THE GEORGE INSTITUTE
for Global Health

# Treatment Gaps and Barriers to control of Hypertension

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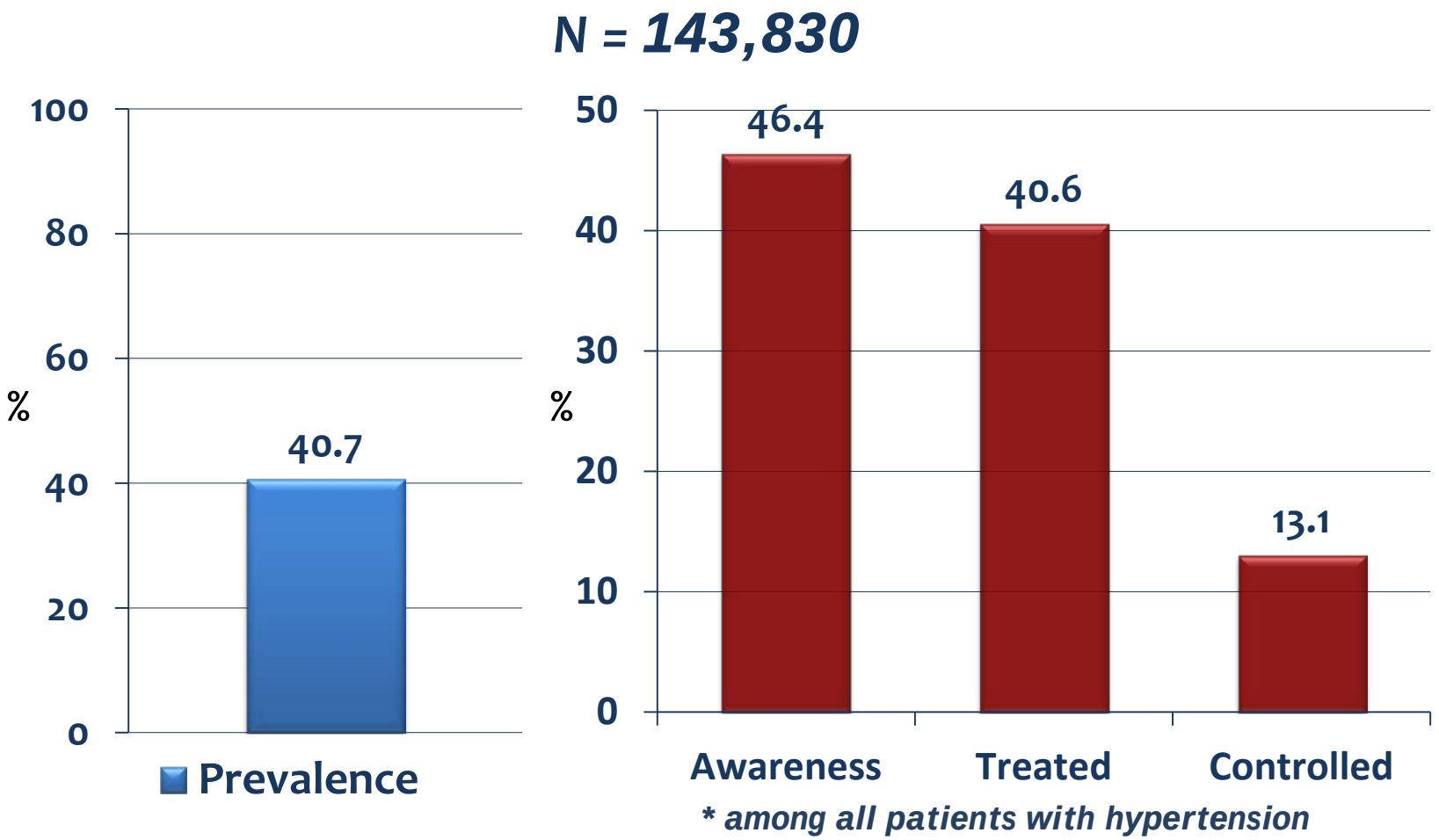
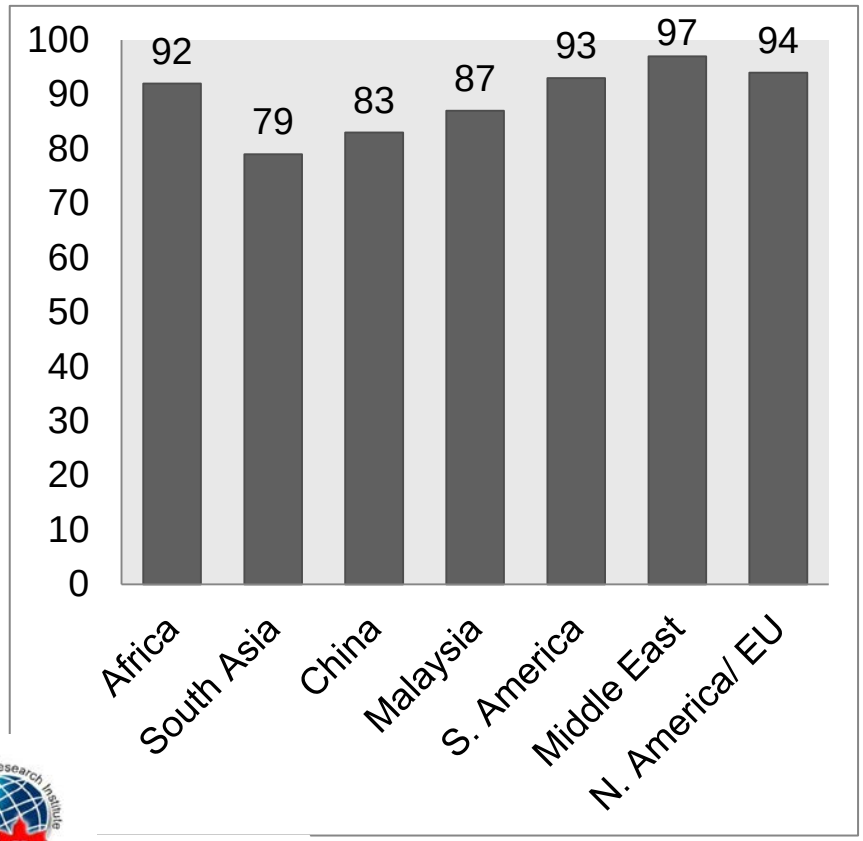
# Hypertension prevalence, awareness, treatment & control

