



# Hypertension Tool in Electronic Medical Record System

**STANLEY NGOMA – MOH, Malawi**  
**CQUIN WORKSHOP – TOOLS LAB**

**APRIL 2024**



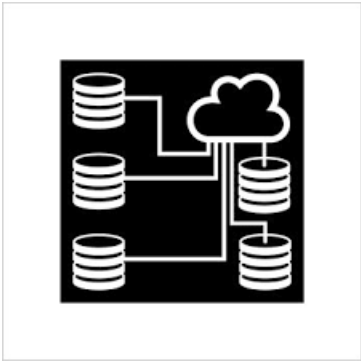
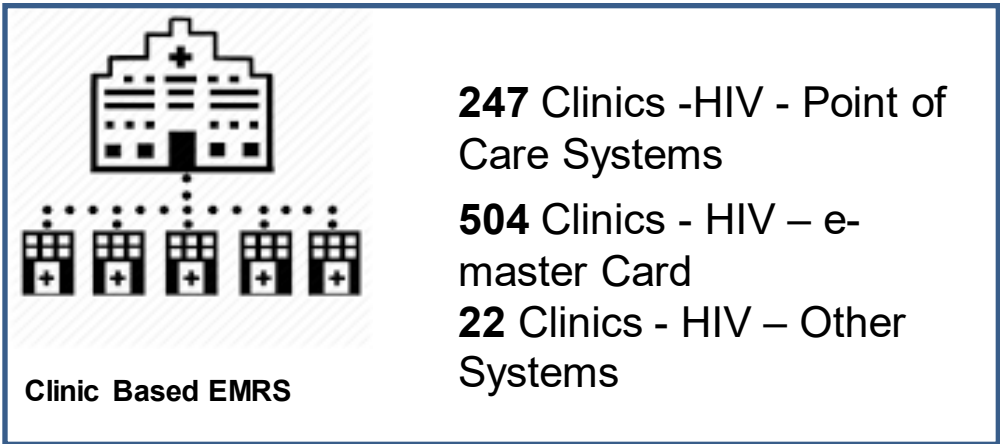


# Introduction

- The Malawi 2022 HIV treatment guidelines recommend integration of annual HTN screening & management in adults aged > 30years
- Several tools have since been introduced by MoH and various implementing partners to monitor the service integration
- The Hypertension module is one of the tools for monitoring HTN screening and Management among PLHIV in ART clinics



# Point of Care System improves clinical quality of care



Central Data Repository



# Administrative Tasks



Facility name: Martin Preuss Centre  
Location: Registration  
User: admin | Date: 15/Apr/2023

1.13.10 / v4.20.6

OVERVIEW | REPORTS | **ADMINISTRATION** | ALERTS

- Session Management
- Portal Settings
- Network
- Location
- User management
- Data Management
- DDE Settings
- Malawi National ID Settings
- Drug Management
- System Preferences

LOGOUT | FIND BY | FIND OR REGISTER | APPLICATIONS

Facility name: Martin Preuss Centre  
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1.13.10 / v4.20.6

OVERVIEW | REPORTS | **ADMINISTRATION** | ALERTS

- View Systems settings
- Activate Extended Lab
- Activate VL routine check
- Activate Filing Numbers
- Activate drug management
- Activate Hypertension screening
- Activate fast track
- Activate 3HP auto select
- Is this a military site?
- Ask pills remaining at home
- (DATA CLEANING) Exclude External and Emergency supply
- Scan DBS barcode

LOGOUT | FIND BY | FIND OR REGISTER | APPLICATIONS

Under Administrative Tasks--> System Preferences set Hypertension screening preferences



# Activating Hypertension Screening module



Scan barcode or QR Code

Facility name: **Martin Preuss Centre**  
Location: **Registration**  
User: **admin** | Date: **15/Apr/2023**

1.13.10 / v4.20.6

OVERVIEW    REPORTS    **ADMINISTRATION**    ALERTS

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- Activate Hypertension screening**
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Activate Hypertension screening

