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Patient-Specific Mobile Phone-Generated Reminders and Quality of Hypertension Care in Western Kenya

Nicholas Kirui, MBChB Mmed (Int.Med) MSc (HI)

Medical Specialist and Health Informatician

Institute of Biomedical Informatics, Moi University, Eldoret KENYA

Moi Teaching & Referral Hospital, Eldoret KENYA

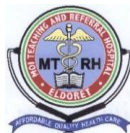




Co-authors

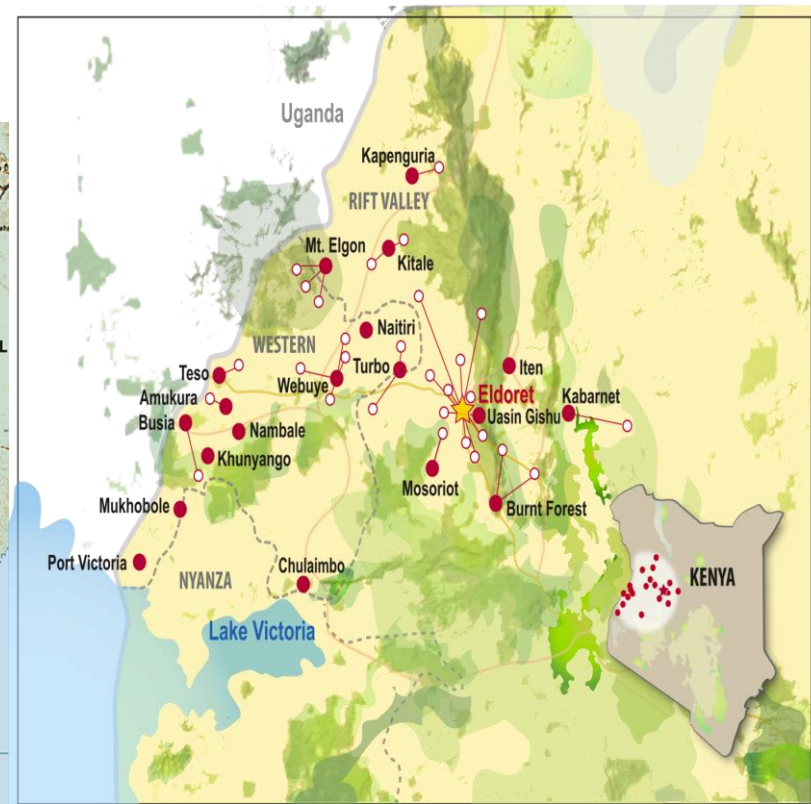
Nicholas KIRUI^{a,b}, Jemimah KAMAND^c, Simon SAVA^b, Lawrence MISOI^a, Steven RONO^d and Martin C. WERE^e

- ^a *Department of Medicine, Moi Teaching and Referral Hospital, Eldoret, Kenya*
- ^b *Institute of Biomedical Informatics, Moi University, Eldoret, Kenya*
- ^c *Department of Medicine, College of Health Sciences, Moi University, Eldoret, Kenya*
- ^d *Academic Model Providing Access to Healthcare, Eldoret, Kenya*
- ^e *Vanderbilt University Medical Center, 2525 West End Avenue, Suite 750, Nashville, Tennessee 37203, US*





Introduction





Introduction

- Kenya has high prevalence of hypertension (6 – 50%)
- Models of hypertension care:
 - Standard management guidelines with specialized & resource-intensive care
 - LMICs - nurses are the frontline workers at primary health care level
- Mobile health technologies (mHealth) offer one key strategy to better manage hypertension in LMICs
 - Computerized Clinical Decision Support System (CDSS)

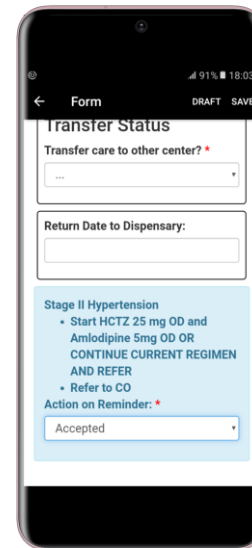
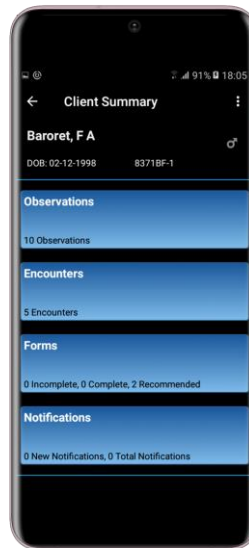
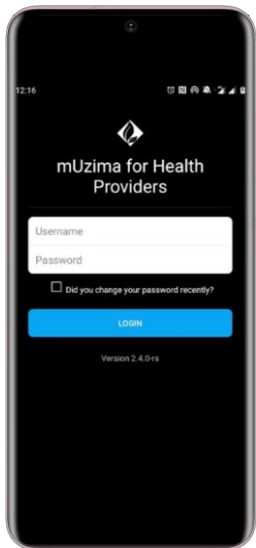


Methods

- To evaluate the adherence to use of patient-specific mobile phone-generated care suggestions for hypertension care in primary care facilities in western Kenya
 - Primary outcome was adherence rate to hypertension care guidelines
 - Prospective comparative study
 - MDH dispensaries & health centres in two counties in western Kenya
 - Patients with hypertension receiving care in 10 MDH primary care facilities from 01-Nov-2018 to 28-Feb-2020