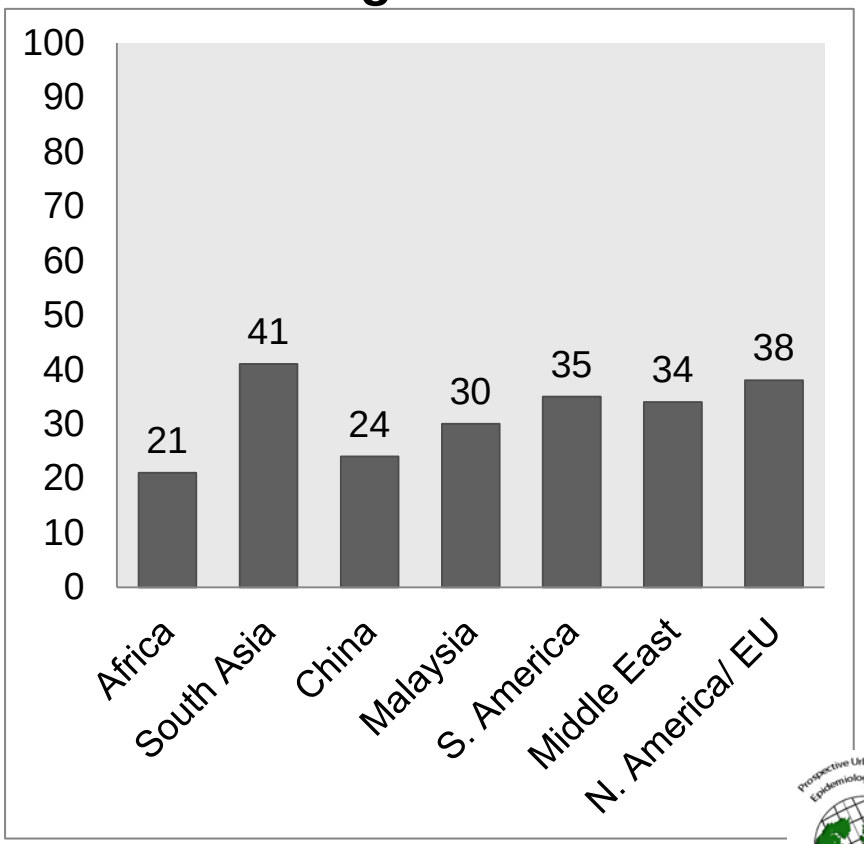


# The gap in control of blood pressure

**Treated among those aware of their HT**



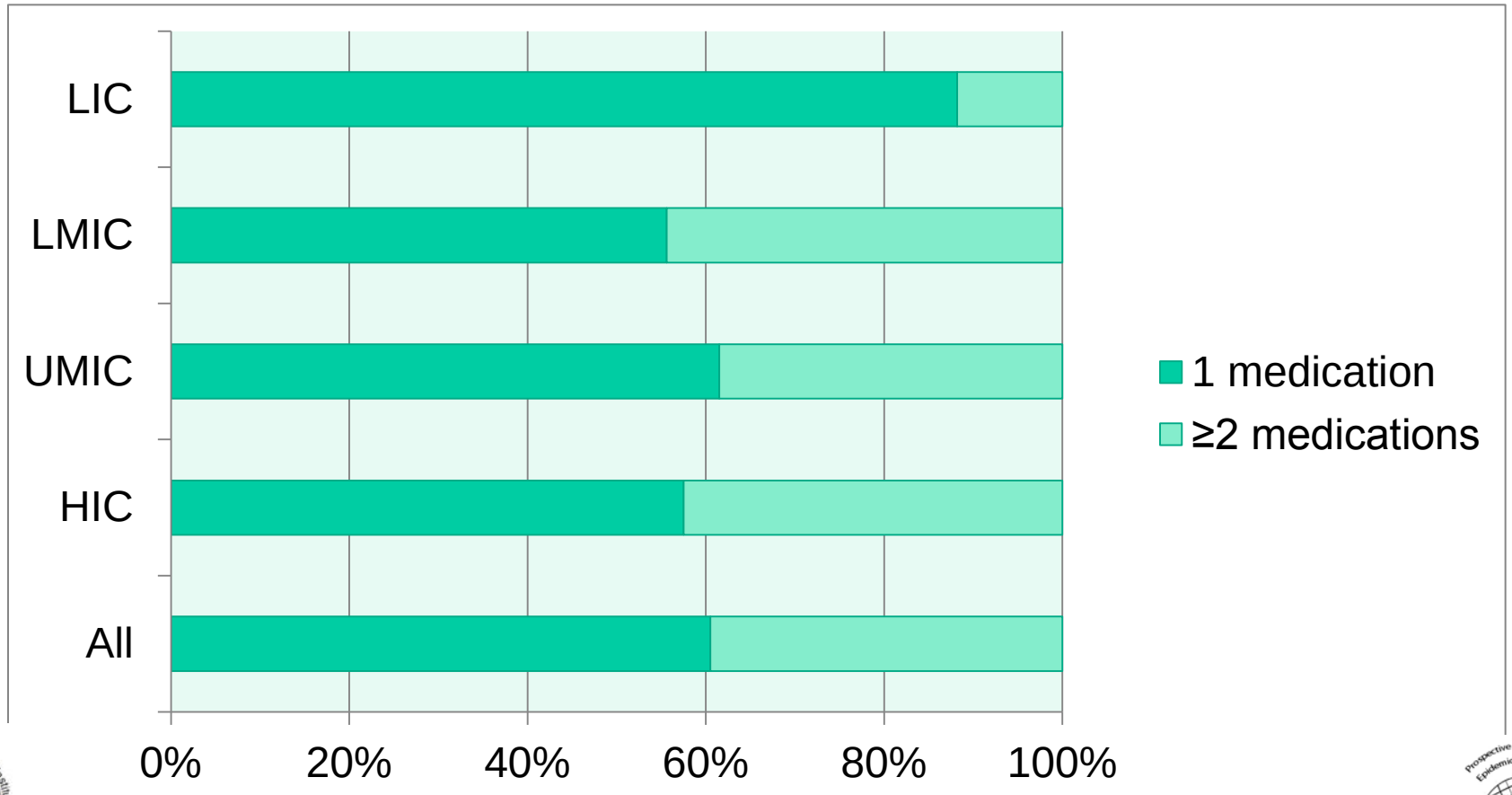

**Controlled BP (<140/90) amongst those receiving treatment**



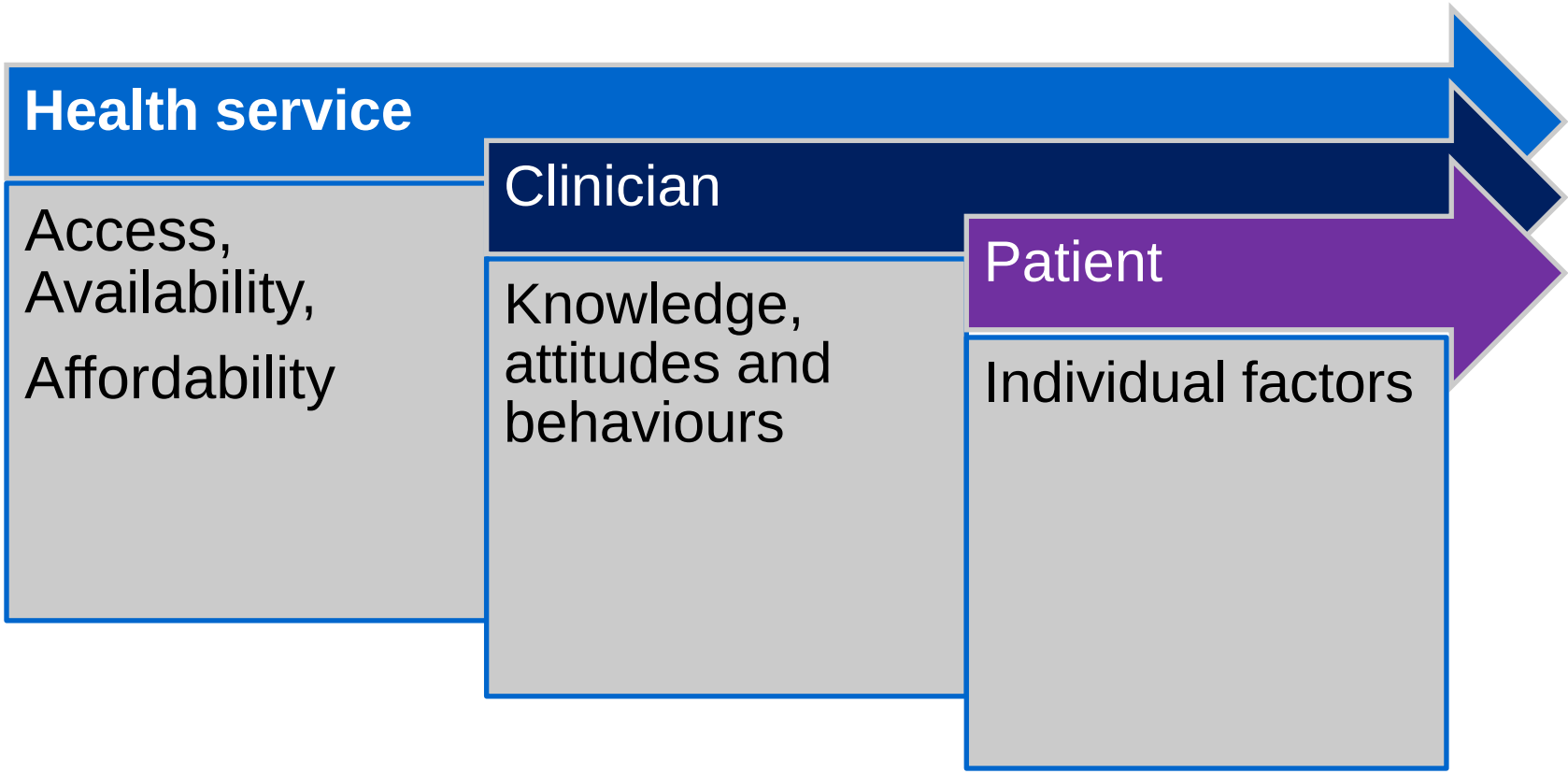

Population Health Research Institute
Health Through Knowledge
PHRI

Prospective Urban and Rural Epidemiological Study
PURE

# Treatment of hypertension – No. of BP lowering medications

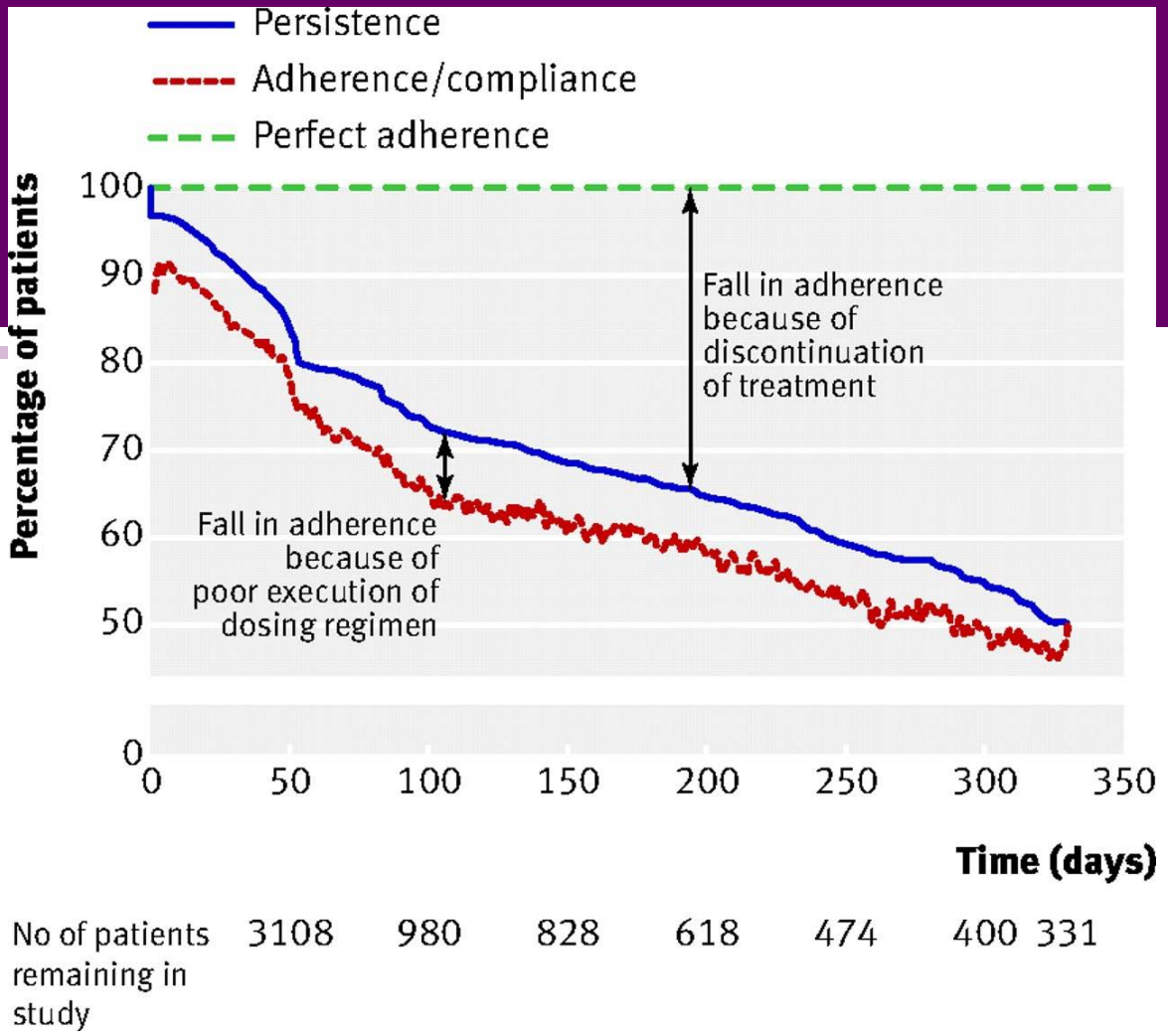


