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## The Impact of Digital Transformation on Healthcare Delivery: Lessons from Murang'a County

County:	<b>Murang'a County</b>		
Sector/s:	<b>Health</b>	<b>Sub-sector/Theme:</b>	<b>Digitization of Health</b>
Keywords: (for search in the online platform)	<b>Digitization of Health Systems</b> <b>Electronic Health Records</b>		
Target Audience:	<b>Counties</b>		
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### Introduction

The invention of computers and internet has revolutionized every aspect of human life, bringing profound changes across various domains. Digital transformation has significantly impacted healthcare delivery worldwide. The health sector has seen significant benefits from advancements in medical research, accurate diagnostics, enhanced medical accountability systems and streamlined patient record-keeping through Electronic Health Records.

Murang'a County, located in the Central region of Kenya with a population of 1,056,640, has historically struggled with deficiencies in its health sector due to reliance on manual systems. These limitations have emerged in several critical areas including; financial leakages, inefficient commodity management, prolonged patient waiting times, poor drug inventory management, inadequate ward monitoring and delayed detection of disease outbreaks. Collectively, these issues have hindered effective healthcare delivery and obstructed timely medical interventions. Recognizing the urgent need for improvement, the County Government of Murang'a initiated a strategic move towards the digitization of its health systems across all public health facilities. The digital transition sought to overcome the challenges posed by manual operations, ensuring better resource management, precise health revenue tracking, reduced waiting time and effective drug inventory oversight.



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*Murang'a County Referral Hospital*

### **Implementation of the practice**

In September 2022, the County Government of Murang'a, through its Department of ICT, and partnership with Safaricom, began the semi-automation of revenue collection within the health sector. Cash payments were abolished, and a USSD code for M-Pesa payments was developed, streamlining the payment process. Additionally, the County developed a real-time client exit dashboard to monitor client movement and generate patient data promptly. Data was also generated to identify and address shortages in drug stocks that were lacking.

In March 2023, following the need for transition from manual to digital health record system, the County Government of Murang'a through the Health Department conducted benchmarking visits in Kisumu, Nakuru, Vihiga and Kajiado Counties to identify the most suitable model for adoption and enhancement in their health sector.

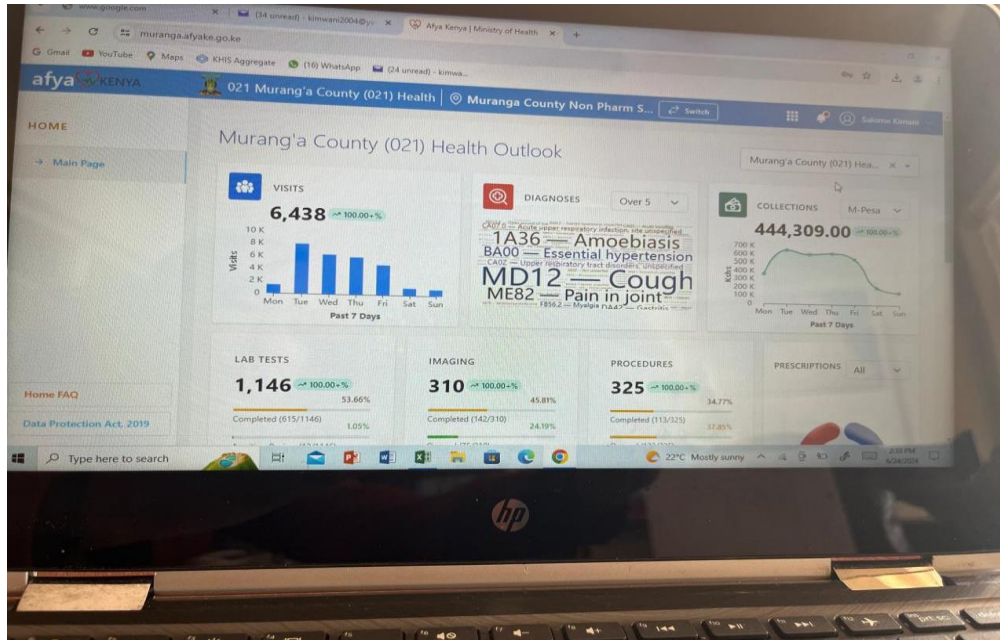
In May 2023, after a careful evaluation, the County chose to adopt the *Afya.KE* model, a system developed and provided for free by the Ministry of Health (MoH) to willing Counties. The adoption of the *Afya.KE* Health Management Information System brought significant financial advantages. Since the system was free, the County could reallocate funds initially intended for system development towards other crucial activities. These included; purchasing electronic equipment, installing reliable



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internet connections and providing comprehensive training to medical practitioners on how to effectively utilize the digital platform.



