIN DR.  
HAPIZAH MD. NAWAWI**

MD (UKM), DCP (Lond), MSc. (Lond), MRCPPath (UK), FRCPath (UK), FAMM (Mal)

***Familial Hypercholesterolaemia:  
A Predestined or Treatable Ticking Time Bomb?***

**22 January 2020 | 9:30 am**  
Auditorium 1, Faculty of Medicine,  
UiTM Sg. Buloh Campus



## DEAN'S FOREWORD

All praise be to Allah, the Lord of the entire universe that we are here today, gathered for the Professorial Lecture by Professor Datin Dr. Hapizah Mohd Nawawi.

It gives me great honour to introduce Professor Datin Dr. Hapizah, who has reached the pinnacle of her academic career both locally and internationally. Her pursue of excellence began early in her adulthood being the product of Tunku Kurshiah College. Upon graduating from the National University of Malaysia (UKM) in 1985 with Gold Medal Award, she began her career as a young medical doctor in the Ministry of Health. In 1990, Prof. Datin Hapizah joined the Faculty of Medicine, UKM as a trainee lecturer. She pursued her postgraduate training in Chemical Pathology at the Hammersmith Hospital, University of London from 1990 and obtained the Master of Science (MSc) in Clinical Biochemistry with Distinction in 1995. A year later in 1996, she obtained Membership of the Royal College of Pathologist (Chemical Pathology), United Kingdom (UK). Prof. Datin Hapizah was awarded Fellowship of the Royal College of Pathologist (Chemical Pathology), UK in 2004 and Fellowship of the Academy of Medicine, Malaysia (FAMM) in 2008.

Upon embarking on her academic career in UKM, research in lipid, atherosclerosis and Familial Hypercholesterolaemia has always been her passion. Prof. Datin Hapizah has published numerous scientific papers in these areas since her days in UKM. She was promoted to Associate Professor in 1999 and to Professor of Chemical Pathology in 2003 while she was in UKM.

In 2004, Prof. Dr. Datin Hapizah joined the Faculty of Medicine, Universiti Teknologi MARA (UiTM) as a Professor of Chemical Pathology. In the same year, she was appointed as the Deputy Dean for Research, Postgraduate and Quality until 2008, and was re-appointed to the same position from 2011 to 2012. She has also held various other administrative posts at the Faculty and University levels such as the Cluster Chair for Pathology and Medical Laboratory Sciences from 2010 to 2011 and Chairman for the Research Cluster for Health Sciences and Clinical Medicine from 2013 to 2014. Since 2014, Prof. Datin Hapizah has been appointed as the Director and Fellow of Institute of Pathology, Laboratory and Forensic Medicine (I-PPerForM), a research Centre of Excellence (CoE) for atherosclerosis.

Prof. Datin Hapizah's research works on lipid, atherosclerosis and Familial Hypercholesterolaemia have gained a remarkable reputation at the international level. To date, she has published 176 publications indexed in the Web of Science (WoS) database, with 2,097 citations and H-Index of 16 (WoS ReseracherID N-7446-2019). She is the National Lead Investigator for Malaysia for the EAS-FHSC Familial Hypercholesterolaemia (FH) Study Collaboration, an international research programme involving more than 63 countries across 6 continents worldwide, awarded by the European Society of Atherosclerosis (EAS). She is also the National Lead Investigator for Malaysia and a Steering Committee Member for the Asia-Pacific FH-10 Countries international research programme, awarded by the Asia Pacific Society of Atherosclerosis and Vascular Diseases (APSAVD) and the FH Australasian Network. Prof. Datin Hapizah has also been appointed as an Editorial Board Member of 'Atherosclerosis', an official journal of the EAS, a high impact international journal which is ranked as Q1 by the WoS Journal Citation Report. Apart from international research grants, Prof. Datin Hapizah is also the Principal Investigator of various other national grants such as the LRGs, TRGS, PRGS and FRGS. She is being invited to speak at numerous international as well as national conferences on a regular basis throughout her academic career. She has graduated numerous PhD and MSc students. Prof. Datin Hapizah has also won numerous research and innovation awards at the international and national levels. These include ITEX Gold Medal Awards in 2017 and 2019, and PECIPTA Gold Medal Award in 2019.