# Barriers to HT control



# Adherence

Data from 4783 patients with HT in phase IV clinical studies monitored with a medication event monitor (MEMS), archived in database for 1989 – 2006

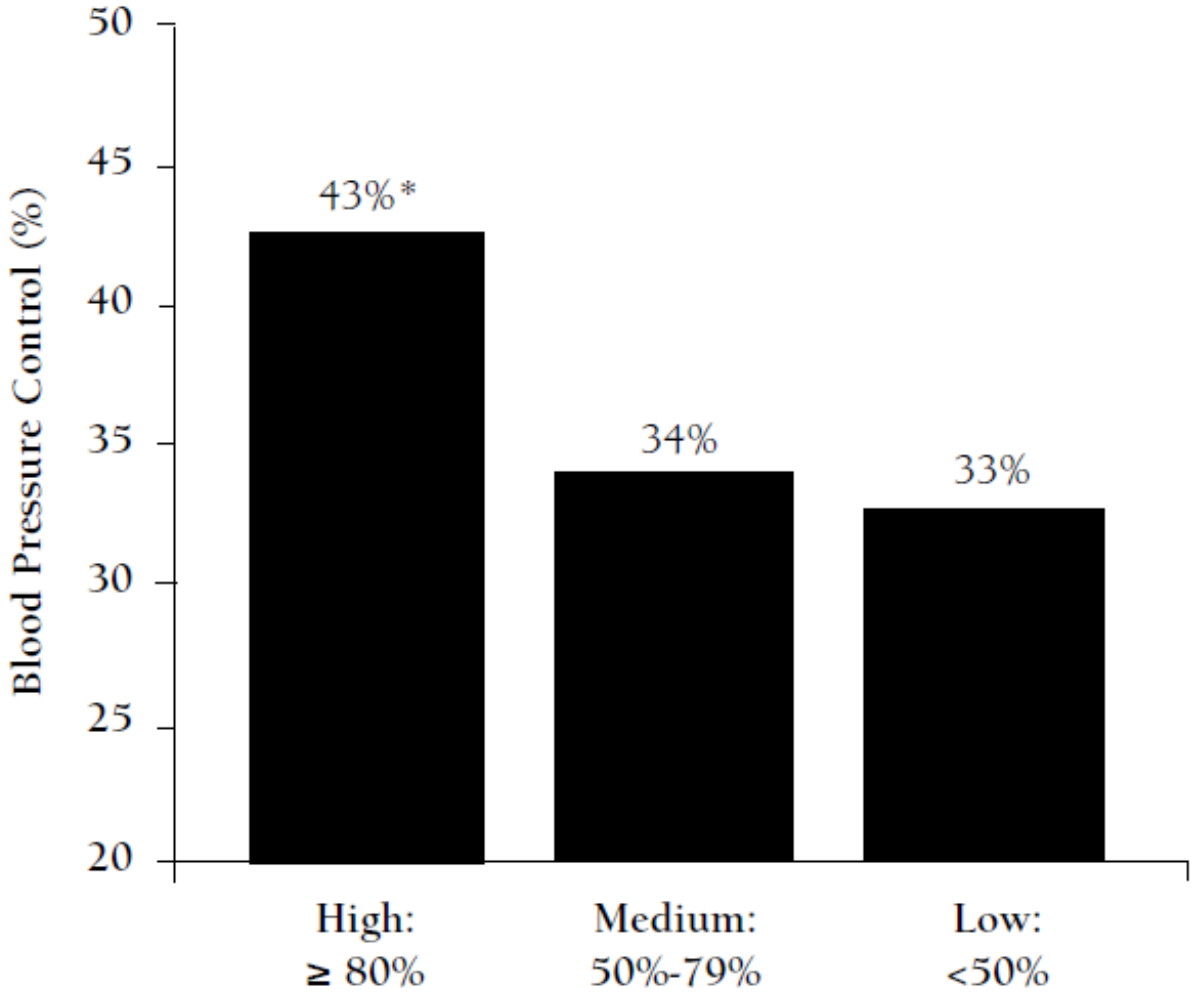



**About half of the patients who were prescribed an antihypertensive drug had stopped taking it within 1 years. On any day, patients were still engaged with the drug dosing regiment omitted about 10% of the scheduled doses: 42% of these omissions were of a single day's dose, whereas 43% were part of a sequence of several days. About half of patients had at least one drug holiday a year.**

