Conflict of Interest

The author has declared no conflict of interest.

Hypertension management in MSF programmes in Jordan and Zimbabwe: Opportunities for simplification and use of fixed-dose combination medications

Shefali Oza, Philippa Harris, Eimhin Ansbro, Pablo Perel, Marthe Frieden, Blessing Zamba, Munyaradzi Mukuzunga, Justice Mudavanhu, Mais Harawi, Satish Devkota, Muhammad Shoaib, Amulya Reddy, Philippa Boulle, ***Helen Bygrave***

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

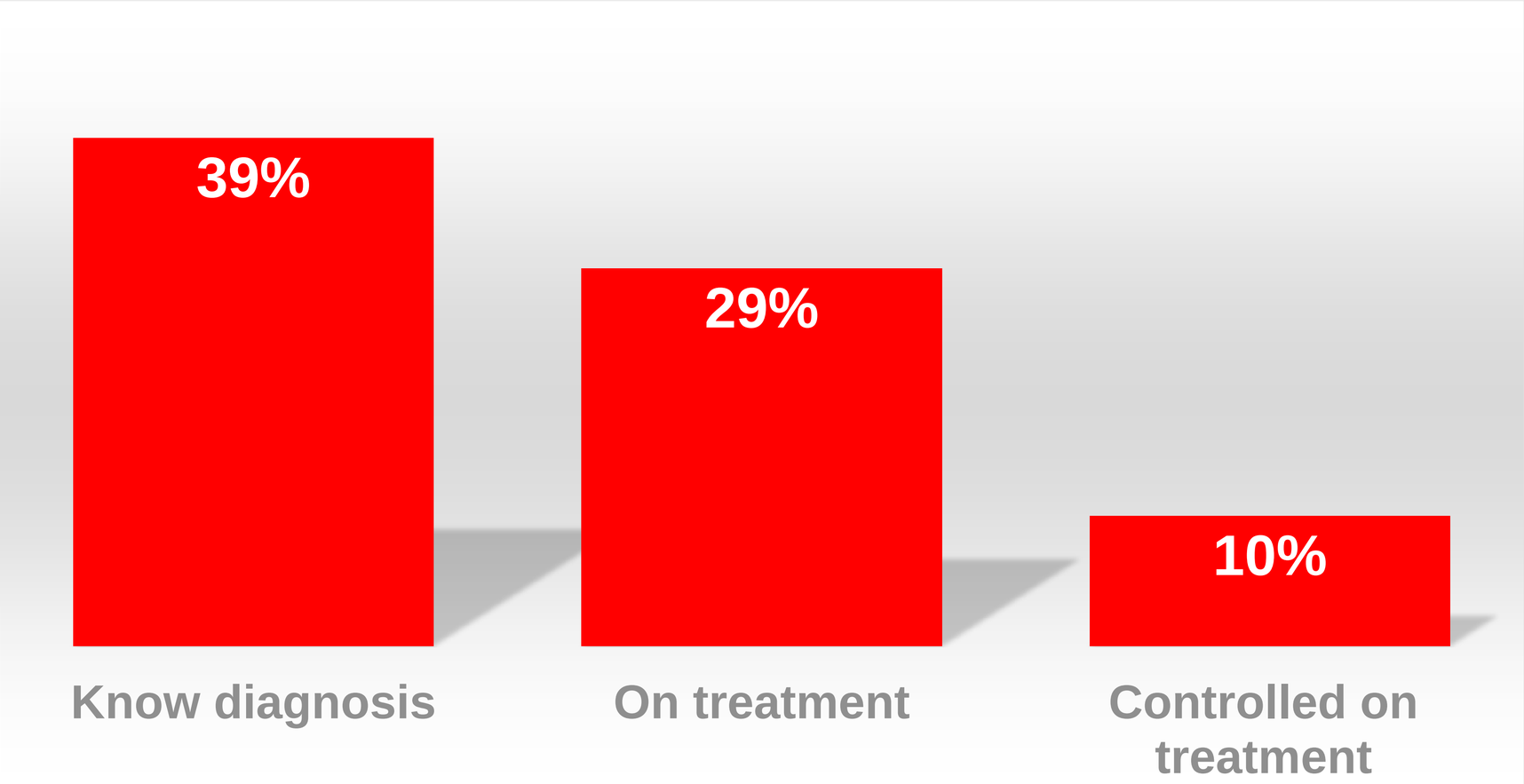
Hypertension: Global burden of disease

- An estimated 17.9 million people died from cardiovascular disease (CVDs) in 2018 (WHO)
- This represents 31% of all global deaths
- Hypertension is responsible for approximately half of all heart disease and stroke deaths
- Over three quarters of CVD deaths take place in low- and middle-income countries
- Prevalence of hypertension in low and middle income countries is 32.3% (Sarki et al, Medicine 2015)

