

POSITION PAPER ON HEALTH AND WELLNESS

January 2024

1. EXECUTIVE SUMMARY

The Mauritian healthcare system is under significant pressure caused by various reasons such as the growing burden of Non-Communicable Diseases (NCDs), the complex health needs of the ageing population, the growth of personalized medicine and rising expectations of patients for more patient-centred and improved quality of care.

The Government of Mauritius has come up with a number of measures to address the challenges of the healthcare system as elaborated in the strategic plan of the Ministry of Health and Wellness. These include the following:

Strategic Goal 1: Improve access to quality patient – centred services

Strategic Goal 2: Improve health outcomes through community empowerment

Strategic Goal 3: Strengthen and benchmark the provision of high quality, patient-centred and safe curative services, in line with international best practices

Strategic Goal 4: Improve service excellence for the provision of safe and compassionate care

Strategic Goal 5: Reduce preventable and premature morbidity, mortality and disability due to non-communicable diseases, by addressing their risk factors

Strategic Goal 6: Strengthen the prevention of mental disorders and promote good mental health

Strategic Goal 7: Prevent and reduce the negative health and social consequences of substance use and addiction

Strategic Goal 8: Sustain strong surveillance and response for emerging and re-emerging vector-borne and communicable diseases, including the new coronavirus disease and eliminate the Hepatitis C Virus

Strategic Goal 9: Improve maternal mortality ratio per 100,000 live births

Strategic Goal 10: Improve neonatal mortality rate per 1,000 live births and ensure optimal physical and psychological development of new-borns babies, children and adolescents

Strategic Goal 11: Improve women's health and their well-being

Strategic Goal 12: Improve population growth rate and provide high quality family planning services

Strategic Goal 13: Improve vaccination coverage for the vulnerable population

Strategic Goal 14: Enhance the health and well-being of the elderly

Strategic Goal 15: Promote healthy behaviour among school going children and adolescents

Strategic Goal 16: Improve health security through a sustainable, effective and efficient national surveillance, response and recovery system

Strategic Goal 17: Promote and maintain the highest degree of physical, mental and social well-being of workers

Strategic Goal 18: Generate sound and reliable information at all levels of the health system in a holistic approach for better decision-making

Strategic Goal 19: Institutionalise Health Research to improve quality of healthcare services

Strategic Goal 20: Set up a Strategic Human Resource Management Function for Health

Strategic Goal 21: Ensure sustainable access to affordable, safe, cost effective and quality medicine and health technologies to accelerate progress towards SDG 3

Strategic Goal 22: Safeguard health security through the promotion of food safety

Strategic Goal 23: Make provision of financial resources on a sustainable basis to accelerate progress towards universal health coverage

Strategic Goal 24: Strengthen inter-sectoral collaboration and public private partnership

Strategic Goal 25: Nurturing good governance in the public health system

Strategic Goal 26: Support the development of Medical Travel Tourism

The report also identified the development of a National Health Research Policy and Strategy as a priority to ensure that Mauritius attains its goals with regards to the sector and is in line with Strategic Goal 9.

The Mauritius Research and Innovation Council has a major role in advising Government on all matters related to Research and Innovation. In this role it took into consideration the crucial role of Research and Innovation in the Health sector and hence the identification of Health and Wellness as a major theme to be addressed in the National RoadMap for Research and Innovation (2023-2027).

2. APPROACH

The Council constituted a steering committee to oversee the drafting of a Health and Wellness Research and Innovation roadmap for the period 2023-2027.

The Committee consisted of the major players in the Health and Wellness sector.

- Mauritius Research and Innovation Council
- Ministry of Health and Wellness
- Ministry of Youth Empowerment, Sports and Recreation
- Ministry of Industrial Development, SMEs And Cooperatives
- Economic Development Board
- Ethics Committee
- Clinical Research Regulatory Council

- University of Mauritius
- Mauritius Multisports Infrastructure Ltd
- Axonova
- Polytechnics Mauritius Ltd
- Cap Research Ltd
- T1 DIAMS

The Committee identified the following salient factors to be considered in the road map:

- The scope of the Health & Wellness Sector
- The principles which would guide the Roadmap
- The Vision, Aims and Objectives of the Roadmap
- The Present Status
- The Challenges
- The International Trends
- The Strategic Orientations

3. ANALYSIS OF HW SECTOR

Health is defined as the overall mental and physical state of a person; the absence of disease. Wellness refers to the state of being in optimal mental, physical and emotional health.

The committee proposed that the scope of the discussions include the medical sector, the life sciences/pharmaceutical sector, the Healthy Lifestyle sector including Sports and Nutrition and the Health care including a core group of high-value activities such as hi-tech medicine, medical tourism, medical education and wellness.