**Morning takers were more likely to take meds than evening takers (1.38, 1.36 – 1.41). Sunday morning was when morning takers missed most doses.**

Vrijens. BMJ 2008 17;336(7653):1114-7

# BP Control by category of medication adherence

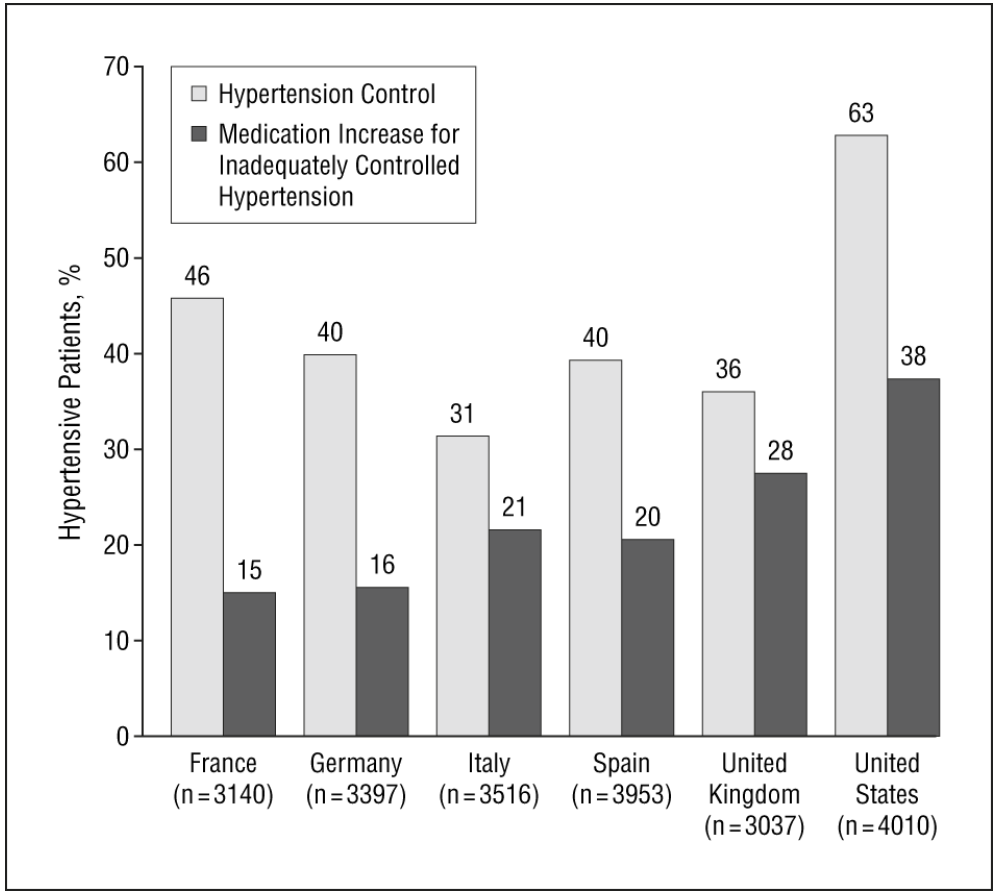



**P= 0.06 prior to adjustment; P = 0.026 in regression analysis*

Bramley J Manag Care Pharm. 2006;12(3):239-45 [7]

# Cross-country differences in control and medication increases

Data from 21,053 hypertensive patients visiting 291 cardiologists and 1284 primary care physicians, Cardiomonitor 2004



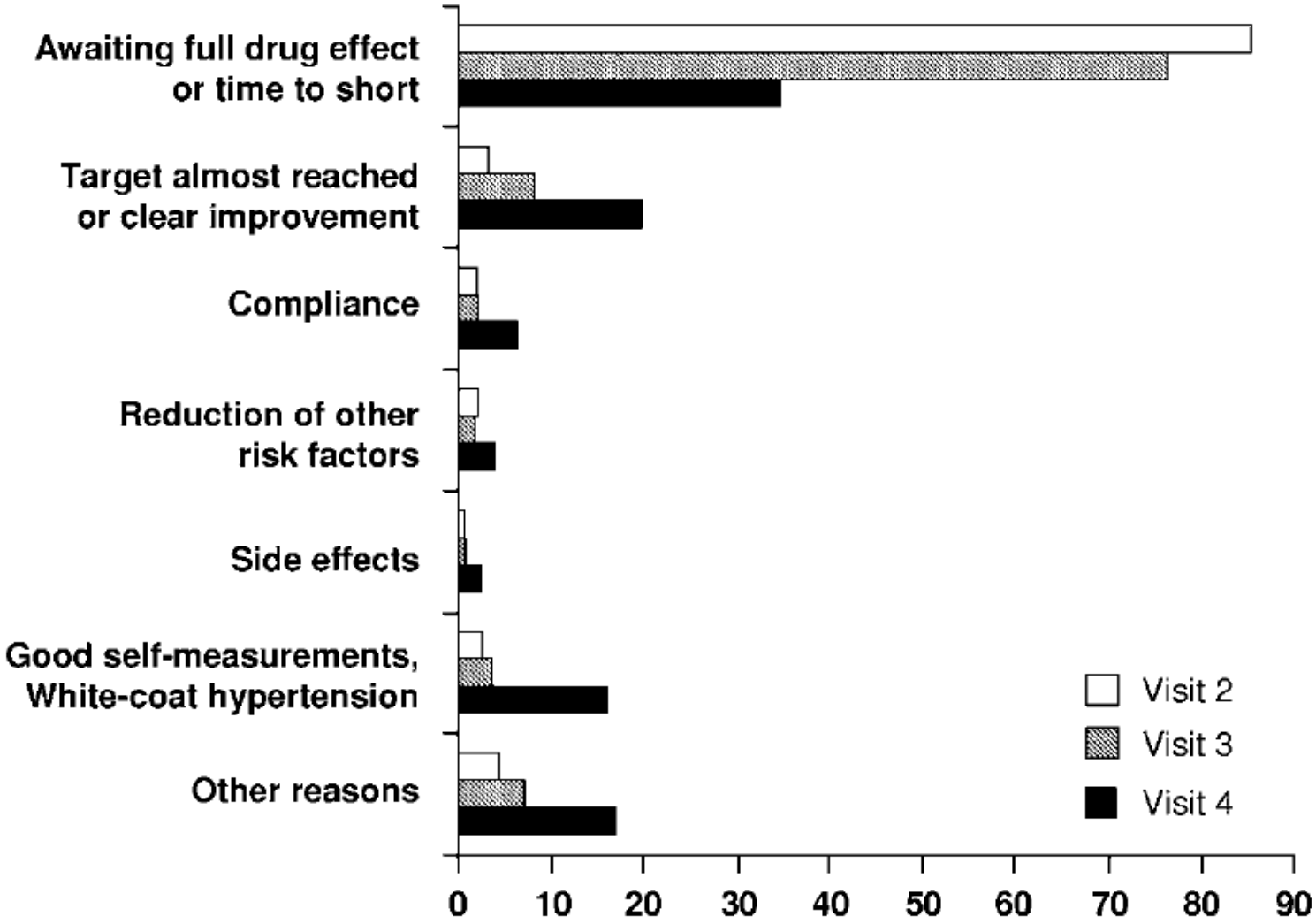

Medication increases were a dose escalation or an addition to or switch of drug therapy

Wang *Arch Intern Med. 2007;167:141-147*

# Reasons for not Intensifying Antihypertensive Treatment (RIAT) survey

- Representative samples of physicians in 16 countries, 1596 centres in Latin America, Eastern Europe, Africa, Asia enrolled hypertensive patients
- 32,224 (91.4%) complete follow up to visit 4
- Mean interval between each visit ~1month
- Baseline BP 159/95
- Most physicians defined a target BP for their patients identical or lower than the one specified by national or international guidelines