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Hypertension cascade in low and middle income countries

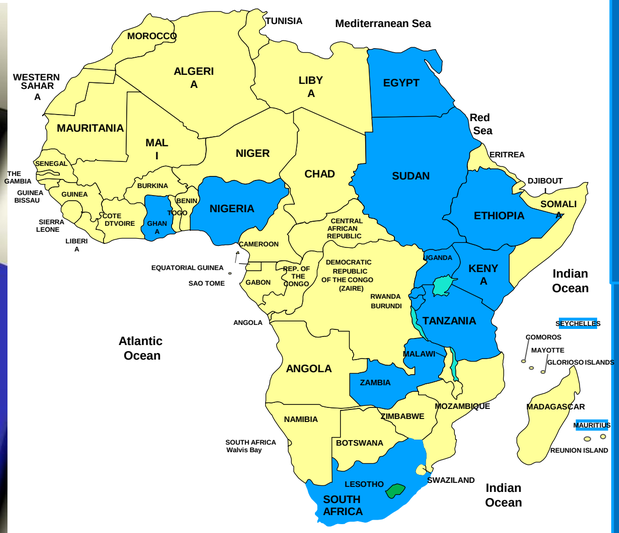


Geldsetzer et al. Lancet. 2019;394(10199):652-62.

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Not a new disease
Why are we doing so badly?



Clinical
Public health approach

Programmatic
How to do?

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Current Guidelines

Multiple titration steps

“ There’s no way you’re going to get nurses here to follow that”

Multiple drug classes and doses (impacting on supply chain and adherence)

Different algorithms for different patient groups (Blood Pressure (BP) alone, diabetics, chronic kidney disease, ischaemic heart disease)

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

“I wish the number of tablets could be reduced”

Lillian Tandaanguni needs **9 pills a day** to manage her hypertension and diabetes

Objectives

In two MSF projects treating hypertension in Jordan and Zimbabwe, we aimed to analyse:

- **Retention in care**
- **BP control**
- **Antihypertensive prescribing patterns to determine the proportion of patients who may benefit from a fixed dose combination (FDC) (those currently treated with more than one drug class)**
- **The extent of clinical inertia- how well are the guideline steps being followed?**

Study Settings

Irbid Jordan

Peri-Urban
Syrian refugees and local Jordanian population

Doctor led
All MSF Staff
Data from October 2016 to December 2018

Mutare and Chipinge Zimbabwe

Rural
Local population

Nurse led
Ministry of Health (MoH) Staff mentored by MSF
Data from May 2016 to July 2019

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Cohort Description

	Jordan (n=3305)	Zimbabwe (n=3957)
Sex (F)	62.7%	80.4%
Median Age (IQR)	61 (53-69)	63 (53-70)
Retention in care at 12 months	98%	57%
BP Control at 12 months (<140/90)	77%	42%

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Prescribing Patterns

Number antihypertensive drug classes	Jordan			Zimbabwe		
	Baseline (%)	12 months in care (%)	Change	Baseline (%)	12 months in care (%)	Change
1	30	19	-11	38	26	-12
2	42	40	-2	46	46	0
3	19	28	+9	7	17	+10
4-5	4	11	+7	<1	1	1

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Blood pressure control and number of BP drug classes used

Number antihypertensive drug classes	Jordan	Zimbabwe
	BP control at 12 months in care (%)	BP control at 12 months in care (%)
1	86	54
2	71	40
3	64	27
4-5	55	25

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Clinical Inertia

Jordan		Zimbabwe	
No medication change for uncontrolled BP at next visit (n=2325)	No medication change at visit with BP > 160/100 (n=545)	No medication change for uncontrolled BP at next visit (n=7497)	No medication change at visit with BP > 160/100 (n=2549)
79.3%	28.6%	63.5%	53.5%

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Key Messages

- Majority of patients (79% and 64%) at 12 months were on 2 or more antihypertensive drug classes
- Rates of retention and control at 12 months very different in Jordan v Zimbabwe
- Clinical inertia one factor in not achieving BP control – more marked in Zimbabwe setting
- Unable to assess adherence in this study

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Could we adapt guidelines?