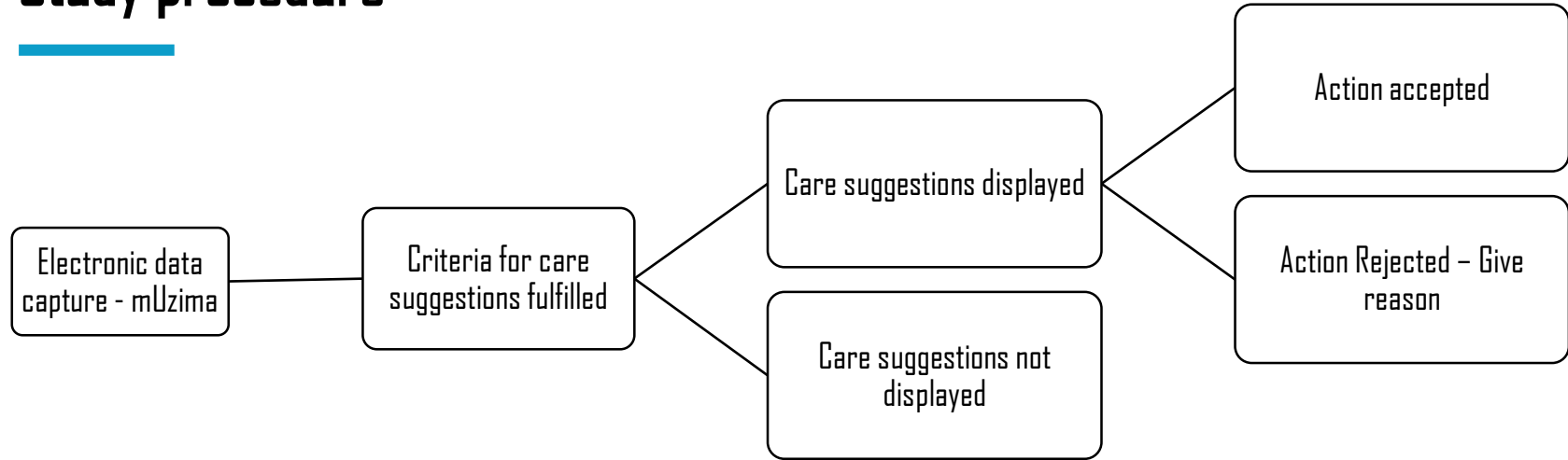


mUzima mHealth Application





Study procedure



Activities by users on mobile devices recorded and transmitted to server



Patient-specific care suggestions

- Study evaluated seven mobile phone-generated patient-specific care suggestions that were divided broadly into three categories:
 - Care suggestions that prompted the clinician to initiate specific hypertension medication
 - Care suggestions that prompted the clinician to titrate hypertension medication due to uncontrolled blood pressure
 - Care suggestions that prompted the clinician to monitor for potential medication side effects (ACE-I or CCB medication adverse effects)



Results

- Higher adherence to hypertension care suggestions by clinicians in the intervention arm compared to the control arm:
 - 91.1% versus 85.7%, $p=0.014$.
 - on adjusting for the effect of the different clinician types (clinical officers and nurses) adherence was statistically non-significant – Adjusted Odds Ratio: 1.78 (95% CI: 0.83, 3.80).



Results

- 378 patients seen during the study period for whom a clinical care suggestion was triggered for hypertension care
 - Participants were similar by age and gender in both groups
 - median age of 60 years and 73% being female ($P>0.05$)
- study sites: 10 primary healthcare facilities (9 dispensaries & one health center)
 - The median number of nurses per facility was two
 - Only four facilities had one clinical officer each



Results

- Mean SBP and DBP not significantly different between the control and intervention groups:
 - proportion of patients with SBP \geq 140 mm Hg and DBP \geq 90 mm Hg being similar 67.4% and 61.0% respectively ($p = 0.198$)
 - proportion of patients with SBP \geq 180 mm Hg and DBP \geq 110 mm Hg being similar 1.3% and 3.2% respectively ($p = 0.312$)
- Most study participants had uncontrolled blood pressure – two thirds



Discussion

- High level of adherence to patient-specific care suggestions in both the intervention and control arms
- Historical data very useful in CDSS
 - Alert fatigue – barrier to use of care suggestions
- No significant impact of the care suggestions on blood pressure



Recommendations

- Patient-specific care suggestions in primary care facilities is feasible
- Mixed-methods studies to elucidate the cause of poor control of blood pressure apart from adherence to care guidelines
- Patient-specific care suggestions should utilize historical electronic health data and reduce alert fatigue



Acknowledgements

- Study participants and staff in the Primary care facilities
- This work was supported through the NORHED program (Norad: Project QZA-0484) and USAID (Grant #: 7200AA18CA00019). The contents are solely the responsibility of the authors and do not necessarily represent the official views of NORHED, USAID or the United States Government.
- USAID-AMPATH partnership
- Moi Teaching & Referral Hospital



MEDINFO23

8 – 12 JULY 2023 | SYDNEY, AUSTRALIA



• Thank you!