# Reasons for not Intensifying Antihypertensive Treatment (RIAT)



# Physician perceptions about BP targets and acceptable BP levels

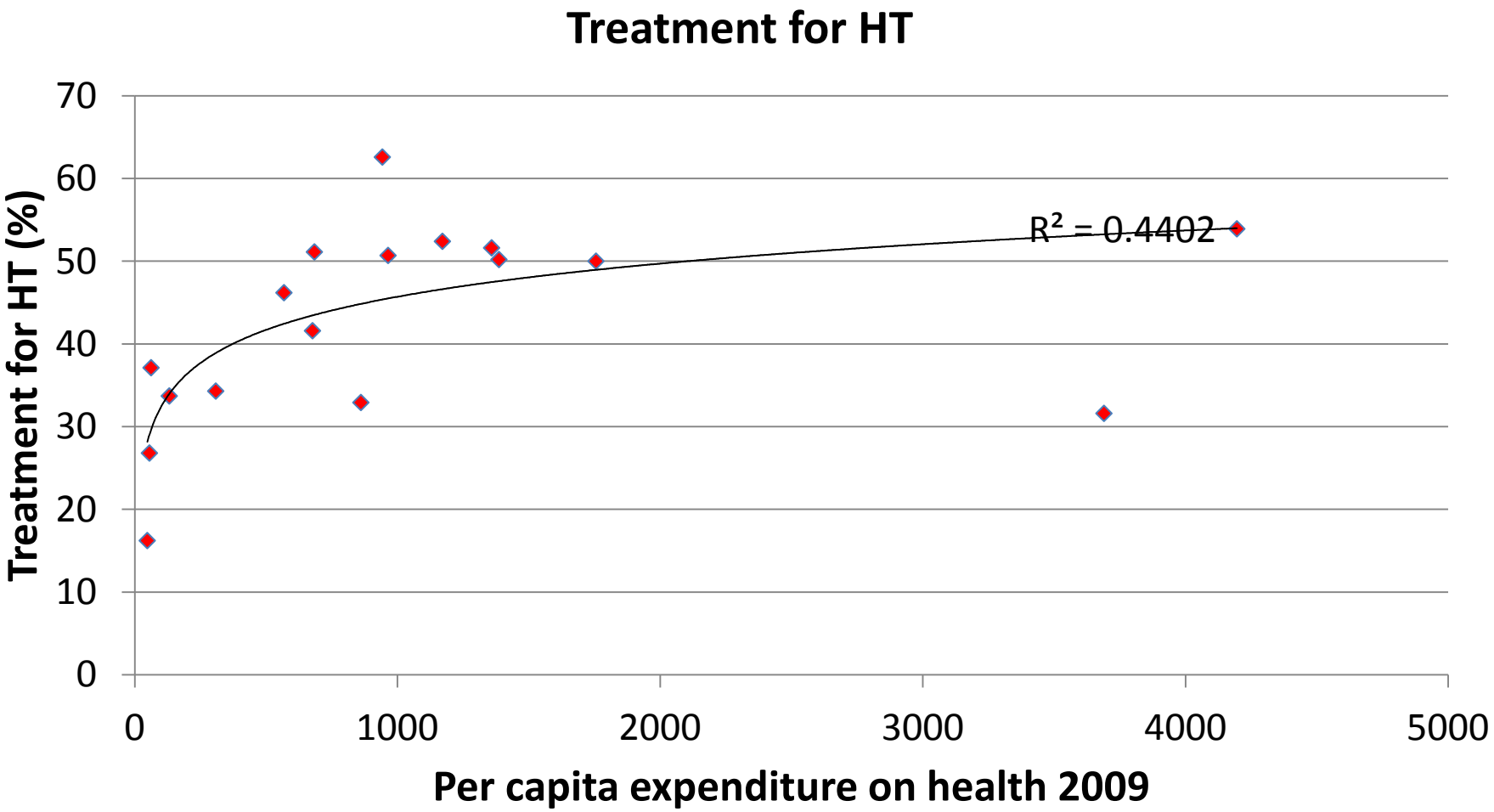
- Survey of 2629 European physicians in 2009
- 95% of physicians felt that patients SBP needed to be higher than the guideline recommended goal levels before taking immediate action
- The mean levels of SBP/DBP that physicians reported they were satisfied with - 132/82, concerned about – 149/92, or would cause them to take immediate action was 168/100



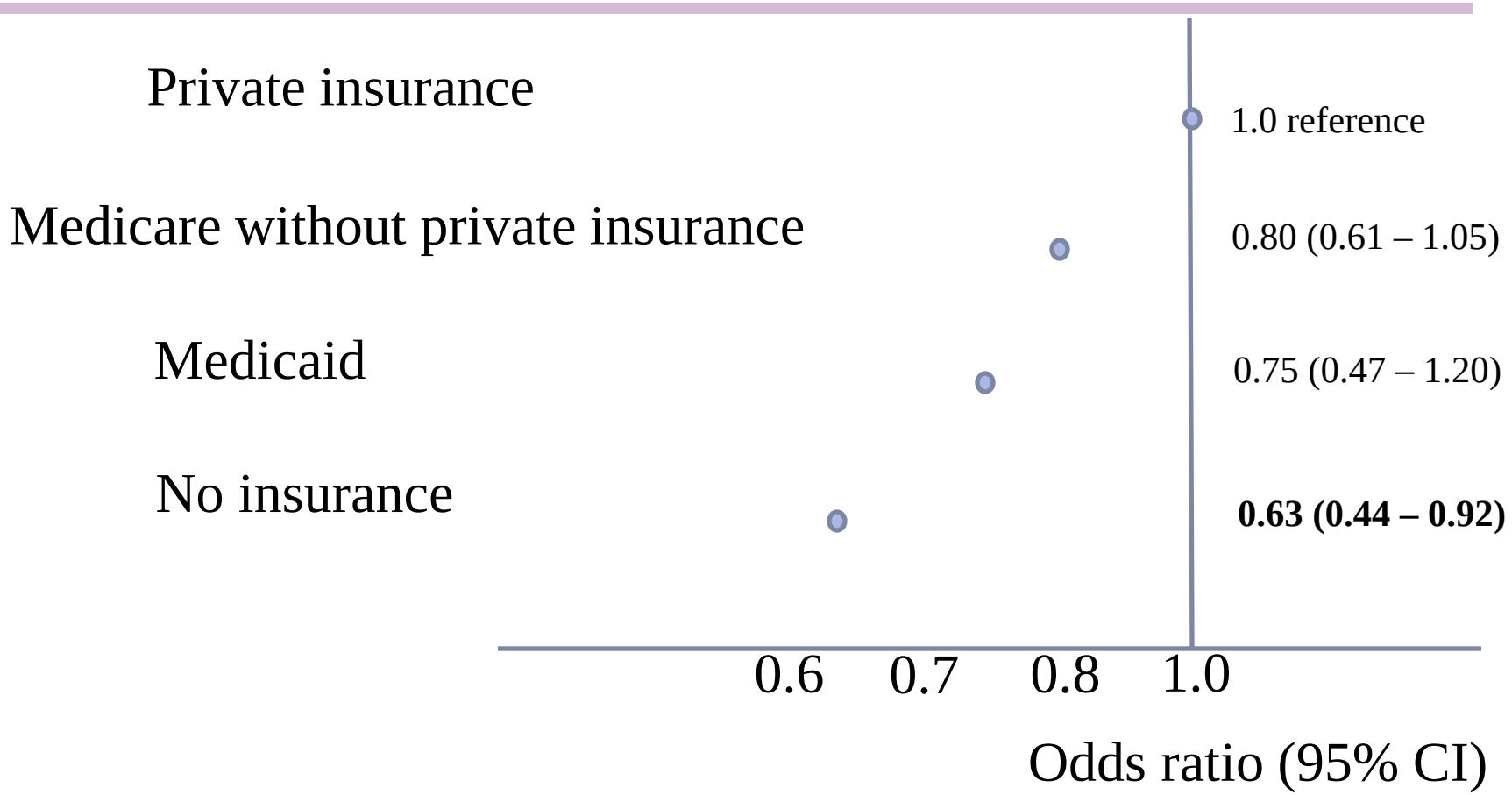
Redon Journal of Hypertension 2011, 29:1633–1640

# Access, Availability & Affordability of treatments

# Relation of per capita health expenditure to Treatment for HT



# Adequate BP control and health insurance status




Adjusted odds ratios of adequate hypertension control among 1999–2002 NHANES participants, by insurance status