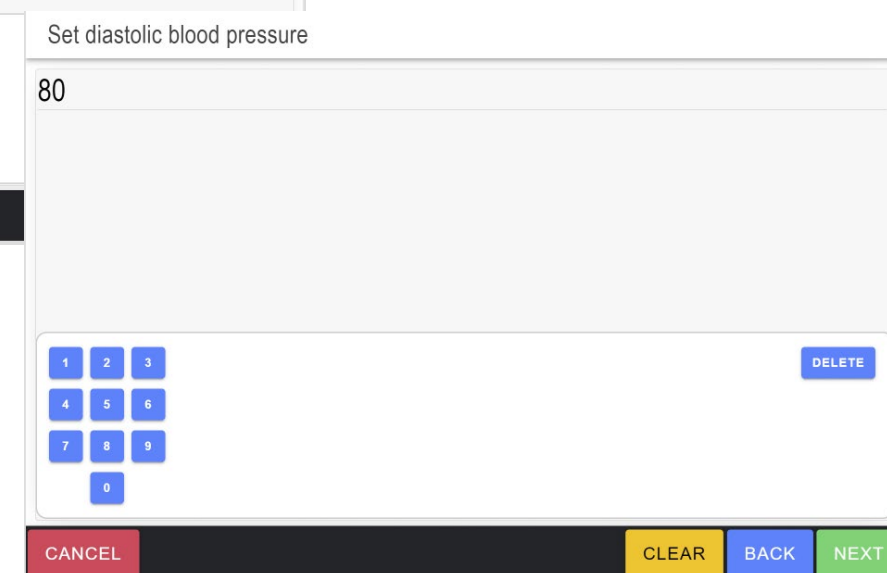
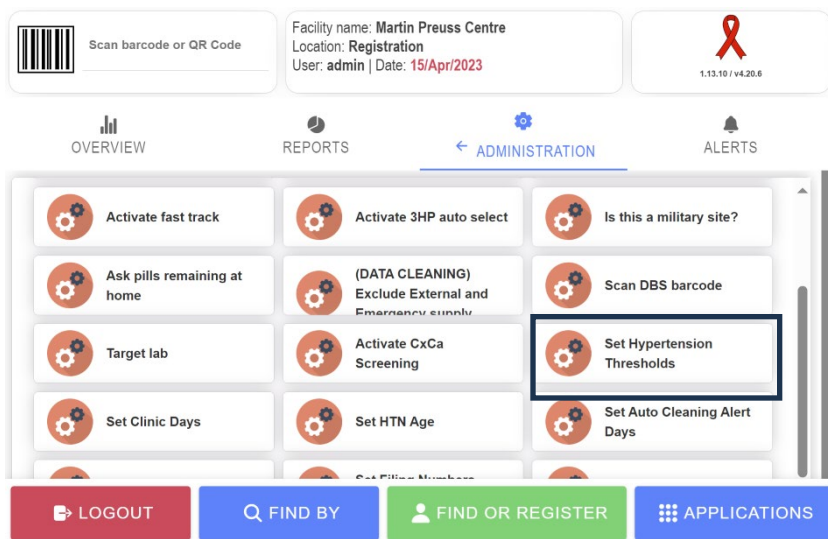
Activate Hypertension screening  **yes**  no

CANCEL    CLEAR    FINISH





# Setting the Hypertension Threshold



Set the systolic and diastolic blood pressure readings; the system will flag once reading are equal to or greater than set



# Setting HTN age threshold



Scan barcode or QR Code

Facility name: Martin Preuss Centre  
Location: Registration  
User: admin | Date: 15/Apr/2023

1.13.10 / v4.20.6

OVERVIEW    REPORTS    **ADMINISTRATION**    ALERTS

- Ask pills remaining at home
- (DATA CLEANING) Exclude External and Emergency supply
- Scan DBS barcode
- Target lab
- Activate CxCa Screening
- Set Hypertension Thresholds
- Set Clinic Days
- Set HTN Age
- Set Auto Cleaning Alert Days
- Set Appointment Limit
- Set Filing Numbers Limit
- Set Clinic Holidays

LOGOUT    FIND BY    FIND OR REGISTER    APPLICATIONS

Enter HTN age Threshold

30

1 2 3    DELETE  
4 5 6  
7 8 9  
0

CANCEL    CLEAR    BACK    NEXT





# BP Screening at Vitals Workstation

Vitals entry

Weight 65.0 KG

Height 170 CM

BP 115/90 mmHG

Temp - °C

SP02 - %

Pulse - BPM

Age 43 Years old

BMI 22.5

Normal

CANCEL BACK FINISH

115/90

1 2 3

4 5 6

7 8 9

. 0 DEL

After the client has gone through the clinic reception/registration, the next vitals workstation is used to capture height, weight and BP readings.