In summary, Prof. Datin Dr. Hapizah continues to inspire all of us, to strive for excellence and become the best that we can be. May her work and all the good deeds continue to benefit the mankind and be counted in the hereafter. All praise be to Allah, the Lord of the entire universe.

**Professor Dr. Mohd. Zamrin Dimon,**  
Dean, Faculty of Medicine,  
UiTM

## **BIOGRAPHY**

Datin Dr Hapizah Md. Nawawi, a Professor and Senior Consultant in Chemical Pathology and Metabolic Medicine, Faculty of Medicine, Universiti Teknologi MARA, Malaysia, is Founding Director of I-PPerForM, one of UiTM Centres of Excellence, with niches areas in Atherosclerosis and coronary heart disease (CHD) prevention. She pioneered and is the Consultant Physician-in-charge of the Specialist Lipids and Coronary Risk Prevention Clinics; a founding member of UiTM Faculty of Medicine in 2004, which within <10years has grown into the biggest public Medical School in Malaysia.

Her research interest is in dyslipidaemias including molecular basis of FH, atherosclerosis, novel biomarkers, and CHD prevention. She acquired numerous national, industrial and international research grants (MYR7.6million over 20years), ranging from fundamental in-vitro molecular to in-vivo animal and human studies, clinical trials and epidemiological studies. She is PI of several national FH projects, pioneered the Malaysian National FH Registry and genetic laboratory; Country Lead Investigator for two international FH research programmes, putting Malaysia on the world map: the EAS-FHSC (European-Atherosclerosis-Society FH-Study Collaboration) involving 70 countries globally, and the FH-10Countries programme, involving the Asia Pacific region. She has published 140 full papers, 486 abstracts in journals/proceedings, 15 books/chapters in books; with over 1111/1820 citations, and h-index of 16/15 (Scopus and WoS respectively). To date she has graduated/supervising a total of 58postgraduates, including 30PhDs/PhD equivalents, in addition to 2post-Docs.

She is a Fellow of the UK Royal College of Pathologists and Malaysian Academy of Medicine, Executive Council Member of APSAVD, Editorial Board Member of Atherosclerosis, a high impact JCRQ1 journal; Steering Committee Member for Academy of Science TRSM; Committee Member of the National Specialists' Registry.

## PREFACE

I am deeply humbled by the great honour and privilege for the opportunity to deliver my inaugural Professorial Lecture. It gives me a great pleasure and satisfaction to document and share highlights of my research findings, and my research journey as an academician and clinician-scientist for almost 30 years. Indeed, there are so much to document and share but for this special book in conjunction with my Professorial Lecture, I choose to write on 'Familial Hypercholesterolaemia (FH): A predestined or a preventable ticking time bomb?'. The other aspects of my research have, in part been shared in my other 15 books/chapter in book.

FH is the commonest and serious, but potentially treatable form of inherited dyslipidaemias, with autosomal dominant mode of inheritance of high penetrance, characterised by severe hypercholesterolaemia, and increased risk for premature coronary heart disease (pCHD). FH has been identified as an important cause of pCHD, and is now recognised as an important public health problem. In Malaysia, pCHD prevalence is increasing rapidly, accounting for 10-15% of acute coronary syndromes (ACS), and 16% of patients undergoing PCI (percutaneous coronary intervention), with a younger age of onset compared to neighbouring countries and the western population. Clinically diagnosed FH have been found in up to a third of pCHD patients.

Global prevalence of heterozygous FH is estimated at 1:200, an estimated 34 million affected individuals, majority (>50%) of whom reside in South-east Asia and Western Pacific regions. With an estimated Malaysian population of 32 million, it is projected that 160,000 individuals are affected. A recent international report revealed a 1:100 prevalence of clinically diagnosed FH in Malaysia, which is one of the highest in the world, with an estimated 320,000 affected individuals.