Kenrik Am J HT 2007;20:348–353

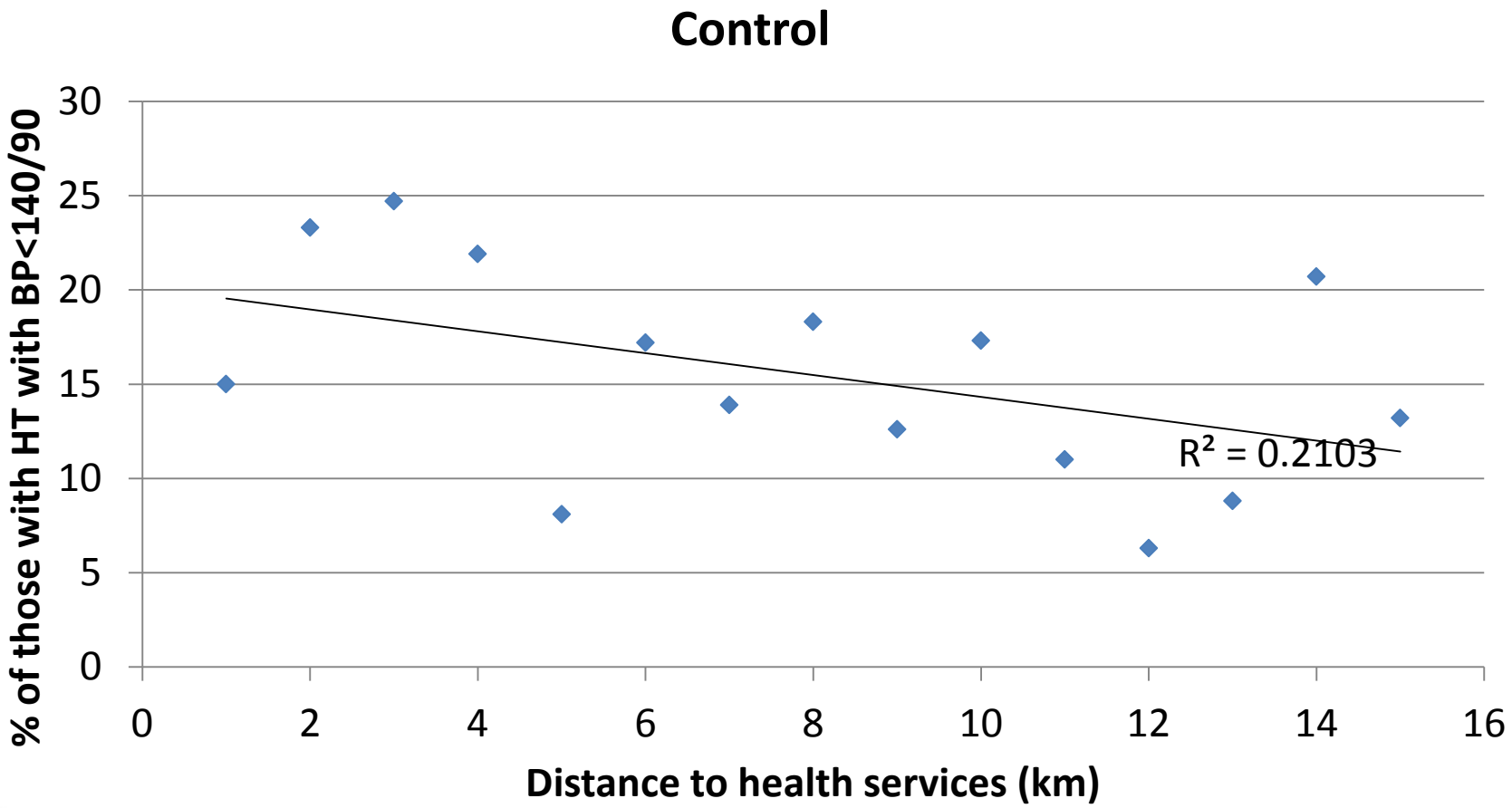
# No. of days of income required to meet cost of 1 month medications

| | B-block | Diur | ACE/ARB | CCB |
|---|---|---|---|---|
| *Overall* | *4.9* | *4.1* | *7.8* | *9.4* |
| HIC | 2.2 | 1.1 | 3.1 | 3.2 |
| UMIC | 4.1 | 7.2 | 4.2 | 5.2 |
| LMIC | 6.4 | 1.1 | 14.3 | 22.2 |
| LIC | 9.4 | 0.3 | 17.6 | 14.3 |