3.1 Guiding Principles

- Leadership for innovation
- Access to health care
- Collaboration and partnership
- Inclusive innovation for all
- Gender mainstreaming and equity

3.2 Vision, Aims and Objectives

Vision: The long-term vision is a competitive, efficient and inclusive health and wellness innovation ecosystem that provides an enabling environment that can nurture and stimulate creativity for a healthier and wealthier Mauritius.

Aim: To strengthen capacity for sustained, integrated, coordinated and collaborative research, innovation and translation for health and wellness.

Objectives:

- To identify broad strategic research and innovation directions in Health and Wellness for the country
- To develop and implement sustainable research and innovation initiatives in the health and wellness sector
- To generate new knowledge relevant to Health and Wellness and promote its translation into products, services, policies and practices to improve health
- To promote data-sharing platforms and systems to facilitate health and wellness innovations
- To facilitate the adoption of emerging technologies to improve health and wellness

4. SITUATIONAL ANALYSIS

The Committee took stock of the National Vision of the Government in this sector as well as national policies. The following major national documents were consulted in the process:

1. National Sport and Physical Activity Policy (2018 – 2028), Ministry of Youth Empowerment, Sports and Recreation
2. Health Sector Strategic Plan, 2020-2024, Ministry of Health and Wellness
3. Development of a nutraceutical framework and industry in Mauritius
4. Industrial Policy and Strategic Plan of Ministry of Industry (2020-2025).
5. Government Programme 2020-2024
6. Budget Speech for the last 2 years
7. Emerging Sectors for Investment (EDB Website)

4.1 The working group identified priority fields requiring research and innovation efforts for a healthier and wealthier Mauritius

- a) Clinical Research
- b) Manufacture of medical devices
- c) Nutraceutical industry
- d) High value activities including hi medicine and telemedicine
- e) Wellness tourism/Silver economy
- f) Medical education

- g) Developing a sports innovation ecosystem
- h) Ayurvedic and other traditional medicines
- i) Addressing NCDs and infectious diseases
- j) Life science including pharmaceuticals and vaccine development

5. CHALLENGES OF THE SECTOR

The working group took note of the main health challenges facing the Mauritian Population as well as the gaps and difficulties in implementing research and innovation initiatives in the present context.

5.1 Health Challenges

1. Noncommunicable diseases (NCD) are the leading cause of premature mortality and disability in Mauritius. In 2016, the country lost 413,536 disability-adjusted life years (DALY), of which 340,551 (82%) were from NCD; 43,977 (11%) from communicable, maternal, perinatal and nutritional conditions; and 29,008 (7%) from intentional and unintentional injuries [2]. Malignant neoplasms, diabetes mellitus, mental and substance use disorders, cardiovascular diseases and respiratory diseases accounted for 70.7% of NCD-related DALY loss in 2016. The Committee also agreed that obesity is an important underlying causal factor for the NCDs and should be properly addressed. Prevalence of obesity in the Mauritius adult population is 11.1% for men and 25.8% for women (MOHQL, 2015). According to the World Health Organization (WHO) [3], majority of NCDs emanate from four specific behaviours (harmful use of alcohol, tobacco use, physical inactivity, and unhealthy diet) that lead to four key metabolic/physiological changes (raised cholesterol, raised blood pressure, overweight/obesity and raised blood glucose). In Mauritius total pure alcohol consumption per person aged 15 years and older was 3.6 l in 2016 [4]. Age standardized prevalence of current tobacco smoking among persons aged 15 years and older in 2015 was 21.2% [5]. The age-standardized mean population salt intake among Mauritians aged 18 years and older was 14 g per day in 2010 [6]; which was almost three times the WHO recommended daily salt intake of 5 g per person [3]. In 2016, 29.8% of adults aged 18 years and above were insufficiently physically active [7]. Modification of those behavioural risk factors requires a strong multi-sectoral action under leadership of the health sector.

Despite all preventive measures being implemented in the country there are still new HIV infections across all ages. It is also to be emphasized that the adolescents and young adults are vulnerable to HIV. Adoption of safe behaviour through behavioural change is a challenge. There being cross-cutting issues with regards to HIV, a multi-sectoral approach has been reactivated.

2. In The past two years the country has witnessed various challenges with the COVID 19 Pandemic. These include the procurement of medical supplies, medical equipment and drugs in a period when the international market and international travel was disrupted. This represents opportunities for the country to strengthen its health innovation ecosystem in the light of evolving scientific data and of the evolution of the COVID-19 pandemic. Notwithstanding the gains achieved to control communicable diseases, the country is not spared from the resurgence of infectious and emerging diseases.
3. Lack of exercise and physical activity is a critical issue, with only 23% of the Mauritian adult population meeting the World Health Organization (WHO) recommendations of 150 weekly minutes of physical activity and a clear disparity in sport participation in relation to gender, age, socio-economic status and disability. Physical activity is not recognised as a national priority with comparatively low levels of physical education in school and no common and clearly defined goal to unite and galvanize our sport and physical activity stakeholders.
4. Lack of awareness on healthy eating habits and availability and costs of 'healthy' food is a major issue.

