



## Precision Medicine in Africa

## Two critical Decision of the April 2015 STC on Health Population and Drug Control

- Review of the African Health Strategy (2007-2015) - provided an opportunity relook at the health research section (continental position paper on health research in Africa)
- Research and innovation should be integrated into the revised AHS strategy with technical support from the NEPAD Agency and other interested parties

## Pillar 6 (AHS 2007-2015): Health Information and Research

- Recognizes the role of Health Research in providing evidence for policy- and decision-making at all levels
- Emphasizes the direction given on health research and responding to challenges by the Abuja and Accra High Level Ministerial Meetings on Health Research.
- Emphasizes the need for content of research to go beyond determining prevalence to explore:
  - social and psychological factors are behind health choices
  - factors leading to success of interventions
- Provided for the development of a **continental position paper on health research in Africa**

# Strategic Approaches : AHS 2016-2030- Health research and innovation

- There is need to institutionalize mechanisms for defining, producing and utilizing African research in ways that can transform the health sector as well as the African economy and society as a whole. Achieving health goals and targets requires matched investment in research and innovation in order to improve access to medical technologies and products. Furthermore, data from health research and innovation must be collected and analyzed to inform policy and decision-making at all levels of the healthcare system. Member States should encourage locally driven and financed research through the empowerment of local research institutions, setting up of innovation hubs and allocation 1% of the national GDP for research and innovative as envisioned in the Science, Technology and Innovation Strategy for Africa 2014 - 2024. Building regional expertise in research should be supported where it offers more returns through strengthening regional research centres, building research networks and sharing results across countries.

# Framework for the Implementation of Genomic Medicine for Public Health in Africa in collaboration with Africa Academy of Sciences

- Second initiative of the AUDA-NEPAD is the development of Framework for the Implementation of Genomic Medicine for Public Health in Africa in collaboration with Africa Academy of Sciences
- “Precision Medicine” describes the use of specific information about an individual to facilitate a more precise approach to their healthcare. The term is very broad with wide reaching approaches and implementations. One of the more specific approaches is genomic medicine, where knowledge about a person or population’s genetic makeup can be used to derive the most appropriate diagnosis, treatment and, where possible, disease prevention strategy. Genomic medicine has been applied to a number of areas of healthcare, including perinatal testing and newborn screening for monogenic diseases, cancer screening and treatment, rare disease diagnosis and treatment, pharmacogenomics and sequencing of pathogen genomes. However, most of these activities have been restricted to developed countries.

# Framework..

- . Some of the key barriers to the implementation of genomic medicine world-wide, but more pronounced in developing countries include clinical and data infrastructure, regulatory environments, integration of new technologies into clinical practice, and cost. Knowledge and evidence generation are also essential elements which are constantly evolving as new genomes are sequenced and genome wide association studies are undertaken. In Africa, due to under-representation of African populations in such studies, knowledge and evidence for actionability on genomics data are lagging behind the developed world. This, along with poorer resources and infrastructure limitations, mean that African countries need to overcome greater barriers to implement genomic medicine, but this is by no means an impossible task, challenges can be addressed in a stepwise manner.

# Framework...

- The aim of the Framework for the Implementation of Genomic Medicine for Public Health in Africa is to highlight these elements within the African context and provide some recommendations on how African countries can work on putting them in place by building on existing infrastructure. This will enable resource limited countries to start implementing appropriate genomics-based health-related interventions, drawing on experiences from elsewhere, but adapting to the African context where necessary. The document is written by volunteers, who are not necessarily experts in genomic or precision medicine but have a variety of data, science and clinical backgrounds. It is not aiming to be prescriptive or comprehensive, but rather to provide some information and recommendations to enable the implementation of genomic medicine. The document focuses on the clinical context, while indicating barriers to implementation (situational and needs), which includes additional research that is required for knowledge and evidence generation.

# Elements of the Framework..

- **Clinical facilities for patient counselling, screening, treatment and monitoring**
- **Sample collection, processing and data generation facilities**
- **Data storage, curation, analysis, interpretation and sharing infrastructure**
- **Knowledge bases with up to date information on genotype-phenotype link and actionability**
- **Research facilities to increase knowledge on genomics in African populations**
- **Genomic medicine training programmes for healthcare professionals**
- **Regulatory, data governance and ethics consent processes governing all the above activities**

The framework has made key recommendations for each of these elements. Document developed by AAS, AUDA-NEPAD and the Alliance for Accelerating Excellence in Science in Africa (AESA)

# Thank You!