Optimize

Fewest formulations, smallest pill burden, least toxic requiring minimal monitoring

Harmonize

Same algorithm across populations

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

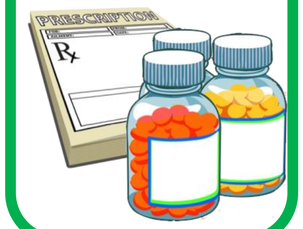
SCIENTIFIC DAYS

POTENTIAL IMPACT OF FDCs ON PATIENT AND HEALTH SYSTEM FACTORS

Protocol

Simpler treatment algorithm

Medication Supply



Fewer stockouts

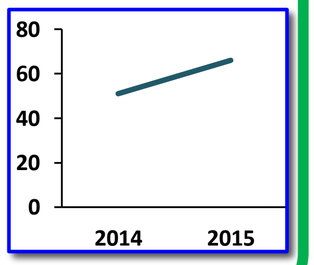
Community-Based Treatment

Enhanced task sharing

Patient-Centered Care

Lower pill burden

Information Systems



Better control rates

Kishore SP et al . Fixed-dose combinations for hypertension. *Lancet*. 2018;392(10150):819–820

Gupta AK et al Compliance, safety, and effectiveness of fixed-dose combinations of antihypertensive agents: a meta-analysis. Hypertension 2010;55:399–407

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

Slide Acknowledgement Dr S Kishore

SCIENTIFIC DAYS

Opportunities for simplification, optimisation and harmonisation with Fixed Dose Combinations (FDC)

- FDCs Included in

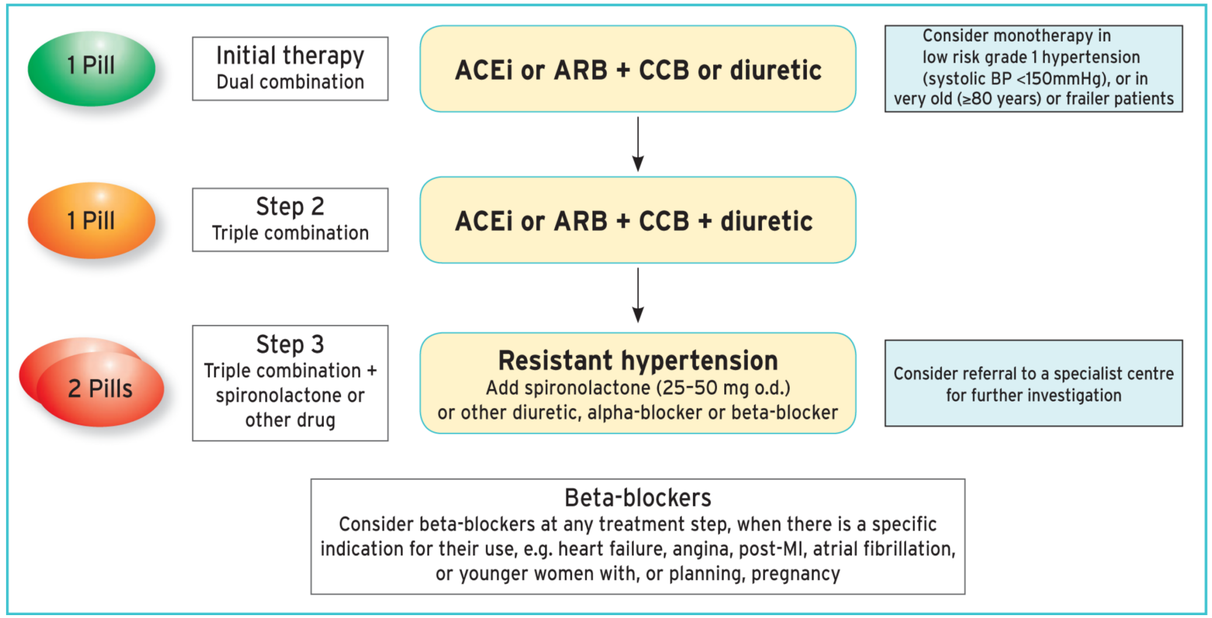
  ✓WHO Global HEARTS guideline

  ✓European guideline 2018

  ✓US guidelines 2018

  ✓MSF

- FDC Included in WHO Essential medicines list 2019 (*Kishore SP et al, Modernizing the World Health Organization List of Essential Medicines for Preventing and Controlling Cardiovascular Diseases. J Am Coll Cardiol. 2018;71(5):564-74.)*



MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS

Implementation Challenges

- Procurement
- Introduction in national guidelines in the countries where MSF works
- Where they are in guidelines (e.g Kenya), changing prescribing patterns of clinicians – investment in training

Thanks to the clients, MSF and MoH teams in Jordan and Zimbabwe

Colleagues at LSHTM

Can we make this pharmacist's life and patients' hypertension treatment easier ?

MEDECINS SANS FRONTIERES
DOCTORS WITHOUT BORDERS

SCIENTIFIC DAYS