5.2 Obstacles to Research and Innovation

1. Lack of funding, resources, specialised skills (e.g. Superspecialists in medical sector) to conduct research and innovation
2. Institutional stumble blocks, e.g. unattractive salary scale for superspecialists, communication gaps between public sector, private sector and academia, slow administrative procedures.
3. Need for strengthening of legal and regulatory framework in certain areas
4. Lack of collaboration/coordination between institutions (data sharing; joint research)

6. INTERNATIONAL TRENDS

An analysis of current international trends in health and wellness was conducted to identify new technologies, innovative strategies, best practices and potential new markets that the country could possibly consider.

6.1 Current Research Trends

Various reports have shown that the COVID 19 pandemic has increased investments in health research and innovation. The GII 2021 shows that 'investment in innovation has been resilient during the COVID-19 crisis and even reached new peaks in some sectors and regions. Before the pandemic, innovation investments were at an all-time high with R&D expenditure growing by 8.5percent in 2019. When the pandemic hit, it was unclear what its impact would be on innovation. History suggested that innovation investments would be hard hit. However, throughout 2020, key indicators of innovation investment, namely, scientific output, R&D expenditure, IP filings and venture capital deals continued to increase. These data point to a growing acknowledgement among governments and enterprises that new ideas, products and services are crucial for post-pandemic recovery and growth. As per the report, firms whose innovation was at the heart of measures to contain the pandemic and its fallout – notably (i) software and information and communication technology (ICT) services, (ii) ICT hardware and electrical equipment and (iii) pharmaceuticals and biotechnology – amplified their investments in innovation. In the pharmaceuticals and biotechnology industry, around 62 percent of companies reported an increase in R&D spending. There is a clear tendency that R&D expenditure in healthcare has increased. sentence not complete

Besides the World Health Organisation has defined as a priority to harness the power of science, research innovation, data and digital technologies as critical enablers of the other priorities – for health promotion and disease prevention, for early diagnosis and case management, and for the prevention, early detection, and rapid response to epidemics and pandemics. The United Nations has also released a Research Roadmap for the COVID-19 Recovery, encouraging targeted research for data-driven responses that focus particularly on the needs of people being left behind. The framework provides a strategy and blueprint for a robust socio-economic recovery from the pandemic, focusing on key actions across five pillars: 1. health systems and services; 2. social protection and basic services; 3. economic response and recovery programs; 4. macroeconomic policies and multilateral collaboration; and 5. social cohesion and community resilience.

Besides the increasing research in the healthcare sector, increasing R&D expenditure was also noted in the ICT sector in the GII report 2021. Hence the application of digital and emerging technologies in the wellness industry was further explored.

6.2 Innovation in the wellness industry

The global wellness industry, including spiritual self-care, has grown to \$4 trillion. (Global Wellness Institute, 2020). The wellness market has expanded by 6.4% since 2017 from \$3.7 trillion to a value of \$4.2 trillion. This growth has been twice as fast as the growth of the global economy.

6.3 Global Wellness Economy

Wellness is a holistic approach to the wellbeing of an individual mentally, physically and spiritually. People are prone to be unfavourably affected by lifestyle factors than the average global health diseases. Wellness tourism deals with health, wellbeing, leisure, happiness and

quality of life. The global wellness economy was valued at \$4.9 trillion in 2019 and then fell to \$4.4 trillion in 2020, due to the widespread impacts of the COVID-19 pandemic.

Technology and Innovation play an important role in the different Wellness industries. A few examples of how technology is used in these sectors are as follows:

1. Sleep Market

- Smartwatches (for quality sleep), SMART Mattress, Nap Pods, Sleep Robots, Time Shifter to help travellers eliminate jet lags, Research on Circadian Medicine to repair or supercharge our cell clocks.

2. Aging (Silver Economy):

- Products adapted to aging include cosmetics, sleek designs of diaper for incontinence, telemedicine for online commuting, telemedicine for online community, reality games for cognitive functions, time diagnostic kits for easy health monitoring/robotic assistants

3. Mental Health

- Chatbots, Apps and digital support groups/robots
- Mental Health Apps
- Behavioural health software market
- Virtual therapy apps
- Mental Wellness wearables (headsets/bracelets) in early stages of clinical trials
- Mindful/Meditation Apps

4. Energy Medicine (Traditional Healing such as Ayurveda, Chinese Medicine/Shamanic Healing; flow on energy points)

- Biophotonetics: light technologies to transform human health
- Pulse electromagnetic field therapy
- Optogenetics

Digital technologies, Robotics, and Artificial Intelligence are increasingly being used in the wellness industry to provide services in the easiest and most efficient way. 3D Printing of specific medications is also a new area that is increasingly being used.

