

Med-Aditus International, Inc. is a nonprofit [(501)(c)(3), tax exempt in the USA] corporation, founded to improve access to high-quality medicines at affordable prices in sub-Saharan Africa (SSA).

THE PROBLEM

Quality medicines are out of reach for the majority of patients in SSA. While there are many socio-economic contributing factors, heavy reliance on import from Asia and international donation programs is the most significant cause of this problem. Frequent disruptions in the fragile supply chain cause shortages and stockouts of critical "must-have" medicines. The COVID-19 pandemic has shown that in the time of crisis, the exporting countries meet their own needs for medicines and vaccines first, leaving others scrambling to find solutions ([Alison Buckholts, IFC Insights, 2021](#); [ONE Africa Covid-19 Tracker, 2022](#)). The supply chain is also vulnerable to infiltration of substandard and falsified medicines, a leading cause of preventable deaths with far-reaching impact on the health and economic well-being in the region.

THE SOLUTION

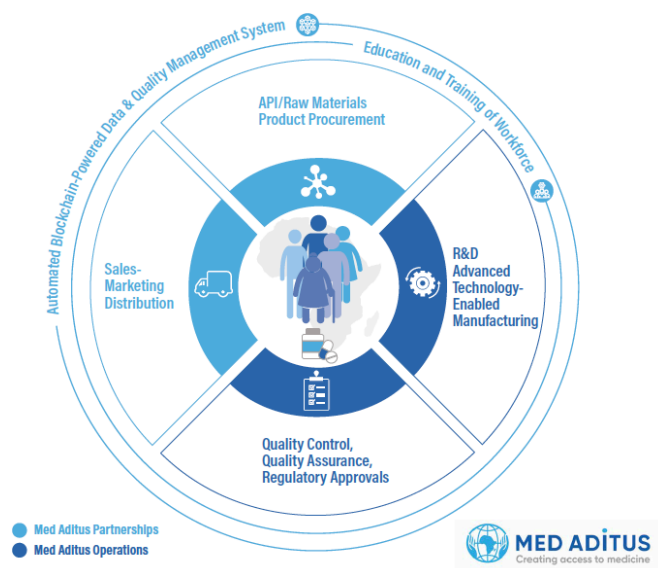
Africa has less than 400 drug makers for a population of 1.3 billion ([McKinsey report, 2019](#)). By comparison, China and India, with a population of 1.4 billion each, have 5,000 and 10,500 pharmaceutical manufacturers, respectively. Increasing local capacity to manufacture high-quality pharmaceutical products is the only long-term solution for providing much needed medicines to the people of SSA.

MED ADITUS – MISSION AND OPPORTUNITY

Med Aditus will demonstrate that by deploying

leading-edge portable, continuous modular manufacturing and blockchain powered quality management technologies, and by implementing a novel partnership model (adjoining figure), essential medicines can be locally produced that meet international standards of quality at affordable prices. By strategically selecting products at launch – specialty products for children, non-communicable diseases, and neglected tropical diseases, Med Aditus will meet unmet demand while creating a distinct market presence in SSA and seizing an opportunity to participate in a growing pharmaceutical market - For example, the East African pharmaceutical market has been on the trajectory to grow from \$2.1 B in 2016 to \$3.5B in 2021. Med Aditus will bring experience, know-how, novel technology and a deep network of relationships to this endeavor. To meet the need for a highly trained local workforce, Med Aditus will develop targeted training programs

MED ADITUS ENTERPRISE



This graphic represents the patient-centered partnership model of Med Aditus Enterprise, which leverages existing regional and global capabilities.

in partnership with universities, pharmaceutical companies, and local governments, thus promoting the growth and sustainability of the industry.

Upon demonstrating the proof of concept, Med Aditus plans to attract larger investment/funding to scale the manufacturing capacity in the region and beyond, thus transforming the pharmaceutical manufacturing ecosystem. Subsequently, Med Aditus will develop Research & Development (R&D) capabilities to bring new therapies to market that address the need of the region. Nearly 50% of the R&D portfolios of most multi-national pharmaceutical companies now comprise biological (protein) drugs, and yet not a single biological drug is affordably accessible to people in SSA. Med Aditus plans to change this and make locally produced biological drugs available in SSA.

LEADING-EDGE TECHNOLOGIES

For the first time in SSA, Med Aditus will implement portable continuous modular manufacturing technology and blockchain-powered automated quality management system (QMS) that will revolutionize pharmaceutical manufacturing in the continent.

PORTABLE CONTINUOUS MODULAR MANUFACTURING is an advanced technology with distinct advantages, such as small physical footprint and compact production line, easy onsite assembly, 24/7 continuous production, inline real-time sampling and analysis for process/product controls, flexibility of production lot sizes, and scalability. Med Aditus will contribute to the transformation of pharmaceutical manufacturing across SSA by demonstrating rapid scalability of manufacturing capacity using this technology.

BLOCKCHAIN-POWERED AUTOMATED QMS will be deployed through a strategic partnership with Rymedi (www.rymedi.com), a leader in healthcare applications of the blockchain-powered data management systems. The automated QMS will be Med Aditus' differentiating asset in the "medicine access ecosystem." The system will ensure quality and integrity of products and processes across manufacturing, distribution, and medication treatment. By controlling and tracking quality at levels above the industry best-practices and by making quality-related, real-time data available to the regulatory agencies, Med Aditus will seek accelerated regulatory approvals to achieve competitive advantage. Further, the technology will protect the products from substitutions with substandard and falsified drugs during distribution. Besides protecting its own products, Med Aditus will catalyze the formation of a consortium to fight the spread of substandard and falsified drugs in the region.

WHO WE ARE

Med Aditus was founded by Dhiren Thakker, Ph.D., current President and CEO, who has 45 years of experience as a biomedical and pharmaceutical scientist, innovator, educator, entrepreneur, and executive. He leads a committed and passionate team of professionals, interns, and consultants, and has assembled an Advisor Network comprising more than 85 committed individuals with diverse expertise and experience. Med Aditus' Board of Directors, with collective experience of well over 300 years in diverse fields, provides active guidance and oversight. For more information, please visit our website at www.medaditus.org.

TAKING ACTION

Engagement with governments in East Africa as well as detailed planning is underway. Overture to investors, development banks, and philanthropic foundations and individuals is ongoing to secure funding and begin construction of the facility in the 2nd half of 2022.