Aminu K Bello, MD,PhD
Medicine/Nephrology
Supervisor: Dr. Marcello Tonelli

I qualified as MD in Nigeria and underwent specialist clinical training in internal medicine and nephrology in Nigeria, UK and Canada. I obtained the Membership of the Royal College of Physicians (MRCP), Masters (with Distinction) and PhD degrees in Nephrology/Epidemiology at the University of Sheffield in the UK. I have been involved with Chronic Kidney Disease (CKD) research during my Masters/PhD program at the University of Sheffield. This has so far lead to 31 publications, 30 conference presentations and co-authorship of 4 book chapters in Clinical Nephrology. My long-term career goal is to become a clinician-scientist with expertise in CKD epidemiology. In pursuit of this goal, I took up a Fellowship position at the University of Alberta for my postdoctoral and specialist clinical training under the supervision of one of the World leaders in Clinical Nephrology Research- Dr Marcello Tonelli. I strongly believe that the unique training program afforded me at the University of Alberta together with my past accomplishments will help me achieve my career objectives.

Clinical research in CKD at the University of Alberta is done under the auspices of the Kidney Health Research Group (KHRG). Dr Marcello Tonelli is the Director of the KHRG, which is a collaborative association between independent nephrologist clinician-investigators with clinical and research expertise in chronic non-communicable diseases. KHRG faculty members collectively have expertise in systematic review, meta-analysis, biostatistics, bioinformatics, epidemiological analysis, economic analysis, and geographic information systems analysis and health policy, making the KHRG a very conducive research environment and centre of excellence in health outcomes research. The KHRG team also includes key collaborators from the Alberta Kidney Disease Network (AKDN) which is a provincial organization focusing on the study of CKD and other chronic non-communicable diseases. Dr. Tonelli and two other founding members of the Network are co-leaders of a $5M multidisciplinary research team grant from the Alberta Heritage Foundation for Medical Research (AHFMR) that includes researchers with diverse expertise from institutions across Canada.

This rich research environment has given me the opportunity to pursue a multi-pillar research guided by an excellent mentor/supervisor. I have undertaken a number of research projects to advance knowledge and facilitate understanding of vascular risk reduction and optimal CKD care in Canadian communities and globally. The specific study leading to this award examined the impact of combining kidney function as measured using estimated glomerular filtration rate (eGFR) and proteinuria to predict a range of clinically relevant cardiovascular events in a general population setting. In this study, we have shown an important association between reduced kidney function (assessed by eGFR), proteinuria, and adverse outcomes, including risk of having interventional procedures to treat heart disease, debilitating heart failure, stroke and limb amputations related to blood vessel diseases using data from a province-wide laboratory registry in Alberta, that included eGFR and proteinuria measurements for 2002 to 2007. The study

involved 920,985 adults who had at least 1 outpatient serum creatinine measurement and who did not require renal replacement treatment (dialysis or transplant) at the beginning of the study.

Specifically, we have found that the risks of major cardiovascular events (including heart disease and failure, stroke and limb amputations related to blood vessel diseases) at a given level of eGFR increased with higher levels of proteinuria. We have shown that proteinuria though simple and cheap to measure is of incremental prognostic benefits at every level of eGFR for adverse outcomes. The practice implication for these findings is that the presence or absence of proteinuria in all stages of CKD can help to refine estimates of risk that are based on eGFR alone -- as recommended by existing practice guidelines. These data provide evidence that proteinuria can be used to stratify patients for their individual risk of cardiovascular events in ambulatory clinical settings, and provides support for modifying practice guidelines accordingly. Additionally, this is important information for Health Care Decision Makers -- which may help to develop primary care-based strategies for prevention of cardiovascular disease among individuals with CKD. Therefore, these findings will potentially impact clinical care, practice guidelines, and health care policy.