7. CASE STUDIES

The working group identified health care tourism as a potential game changer which could rank as the second economic pillar of Mauritius after the Blue Economy on the long-term. In this context, 2 case studies were made to study best practices of Thailand and India which are top wellness destinations for tourists.

The factors having contributed to the success of Thailand are:

- Use of cutting-edge technology for procedures and surgeries which result in shorter hospitalization time, less scarring, less muscle and tissue damage
- State-of-the-art laboratory and pathology facilities which result in quick lab tests and shorter waiting times between appointments and treatment
- The hospital has an established Interpreter Department to provide translation services to international patients
- GHA accredited – 1st hospital outside the USA to be accredited by the Global Healthcare Accreditation Program
- Joint Commission International Accreditation which improves patient safety and quality of health care

The Indian wellness industry is gaining momentum in India and is known as the Land of Ayurveda.

The government set up the Ministry of AYUSH (Ayurveda, Yoga, Unani, Siddha and Homoeopathy) in November 2014 to promote the country's indigenous alternative medicines including education and research. A traditional medicine centre to strengthen research, training and awareness of ayurveda was set up by the World Health Organisation in India in November 2020.

In relation to the above the forthcoming construction of an AYUSH Center of Excellence in Mauritius as well as its Research and Innovation needs was considered

8. RECOMMENDATIONS

Strategic Action 1: Promoting Innovative Technology/Practices

Expected Outcomes:

- Implementation and expansion of digital health technologies 220
- Adoption of other innovative technologies and practices to support the health and wellness sector
- Cost saving on electricity/ petrol bill of Ministry of Health and Wellness
- Improved delivery of services in public hospital

- Better provision of care, research, support including preventive measures for NCDs
- Promotion of multi-disciplinary conversation between hospitals/ specialties
- Promoting intersectional approach between major national hospitals/ private clinics and medical NGOs

Strategic Action 2: Harnessing The Potential Contribution Of New Fields Of Health And Wellness To Economic Growth

Expected Outcomes:

- Implementation of research and innovation to promote new fields, such as traditional/ ayurvedic medicine, sports economy, silver economy, healthcare tourism, medical education
- Direct and indirect income from foreign student's fees, hostel, parents' visits
- Hotel occupancy rate during down seasons can go up
- Mauritius to improve working relations with various African states - through various scholarship to deserving African candidates – build a bridge for improved knowledge transfer and FDI
- Air travel associated income
- Mauritius can be the top wellness tourist destination against NCDs through Ayurveda preventive/ curative medicine
- Evidence-based Ayurveda against NCDs can be fine-tuned to Mauritian context and applied. Newer studies can be launched at the six Ayurveda clinic.
- Improved service delivery by the Ayurveda physicians and therapists

Strategic Action 3: Innovating For A Healthier Population

Expected Outcomes:

- Addressing communicable and non-communicable diseases
- Addressing mental health
- Ways and means to reduce substance abuse
- Decent living environment and aging with dignity and respect
- Participative incentive of patients in their treatment
- Health literacy
- Proper adherence to treatment
- Impeding/ delayed chronic complications
- Increased conversation between actors in formulating individualized treatment plan
 - o Enhanced health outcomes of the senior citizens
 - o Better management of seniors' (geriatric) issues
 - o Impacting the diet behaviour of youth app by using the athlete as a role model

Strategic Action 4: Innovative Governance Mechanism To Improve Delivery Of Institutions

Expected Outcomes:

- Institutional framework for teaching hospital
- Integration of public hospitals into health care tourism
- The postgraduate training of doctors needs an appropriate clinical and regulatory framework
- Better and professional environment for clinical trials, putting Mauritius at level field with international standards. This will enable recognition by leading worldwide pharmas and biotechs
- Move from research to commercialisation, and generate revenues from more than 20 years of accumulated research data and knowledge on endemic medicinal plants
- Attract overseas investors such as food, pharmaceutical and cosmetic companies, who are constantly looking for novel and unique bio-active ingredients to develop blockbuster health products including fortified and functional food products
- Bring new opportunities for small planters, farmers, and owners of sugar cane fields for cultivation of endemic medicinal plants at large scale
- Unlock the potential of the local biodiversity and position the country on the international biotech scene, with the competitive edge of having unique genetic resources that exist nowhere else on the planet
- Penetrate the fast-growing global nutraceutical market that has grown from a value of USD 140 Billion in 2010 to USD 382 Billion in 2020 and expected to reach USD 486 Billion by 2025

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