[Afya.Ke/Murang'a County Health System](https://afya.ke/Murang'a%20County%20Health%20System)

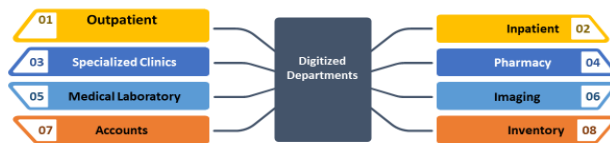
In June 2023, the County conducted a thorough needs assessment research, to identify existing gaps within the health sector. Based on the findings, they purchased laptops, desktops and tablets to be distributed across all County public health facilities, apart from 6 that are to yet to be equipped. Following this, a pilot program was conducted at the Murang'a County Referral Hospital to assess the effectiveness and integration of the devices into the healthcare system. This aimed to ensure that the technology met the specific needs of the facility before full-scale implementation across the County.

In July 2023, the County began implementing the project at Murang'a County Referral Hospital in three phases over three months, starting with the outpatient department, followed by specialized clinics like eye care and concluding with the implementation in the inpatient department.

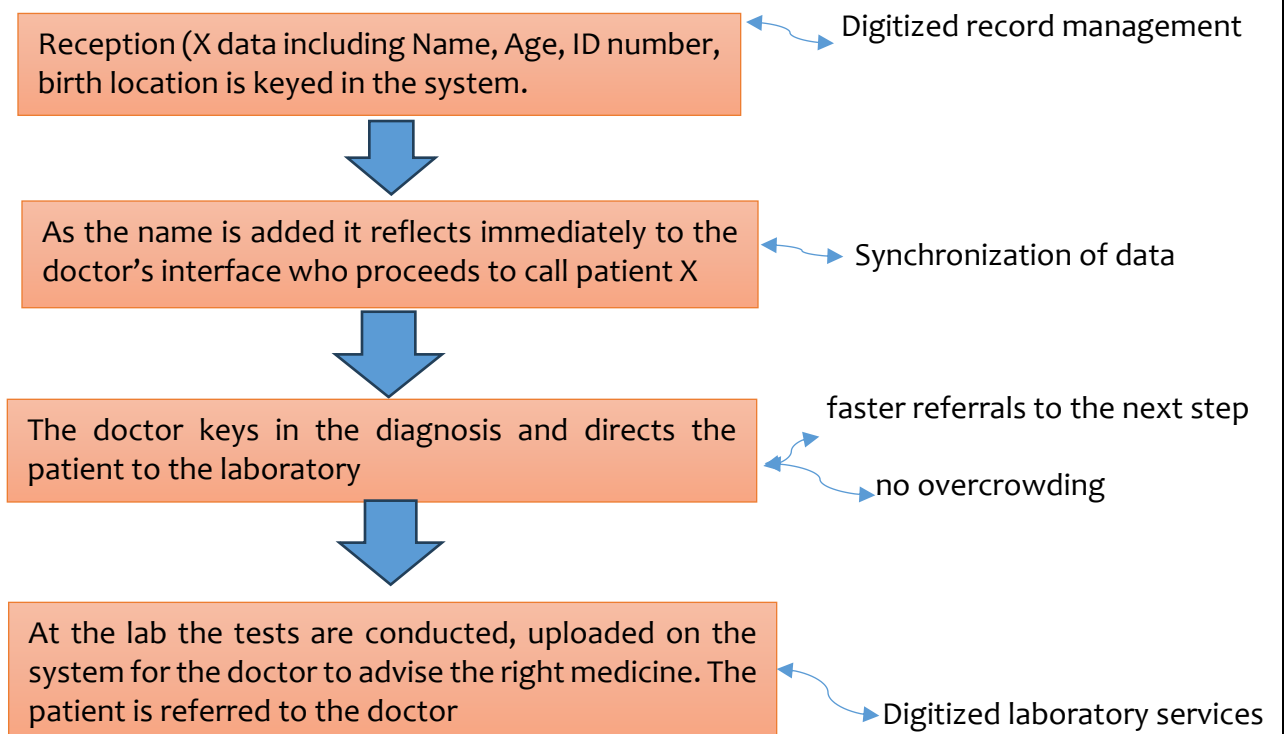


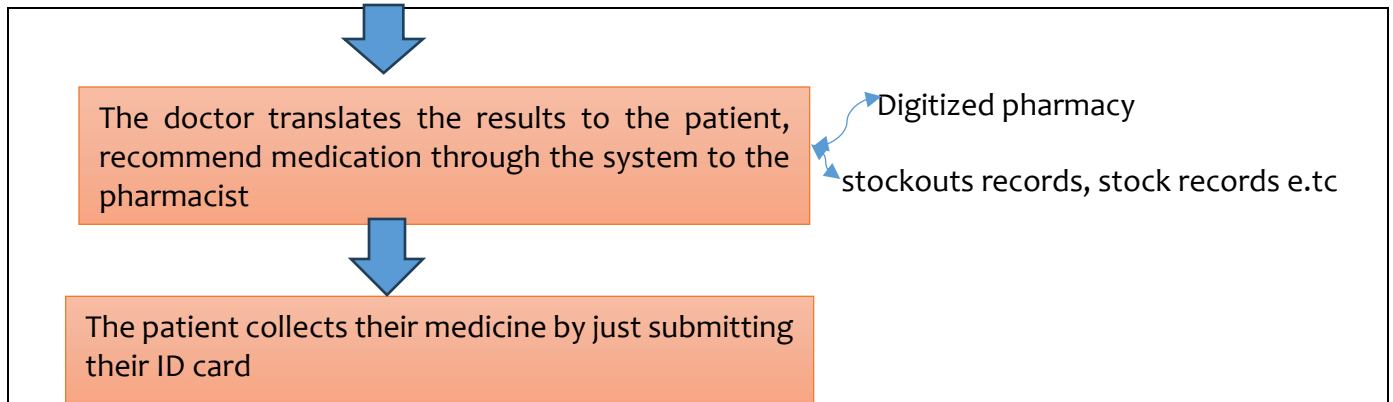
Approximately Ksh 180 million was allocated to digitize health services in the 151/157 (96%) public health facilities that are now fully digitalized.

Some of the services that have already been digitized include

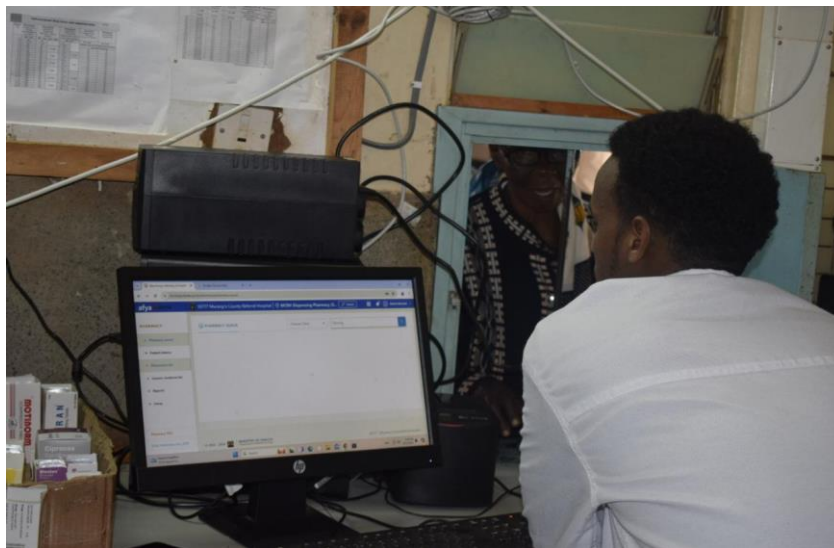


Take for example a patient X with bilharzia,





To support the sustainability of this initiative, the County has drafted a policy on digitization of health.



