

# THE PULSE OF ASIA IN 2010 – AUSTRALIAN PERSPECTIVE

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The expanding areas of basic and applied research on the arterial pulse is a testimony to the Australian legacy of the seminal work in arterial hemodynamics commenced by Michael Taylor over 5 decades ago and continued and sustained by Michael O'Rourke. This work on pulsatile function of arteries and pulse wave propagation forms the basis of the underlying principles of much of the research that has resulted in fundamental advances in placing pulse wave velocity and pulse wave analysis (PWA) as significant methodologies for cardiovascular assessment. The culmination of this has been the SphygmoCor device, developed and manufactured in Australia. This was the first device with regulatory approval for non-invasive estimation of central aortic blood pressure (cBP) from the radial pulse wave, the traditional site of palpation of the arterial pulse. Of all devices used globally, some 12% are currently used in Australia, with the majority being deployed in cardiology units. Other areas include renal and obstetric units, pre-eclampsia monitoring, exercise physiology, diabetes, rheumatology, health wellness centres and primary care. With recognition that cBP offers increased sensitivity for cardiovascular risk assessment and stratification, research is developing in some Australian university centres to address specific applications. PWA is combined with other hemodynamic methodologies such as transcranial doppler flow velocity for improved estimation of intracranial cerebrospinal fluid pressure and parameters of regulation of cerebral blood flow such as vascular compliance, resistance and critical closing pressure. Australian centres are also evaluating intervention strategies using cBP as a target for therapy.