Commentary

Making Clinical Practice Guidelines Pragmatic: How Big Data and Real World Evidence Can Close the Gap

Si Yuan Chew, [1] *MBBS, MRCP*, Mariko S Koh, [1,2] *MBBS, MRCP*, Chian Min Loo, [1,2] *MBBS, MRCP*, Julian Thumboo, [3,4,5,6] *MBBS, FRCP, FAMS*, Sumitra Shantakumar, [2,7] *PhD, MPH*, David B Matchar, [3] *MD, FACP, FAMS*

Abstract

Clinical practice guidelines (CPGs) have become ubiquitous in every field of medicine today but there has been limited success in implementation and improvement in health outcomes. Guidelines are largely based on the results of traditional randomised controlled trials (RCTs) which adopt a highly selective process to maximise the intervention's chance of demonstrating efficacy thus having high internal validity but lacking external validity. Therefore, guidelines based on these RCTs often suffer from a gap between trial efficacy and real world effectiveness and is one of the common reasons contributing to poor guideline adherence by physicians. "Real World Evidence" (RWE) can complement RCTs in CPG development. RWE—in the form of data from integrated electronic health records—represents the vast and varied collective experience of frontline doctors and patients. RWE has the potential to fill the gap in current guidelines by balancing information about whether a test or treatment works (efficacy) with data on how it works in real world practice (effectiveness). RWE can also advance the agenda of precision medicine in everyday practice by engaging frontline stakeholders in pragmatic biomarker studies. This will enable guideline developers to more precisely determine not only whether a clinical test or treatment is recommended, but for whom and when. Singapore is well positioned to ride the big data and RWE wave as we have the advantages of high digital interconnectivity, an integrated National Electronic Health Record (NEHR), and governmental support in the form of the Smart Nation initiative.

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[1]Department of Respiratory and Critical Care Medicine, Singapore General Hospital, Singapore
[2]Duke-NUS Medical School, Singapore
[3]Programme in Health Services and Systems Research, Duke-NUS Medical School, Singapore
[4]Health Services Research Centre, Singapore Health Services, Singapore
[5]Department of Rheumatology and Immunology, Singapore General Hospital, Singapore
[6]SingHealth Regional Health System, Singapore Health Services, Singapore
[7]Research & Development, Real World Evidence and Epidemiology, GlaxoSmithKline, Singapore
Address for Correspondence: Dr Mariko S Koh, Department of Respiratory and Critical Care Medicine, Academia Level 3, Singapore General Hospital, Outram Road, Singapore 169608.
Email: mariko.koh.s.y@singhealth.com.sg