*A patient receiving medication at the Pharmacy Department*

### Results of the practice

- Switching to digital registration and record management has significantly reduced the long queues previously experienced from 500 to 1500 patients seen daily.
- The semi-automation of revenue collection in the health sector resulted in increased efficiency and reduced revenue leakage (from Ksh 80,000 to Ksh 200000 collection daily).
- The development of a data dashboard enabled better tracking and management of patient information, leading to improved healthcare decision-making.



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- Real-time monitoring of patient movement and identifying points where waiting times have paused, for further follow-ups.
- The distribution of laptops, desktops and tablets to health facilities has not only improved access to technology among healthcare providers but also facilitated better service delivery and patient health care outcomes.
- Accountability for medical supplies and products in health facilities has been enhanced, thereby improving forecasting and reducing opportunities for theft.

### Lessons learnt

- **Phased implementation success:** implementing the project in phases over three months, starting with outpatient departments and specialized clinics, ensured systematic improvements across different healthcare departments, enhancing overall healthcare service delivery.
- **Strategic technology adoption:** choosing and adapting existing solutions (like Afya.KE) helped to save costs, reallocating those funds to the procurement of equipment.
- **Effective stakeholder engagement:** involving stakeholders early and consistently is key to ensuring buy-in and smooth implementation.
- **Political goodwill and buy-in:** staff buy-in and commitment are crucial factors for successful implementation.

### Conclusion

The initiatives undertaken by Murang'a County have demonstrated significant strides in modernizing healthcare delivery. Through strategic adoption of digital solutions, enhanced stakeholder engagement, and phased implementation, the county has improved accountability, streamlined operations, and enhanced patient health care services.

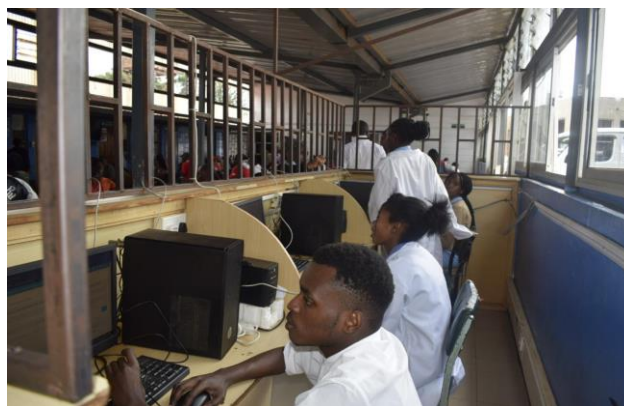
### Photo Gallery



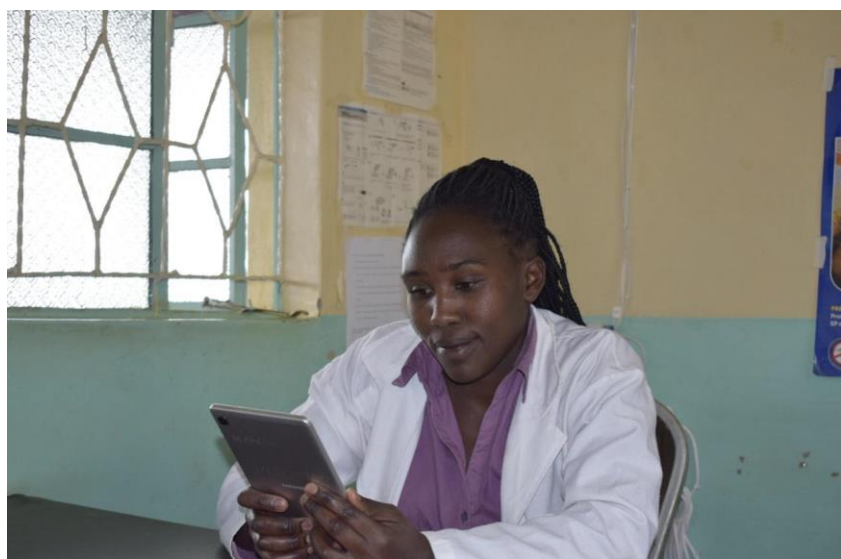
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*Medical supplies at the Pharmacy Department*



*Health Care Providers attending patients at OPD*



*Health Care Provider at the Laboratory department processing results, at Maragi Dispensary*