*Zimbabwe & Bangladesh not included in this analysis

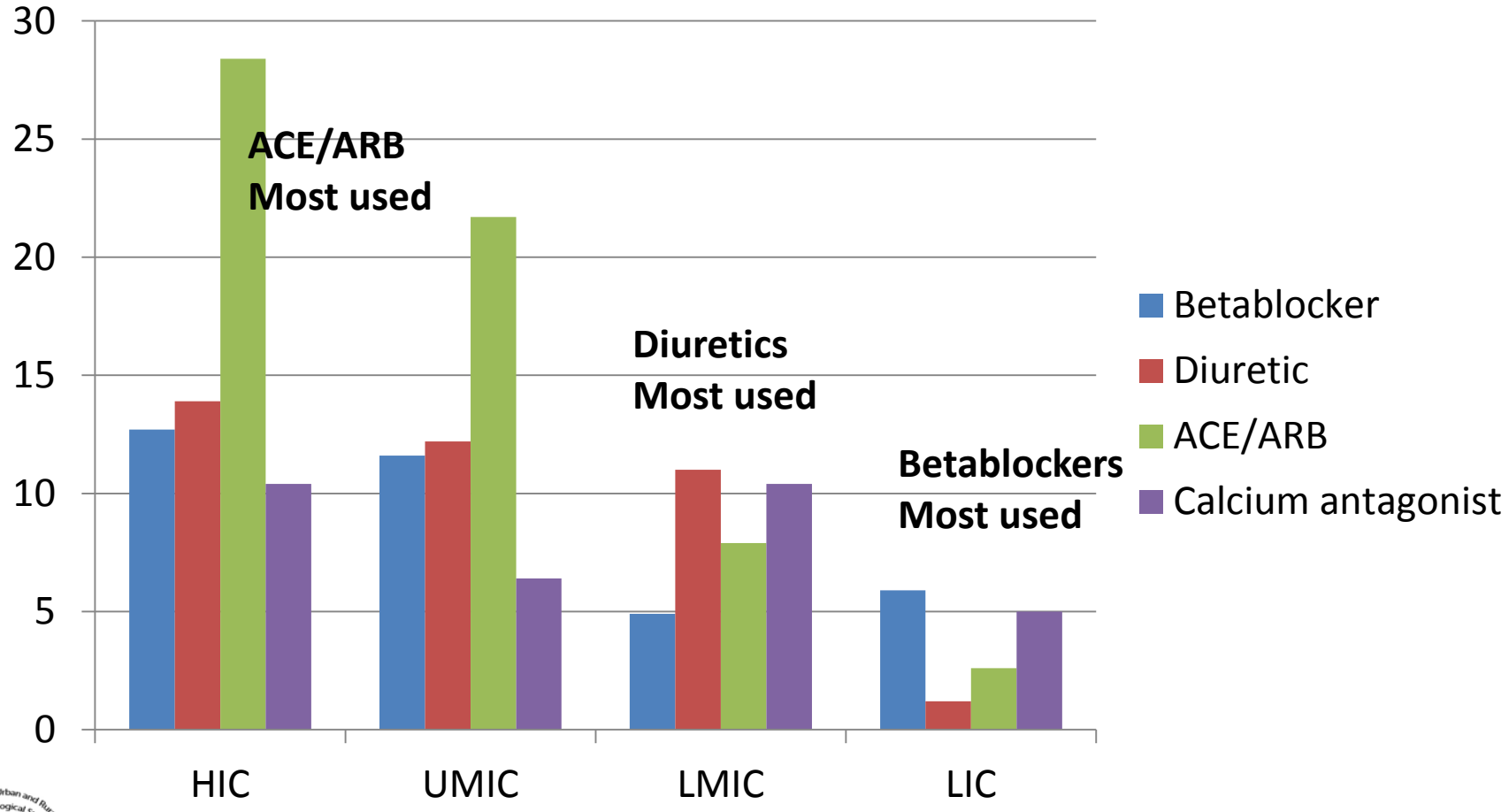
Unpublished, EPOCH & PURE

# Distance to health services and Control

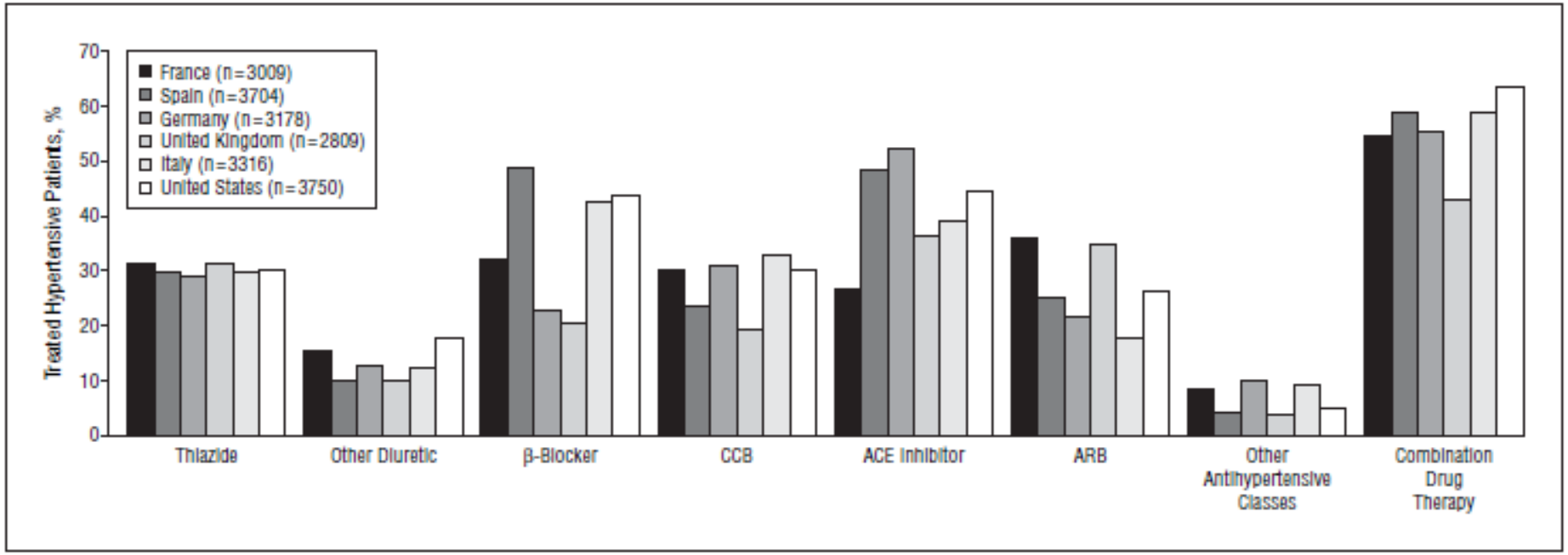



Unpublished, EPOCH & PURE

# Types of treatments for HT by economic status of country



# Cross-country differences in use of antihypertensive drug classes

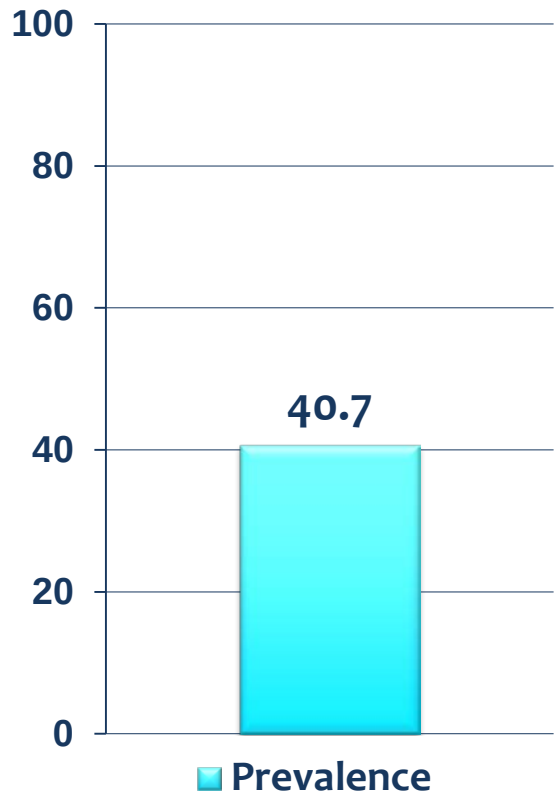


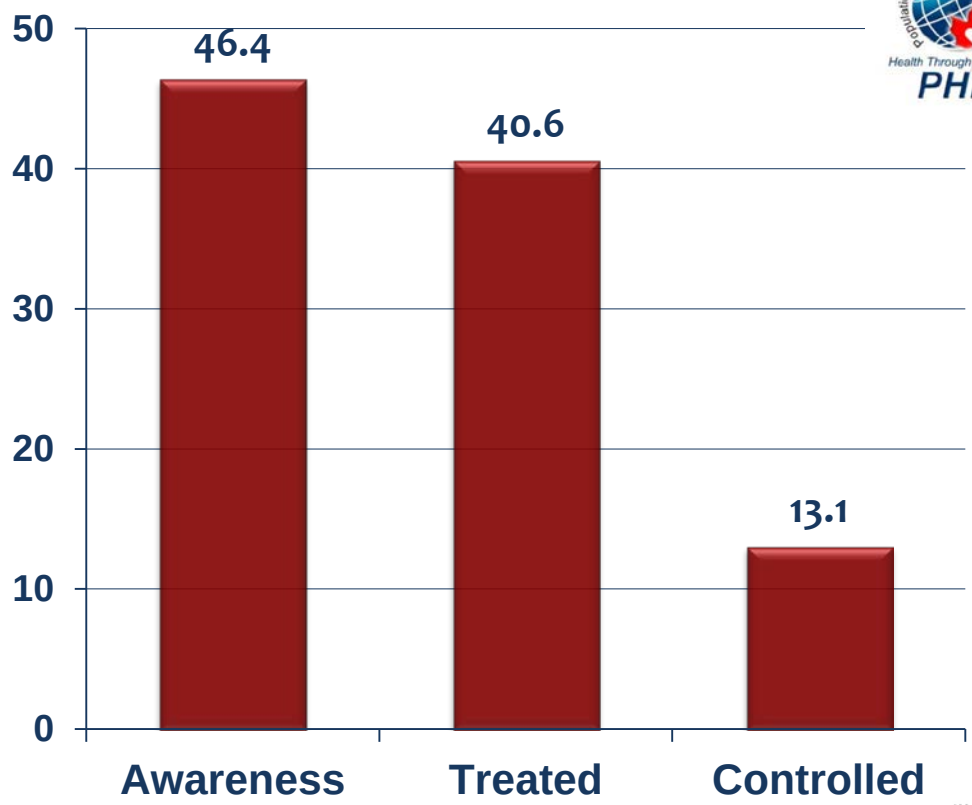
# Conclusions

- Control of hypertension is poor globally
- Patient adherence and Physician inertia appear to be common barriers
- Health system level barriers are likely to be more complex and vary across settings

# RESERVE

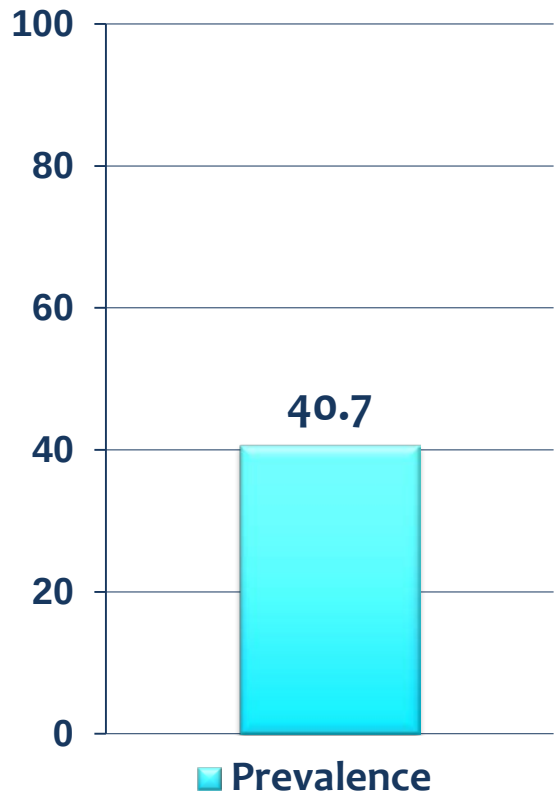
# Awareness, Treatment and Control of hypertension (PURE study)

