Medicine: an Ancient Industry Aided by Advanced Technology
Prior Studies Lead to New Findings

We study the past to understand the present; we understand the present to guide the future.
About Professor Chao-Ching Huang, MD

Professor Chao-Ching Huang is the Dean of the College of Medicine, Taipei Medical University and an attending physician at the Division of Pediatric Neurology (from 2013 to present). He also is an Adjunct Professor at the Department of Pediatrics, National Taiwan University, College of Medicine, Taipei, Taiwan (from 2001 to present).

The prior positions he has served include resident and attending physician at the Department of Pediatrics, Mackay Memorial Hospital, Taipei Taiwan (1980-1988); research fellow at the Department of Physiology, School of Medicine, University of Pennsylvania, Philadelphia, USA (1992-1993); professor (1998-2003) and distinguished professor (from 2003 to present) at National Cheng Kung University; chairperson at the Graduate Institute of Clinical Medicine, National Cheng Kung University Hospital, Tainan, Taiwan, and director at the Research Center of Clinical Medicine, National Cheng Kung University Hospital, Tainan, Taiwan (2005-2011). To date, he has published more than 165 papers including three papers in the New England Journal of Medicine and has been honoured with numerous awards, namely, Formosa Academic Lecture Award (2006); Paper of the Year, College of Medicine, National Cheng Kung University, Tainan, Taiwan (1999, 2001, 2003); Outstanding Research Award, National Science Council, Taiwan (2000, 2002) and Award of Taiwan Pediatric Association (2001).

All publications have now been converted into digital format, the resources in libraries are enriched and more complete. In this information-led era, medical researchers particularly need to make sure that they cite and use correct and complete information. For an ancient industry like medicine that is now aided by high-tech industry, it is necessary to guide new findings based on prior studies.
Professor Huang specialises in the research of hypoxic-ischemic brain injury in term infants, periventricular leukomalacia in premature infants, febrile convulsions, and CNS infections in children. He believes that current research requires an understanding of related research rationales and arguments in earlier publications. The way he conducts research is unique. First, he forms hypothesis-driven research questions derived from keen clinical observation. He would search for publications with keywords and produce a list of articles to decide the strengths and weaknesses of these studies.

From the abstracts of these articles, he would outline the design of the experiments. Then he would select the earlier publications that he needs to study comprehensively so that he could analyse the data, understand the outcome and obtain complete information from his reading; this is the way for him to get a general picture of how the importance of his research would be. Since all publications have now been converted into digital format, the resources in libraries are enriched and more complete. In this information-led era, medical researchers particularly need to make sure that they cite and use correct and complete information. For an ancient industry like medicine that is now aided by high-tech industry, it is necessary to guide new findings based on prior studies.

Past researchers are still getting a lot of attention from modern researchers

Among the international authors, the one most frequently cited by Professor Huang in his publications is Professor Hendrik Hagberg, a Swedish obstetrician whose research focuses on experimental brain injury study and perinatal medicine. He holds the position of Research Chair in Fetal Medicine at the Centre for the Developing Brain, King’s College London, and is one of the world’s most highly-cited researchers in the field of perinatal brain injury. The article he published in 1985 titled Ischemia-induced shift of inhibitory and excitatory amino acids from intra-to extracellular compartments is his most frequently cited publication, with citations still ongoing till this date.

Let’s take the highly-cited paper Neurologic complications in children with enterovirus 71 infection published by Professor Huang in 1999 as an example. Despite the fact that it was published 17 years ago, the paper has been cited an average of more than 30 times annually for the past 5 years. This proves that high-quality papers will continue to be cited no matter how long ago they were first published.

Professor Huang also admires Joseph J. Volpe, a pioneer, expert in neonatal neurology and the Bronson Crother Professor of Neurology at Harvard Medical School.

He sole-authored a well-known book in 1981 titled Neurology of the Newborn, which was published by Elsevier and is now in its fifth edition. The book combines knowledge, experience, and research accomplishments and demonstrates the deep understanding that the author has for neonatal neurology. For a clinician, this bible-like book will come in handy when dealing with a newborn infant who has a neurological disorder. This is why understanding prior research arguments and findings lay the stepping stone for future disease research and development.

Dr Huang believes that modern medicine demonstrates a slow shift in the human disease investigation towards both ends of the human life spectrum. Studies have been devoted to gerontology and fetology, for example. There is still more that remains unknown and hence requires further investigation by more researchers. In order to have a deep understanding of contemporary research and experiment environment and basis of theories, keeping track of earlier publications is the key. Knowing the past helps predict the future, create new perspectives and assumptions, and develop more and newer solutions for humankind.

High-quality Elsevier Journals and Embase – system review database and Pure Experts System

Professor Huang speaks highly of Elsevier and its easy-to-use platforms. The Taipei Medical University Medical System, in particular, combines resources from three affiliated hospitals, namely Taipei Medical University Hospital, Taipei Medical University Wan-Fang Hospital, and Taipei Medical University Shuang Ho Hospital. With improved medical care quality and commitment to research and innovation as its goals, the university strives to be a top-notch international medical centre. In terms of research and development, the College of Medicine emphasises collaboration between different disciplines which include clinicians, and researchers in public health, basic sciences, drug discovery, biotechnology, and of nanomedicine. With sufficient and effective use of resources throughout the College of Medicine, both professors and students are provided with an optimally diversified research and learning environment that helps consolidate international exchange and cultivate leaders in the future of medicine. In order to accomplish the said goals, Taipei Medical University uses Embase to ensure accuracy in searching for evidence-based medical materials. The Pure Experts System is used throughout the university (https://tmu.pure.elsevier.com) so that the expertise of researchers at Taipei Medical University can be integrated into the academic network that links related researchers around the world, thereby facilitating the search for potential partners and the achievement of globalisation of the university.

1Source: https://kclpure.kcl.ac.uk/portal/henrik.hagberg.html
2Bronson Crother: American pediatric neurologist, born on July 10, 1884, in Elmira, New York, USA and died on July 17, 1959 in Sorrento, Maine. He was a leader in public policy issues relating to children with disabilities.
3Source: https://elsevier.ca/product.jsp?isbn=9781416039952