FH meets all the WHO criteria for screening a condition, and is treatable with various existing and newer lipid lowering therapies, leading to substantial reduction in pCHD. Majority of FH individuals remain both underdiagnosed and undertreated, with <1% being diagnosed in most countries, resulting in lost opportunities for pCHD prevention. Cascade screening enables early diagnosis and evidence-based interventions which decrease CHD risk, improves health, saves lives and health expenditure. Effectiveness of the detection and treatment of FH is abundantly supported by the outcome of several international cohort studies.

In addition, for any given LDL-c concentration, the presence of a pathogenic FH gene variant, substantially increases the risk of pCHD. Genetic testing for FH improves diagnosis, treatment initiation and adherence, enables cascade testing, assists risk prediction, and justify use of newer expensive medications. Rapidly advancing technology may enhance the use and wider application of genetic testing in FH, but the cost-effectiveness, patient preferences and health care professional training in genomic medicine remain key issues that need to be addressed. Therefore, enhancing strategies and multi-disciplinary concerted effort in early detection, treatment and pCHD prevention in FH is warranted in Malaysia and globally.

This book which covers various aspects of FH, ranging from epidemiology, pathophysiology, diagnostic criteria, screening and genetic testing, clinical aspects to comprehensive healthcare, is written in the spirit of recent updates and sharing some of my research findings for about 3 decades of my academic journey in University of London, UKM and UiTM. I wrote this book within 3 months, in my passion and aspiration to inspire and motivate my patients, and fellow seekers of knowledge especially my younger colleagues including students, post-docs, trainees, and research team members. May this book pose as a nidus for escalating excellence in future FH and FH-related research, training and patient management, for the benefit of mankind.

**Hapizah Md. Nawawi**

**1 January 2020/ 5 Jamadil Awal 1441**

## PROGRAMME

9.30am	Arrival of Guest / Registration
9.45am	Professorial March Negaraku & Wawasan Setia Warga UiTM Doa Recital
10.00am	Dean's Speech & Introduction of Y.Bhg Prof Datin Dr Hapizah Md Nawawi Video Presentation Professorial Lecture on Familial Hypercholesterolaemia: A Predestined Or Treatable Ticking Time Bomb? Presentation on token of appreciation
11.15am	Photo session
11.30am	Viewing of exhibition
12.00pm	Refreshment

## ORGANISING COMMITTEE

Chairman	Prof. Dr. Habinderhjeet Singh
Deputy Chairman	Prof. Dr. Musalmah Mazlan
Event Manager	En. Mohd Hafiz Anuar
Asst Event Manager	Pn. Nursafura Idayu Suhaimi
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Treasury	Nurrein Marlia Omar
Invitation / Registration	Sazwan Shamsuddin
	- En. Ku Izani Ku Yusoff
	- Puan Ana Suhah Baharuddin
	- Puan Wan Anida Wahid
	- En. Mohd Zaim Bahar
	- Nurul Syuriani Kamalun Baharin
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Protocol & Special Task:	Pn. Rozalina Rokli
	- En. Mohd Shahizan Jamil
	- Tuan Khairul Azman Abu Bakar
	- En. Farizul Naba Esmat
Facility & Audio Visual	- En. Masrani Othman
	- En. Shahrilfizan Ahmad Tajuddin
	- En. Mohd Erwan Ramli
	- En. Sharizam Kamarudin
Souvenir	Cik Hafidah Basaruddin
Exhibition	Pn. Natasha Ahmad Kamal
	Dr. Nurul 'Ain Abu Bakar
	Puan Nurhanini Mohd Noor
Photographer	En. Mohd Ridzuan Hussin
Text / Speech	Prof Dr. Anis Safura Ramli
Emcee	Dr Jamal Houssaini