# BP Alert



In the consultation workflow, the system will flag an alert with a high BP reading captured during vitals. The provider may choose to retake BP readings or click "No" and manage BP or add risk factors according to assessment.

High BP Alert

*Test test* has a high blood pressure of **149 / 90**  
Retesting BP is **optional**.  
Do you want to test BP?

NO YES

Risk Factors

- Diabetes
- Chronic kidney disease
- Past history of IHD or CVD
- First degree relative with IHD or CVD <65
- Patient currently smokes

CLOSE MANAGE BP SAVE



# BP Management- New client



BP management screening on 15/Apr/2023

ADD RISKFACTORS

Date	Systolic	Diastolic	BP Drugs	Action / Note
19/Mar/2023	190	190		

## Actions

- Lifestyle advice given  Not yet stable on ART  Patient declining BP drugs
- Start anti hypertensives

CANCEL

REFER TO CLINICIAN

HYPERTENSION DIAGNOSIS



# BP Management- Clients Already Enrolled in HTN Program



BP management screening on 15/Apr/2023 (Patient already on BP drugs) VIEW/EDIT RISK FACTORS 2

Date	Systolic	Diastolic	BP Drugs	Action / Note
15/Apr/2023	149	90	HCZ (25mg tablet), Enalapril (5mg tablet)	Continue drugs
19/Mar/2023	160	190	HCZ (25mg tablet), Enalapril (5mg tablet)	Start anti hypertensives

Actions

Did not take prescribed drugs  Continue drugs  Review drugs

**CANCEL** **REFER TO CLINICIAN** **FINISH**



# BP Drug Management



## BP Drug management

	HCZ 25mg	Enalapril 5mg 10mg	Amlodipine 5mg 10mg	Atenolol 50mg 100mg
Current	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Pills remaining	<input type="text" value="0"/>	<input type="text"/>		
Adherence summary				
Drug	Pills dispensed during last visit	Expected pills remaining	Adherence for drug	
HCZ (25mg tablet)	30	-312	8 %	
Enalapril (5mg tablet)	30	-312	?	

This section allows the user to enter the pills remaining and calculates drug adherence. If there is a need to change drugs the user may click the "Change Drugs" button. After the pills remaining have been entered click "Continue" to confirm .

Action confirmation

Please specify how to proceed with patient

- Continue with current BP Drugs
- Continue without BP Drugs
- Change BP drugs



# Prescription



ARV Regimen(s)

Age: 43 Year(s)      Gender: M  
 Current Regimen: 13A      Current weight: 78.5 kg(s)  
 Reason for change: N/A

4A	AZT 300 / 3TC 150 + EFV 400	10A	LPV/r 200/50 + TDF 300 / 3TC 300
5A	TDF 300 / 3TC 300 / EFV 400	11A	AZT 300 / 3TC 150 + LPV/r 200/50
7A	ATV/r 300/100 + TDF 300 / 3TC 300	12A	DRV 600 + DTG 50 + r 100
8A	ATV/r 300/100 + AZT 300 / 3TC 150	13A	TDF 300 / 3TC 300 / DTG 50
9A	ABC 600 / 3TC 300 + LPV/r 200/50	14A	AZT 300 / 3TC 150 + DTG 50
		15A	ABC 600 / 3TC 300 + DTG 50
		17A	ABC 600 / 3TC 300 + EFV 400

CANCEL      CUSTOM REGIMEN      CLEAR      NEXT

Selected medication

Age: 43 Year(s)      Gender: M  
 Current Regimen: 13A      Current weight: 78.5 kg(s)  
 Reason for change: N/A

Drug name	Units	AM	Noon	PM	Frequency
HCZ (25mg tablet)	tab(s)	0	0	1	Daily (QOD)
Enalapril (5mg tablet)	tab(s)	0	0	1	Daily (QOD)
TDF 300 / 3TC 300 / DTG 50	tab(s)	1	0	0	Daily (QOD)

