



Burden, Spectrum and Aetiology of Type 2 Diabetes in sub-Saharan Africa

Principal Applicant:

Albert G.B. Amoah (AA), National Diabetes Management and Research Centre, University of Ghana Med. School, Korle Bu Teaching Hospital. Accra. **Ghana**

Co-PIs:

- **Moffat Nyirenda (MN)**, Malawi-Liverpool-Wellcome Trust, Blantyre, **Malawi**
- **Eugene Sobngwi (ES)**, Health of Populations in Transition Research Group, **Cameroon.**

Co-applicants:

- **Clement A Adebamowo (CA)**, Institute of Human Virology, **Nigeria**
- **Pontiano Kaleebu (PK)**, Medical Research Council, Entebbe, **Uganda**
- **Saidi Kapiga (SK)**, National Institute for Medical Research, **Tanzania**
- **Naomi S Levitt (NL)**, Div. of Diabetic Medicine and Endocrinology, Cape Town, **RSA**
- **Ayesha A Motala (AM)**, Dept. of Diabetes and Endocrinol., Univ. Kwazulu Natal, **RSA.**
- **Charles N Rotimi (CR)**, Centre for Research on Genomics and Global Health, NIH, **USA,**
- **Manjinder Sandhu (MS)**, Wellcome Trust Sanger Institute, Hinxton, **UK**

AFRICAN PARTNERSHIP FOR CHRONIC DISEASE RESEARCH GROUP (APCDR)



Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: APCDR Partners

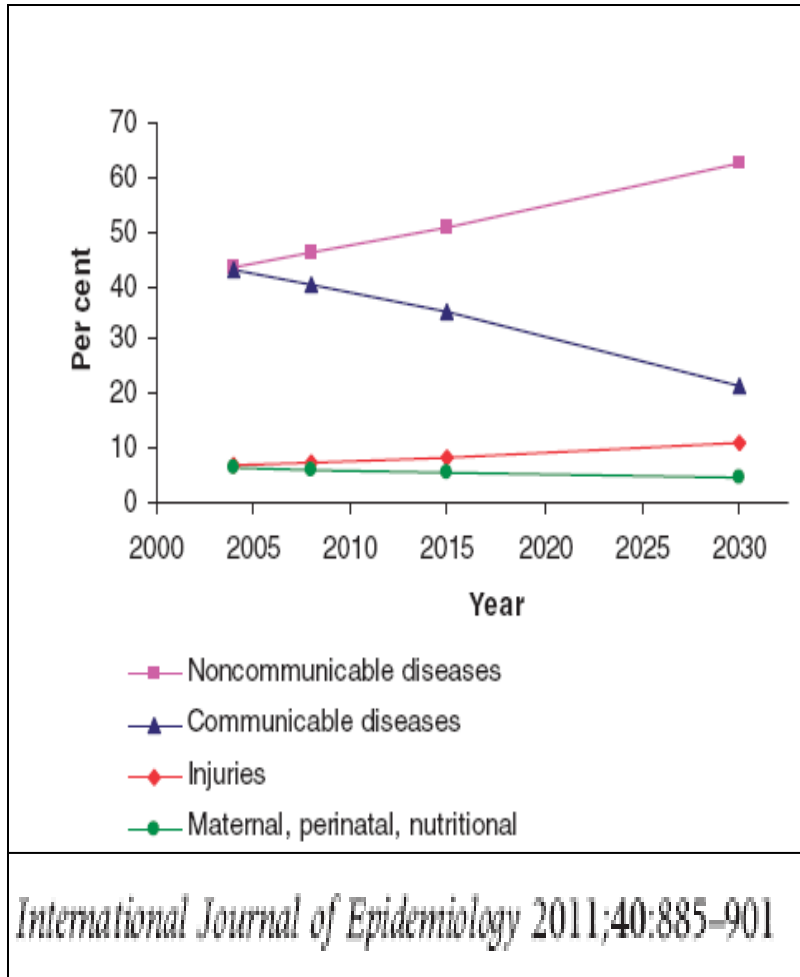
A. 9 Countries in Sub-Saharan Africa with 11 Centres:

- Cameroon
- Gambia
- Guinea
- Ghana
- Malawi
- Nigeria: 2 Centres
- South Africa: 2 Centres
- Tanzania
- Uganda and

B. 4 Institutions from the North: UK (LSHTM, WTSI/UC, UO), USA (NIH)



Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: Background



- T2DM on the rise in Sub Saharan Africa (SSA)
- From 12 million in 2010 to 24 million in 2030
- People of African descent appear to have greater risk for T2DM and complications



Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: Background

- Genomic capacity for NCD research poorly developed in SSA
- Relevance of recent genomic findings in T2DM to populations in SSA not known
- Aetiological and Genetic Factors of T2DM and complications remain to be studied in a systematic manner across SSA
- Limitation: a well phenotyped T2DM cohort for large-scale genomic study



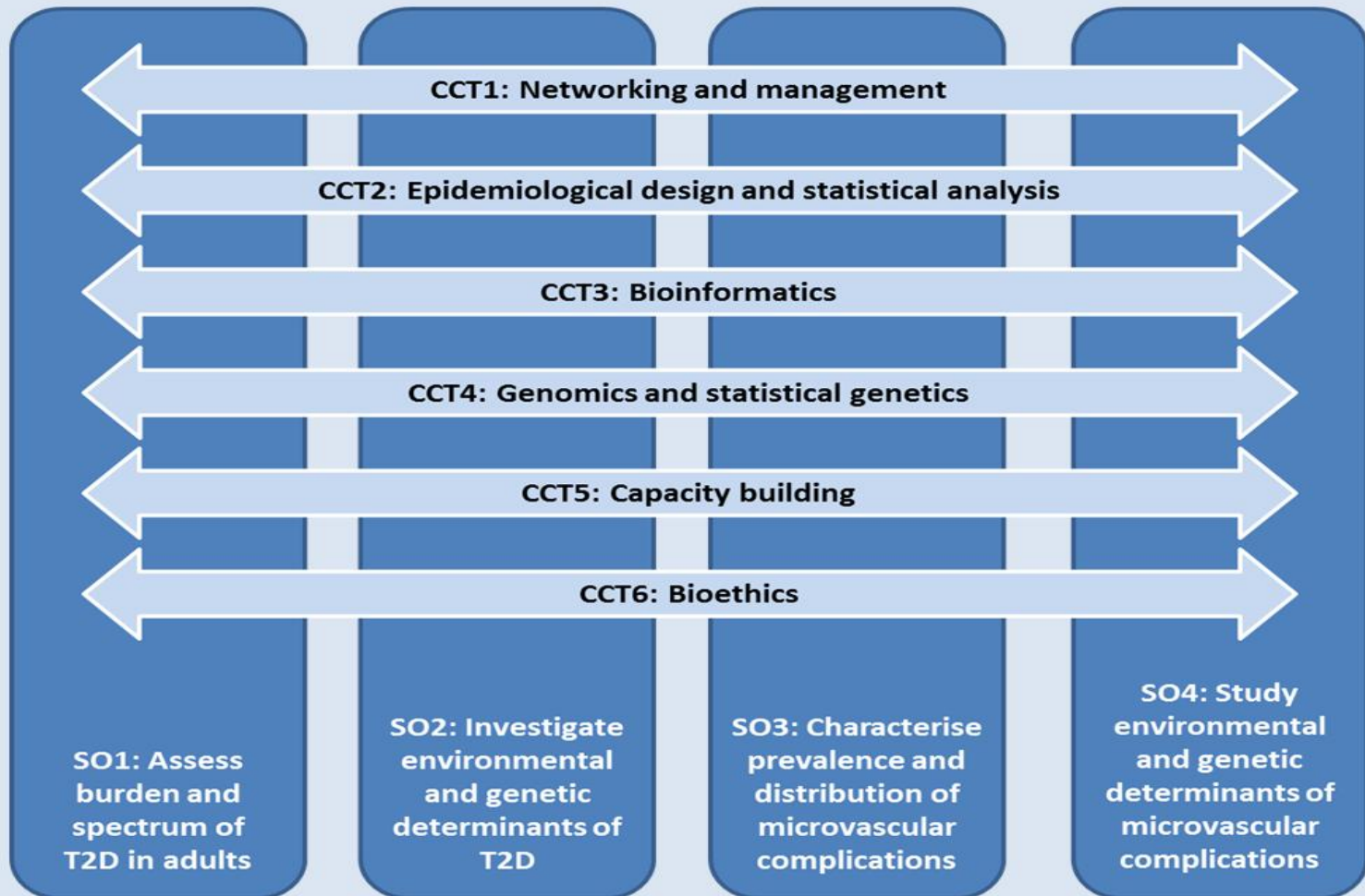
Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: Objectives

1. Assess the burden and spectrum of T2D in SSA.
2. Determine the Environmental and Genetic Determinants of T2D
3. Assess the Occurrence of microvascular complications of T2D (MVCD)
4. Study the environmental and genetic determinants of MVCD



Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: CC Themes

Panel 2. Schematic of the scientific objectives and cross-cutting themes





Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: Procedures

1. 12,000 cases of T2DM:
12,000 Control Subjects
 - Case-series
 - Population based cross-sectional studies
2. Genetic Studies:
 - Sequencing of known T2DM regions
 - Genome-wide genotyping arrays and
 - Whole exome/genome sequencing



Capacity Building

Clinical Research
Epidemiology
including genetic
epidemiology

Genomic Science
Laboratory Methods

Bioinformatics
Biostatistics
including
Statistical
Genetics

Bioethics:
Research
Methodology

Grant
Administration

Career Development

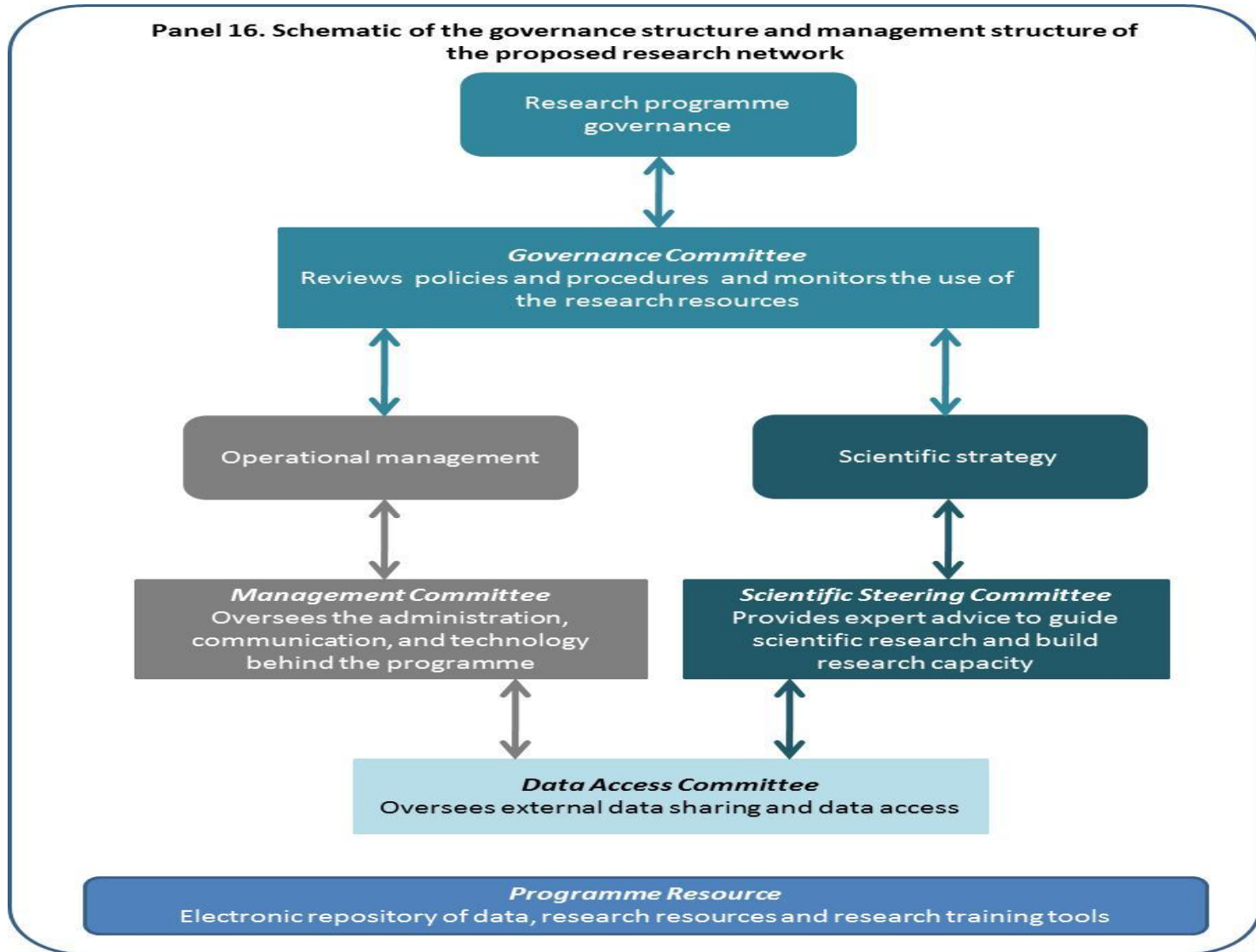
Leadership Training:
Short Courses
Short Attachments
Masters
Doctorates

Infrastructure

Network
Equipment
Software



Burden, Spectrum and Aetiology of Type 2 Diabetes in SSA: Governance





Thank You