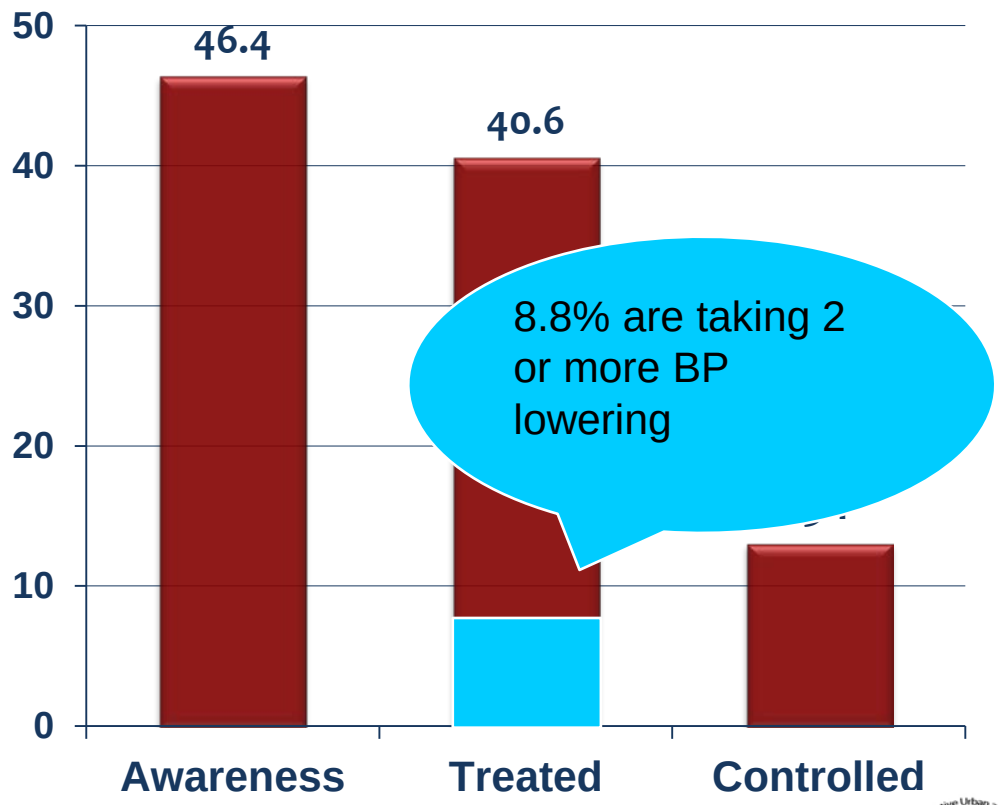



***N = 143,830***

# Awareness, Treatment and Control of hypertension (PURE study)




10 A decade of DISCOVERY · INNOVATION · IMPACT

***N = 143,830***

PURE

# Reasons quoted for treatment inertia

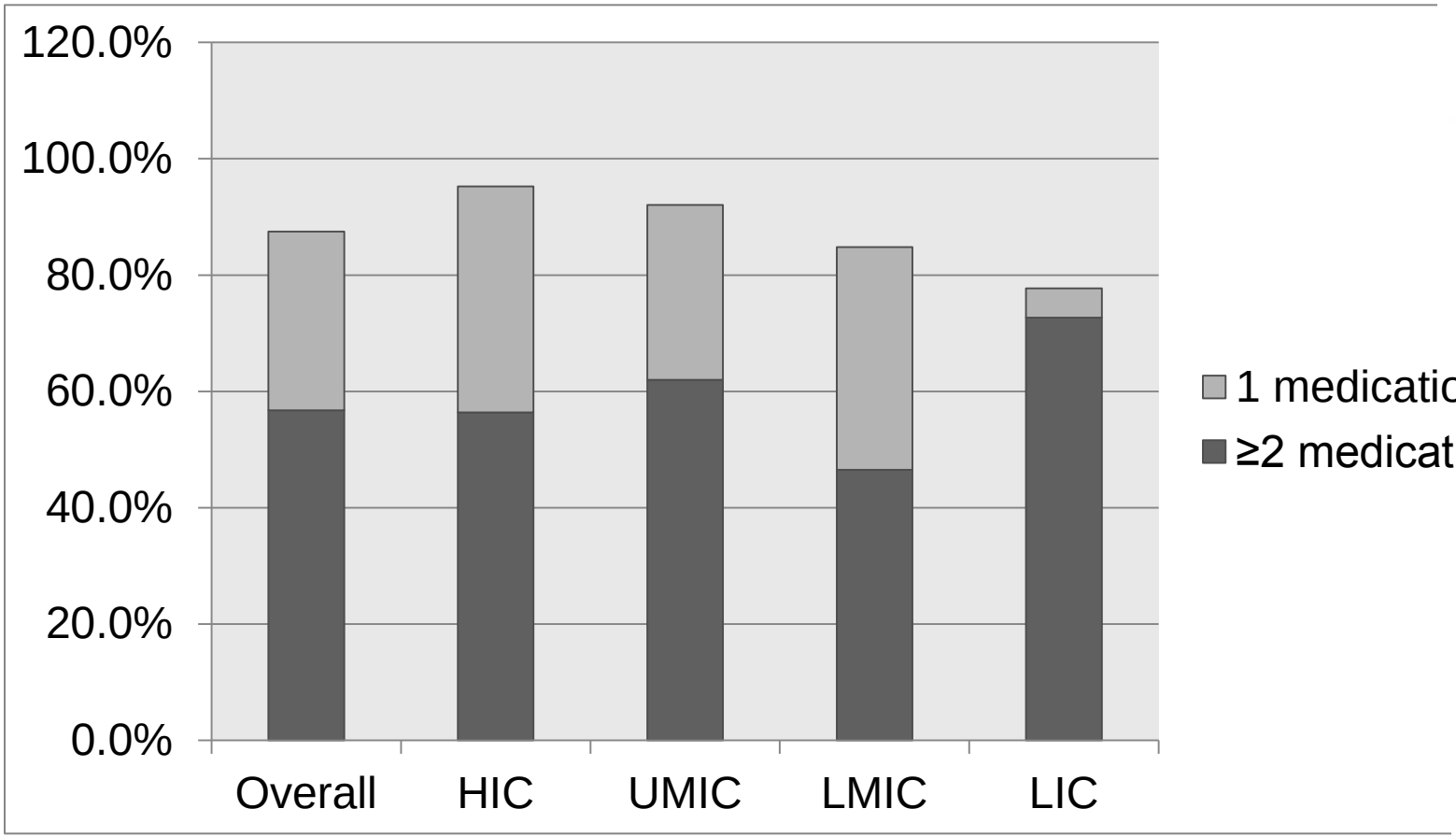
- Awaiting full drug effect or time to short;
- Target almost reached or clear improvement;
- Poor compliance;
- Reduction of other risk factors;
- Side effects; and
- Good self-measurements or white-coat hypertension

**‘Reasons for not Intensifying Antihypertensive Treatment' (RIAT)** Ferrari J Hum HT(2009) 23, 151–159
Representative samples of physicians in 16 countries in Latin America, Eastern Europe, Africa, Asia
1596 centres, 32224 with complete follow up to visit 4

# No. of medications for HT in patients with HT

| | No. of BP lowering medications | | | |
|---|---|---|---|---|
| | **0** | **1** | **≥2** | **(% ≥2)** |
| *Overall* | *68.4* | *19.2* | *12.4* | *(39)* |
| HIC | 57.2 | 24.6 | 18.2 | (57) |
| UMIC | 62.3 | 23.3 | 14.4 | (38) |
| LMIC | 68.2 | 17.7 | 14.1 | (44) |
| LIC | 86.5 | 11.9 | 1.6 | (12) |

# Treatment of hypertension – No. of BP lowering medications



# Treatment of hypertension – No. of BP lowering medications