CANCEL      BACK      NEXT



# Interval to Next Visit



Interval to next visit

2 weeks **1 month**

2 months 3 months

4 months 5 months

6 months 7 months

8 months 9 months

10 months 11 months

12 months

Medication run-out date:  
13/May/2023

Estimated packs/tins:

HCZ (25mg tablet)	1
Enalapril (5mg tablet)	1
TDF 300 / 3TC 300 / DTG 50	1

CANCEL CLEAR BACK NEXT

**The EMR helps you  
synchronize HIV care and  
NCD care visits**



# Appointment Booking



Appointments booking

May 2023						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11 <sup>0</sup>	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

**Medication Run out Date**  
13/May/2023

**User set appointment date**  
11/May/2023

**Appointments**  
0

**Appointment limit (per/day)**  
0

**CANCEL** **FINISH**



# Drug Dispensation



Dispensation

Name: Test test      Gender: M  
Date Of Birth: 01/Jan/1980

**R<sup>x</sup>**  
Prescribed

History

Medication	Amount in stock	Amount needed	Amount dispensed	Reset
HCZ (25mg tablet)	-	0	30	
Enalapril (5mg tablet)	-	0	30	
TDF300/3TC300/DTG50	-	0	30	
HCZ (25mg tablet)	-	28	0	

Scan barcode or QR Code

CANCEL

AT most ART sites in Malawi, HIV drug are dispensed within the ART consultation room while NCD drugs are dispensed in a pharmacy. The Printout from ART shows all drugs prescribed






# Patient Dashboard



Name: **Test test**  
Birthdate: **01/Jan/1980 (43)** (P170000001496)  
Current Village: **Adam Kameme II**  
Phone#: **Unknown**

ART- Start Date: **19/03/2023 (0 Month(s))**  
ARV Number: **MPC-ARV-48** | Regimen: **13A**  
File Number: **FN300056**  
Current Outcome: **Defaulted**



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**2 Visits**

15/Apr/2023 >

19/Mar/2023 >

Today's Date: **22/Mar/2024**      Next Task: **NONE**      **BDE: 15/APR/2023**

**9 Activities**

HIV RECEPTION 16:44

VITALS 16:44

HIV CLINIC CONSULTATION 16:46

**0 Lab Orders**

**2 Alerts**

Side effects 0

Patient BMI is overweight

**9 Medications**

HCZ (25mg tablet) 16:55

Enalapril (5mg tablet) 16:55

TDF300/3TC300/DTG50 16:55

TASKS      PRINTOUTS/OTHER      APPLICATIONS      FINISH



# Hypertension Report



Hypertension Report  
Period (01/Jan/2020 to 21/Mar/2023)

#	Age group	Gender	Screened for HP	Normal <140/<90	Mild 140-159/90-99	Moderate 160-180/100-110	Severe >180/>110	Hydrochlorothiazide 25mg
1	20-24 years	Female	0	0	0	0	0	0
2	25-29 years	Female	1	0	0	0	1	0
3	30-34 years	Female	0	0	0	0	0	0
4	35-39 years	Female	0	0	0	0	0	0
5	40-44 years	Female	0	0	0	0	0	0
6	45-49 years	Female	0	0	0	0	0	0
7	50-54 years	Female	0	0	0	0	0	0

CSV PDF FINISH





# Further Enhancement to the HTN Tool

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Prompt to check for complications

Include other drug classes not here

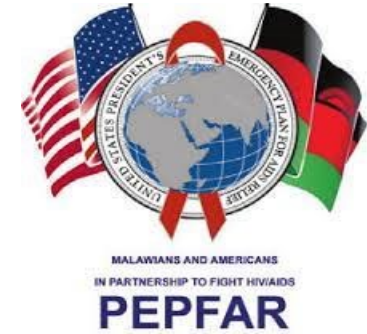
Patient dashboard to include an alert for all hypertensive patients

Include other drugs such as statins





**Elizabeth Glaser  
Pediatric AIDS Foundation**  
Fighting for an AIDS-free generation



**Thank you**



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[www.pedaids.org](http://www.pedaids.org)