

A Structured Patient Empowerment Programme (PEP) To Manage Patients With Hypertension In Hougang Polyclinic

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POLYCLINICS

Introduction

- Hypertension is a major risk factor for:
Coronary Heart Disease
Cerebrovascular Disease
- Accounted for nearly 29% of all deaths in 2004
- Prevalence of hypertension among Singapore residents aged 30 to 69 years was 24.9% and 20.1% of those aged 18 to 69 years had high blood pressure in 2004

(The Singapore National Health Survey 2004)

- Important to maintain good blood pressure control at all times

Average Monthly Attendances (Hougang Polyclinic)

Asthma	150 - 200
Diabetes Mellitus	3000 - 3300
Dyslipidaemia	1100 - 1300
Hypertension	3300 - 3500

Self Management Programme

- **Self-Management Support** has shown to reduce hospitalisations, utilisation of emergency department resources and overall managed care costs, although the cost of self-management interventions in individual non-managed care practices has yet to be determined.

Bodenheimer, T., Wagner, E.H., & Grumbach, K. (2002). Improving primary care for patients with chronic illness. *Journal of the American Medical Association*, 288 (14): 1775-1779.

Lorig, K.R., Ritter, P., Stewart, A.L., Sobel, D.S., Brown, B.W. Jr., Bandura, A., Gongalez, V.M., Laurent, D.D. & Holman, H.R. (2001). Chronic disease self-management program: 2-year health status and health care utilization outcomes. *Medical Care*, 39 (11): 1217-1223.

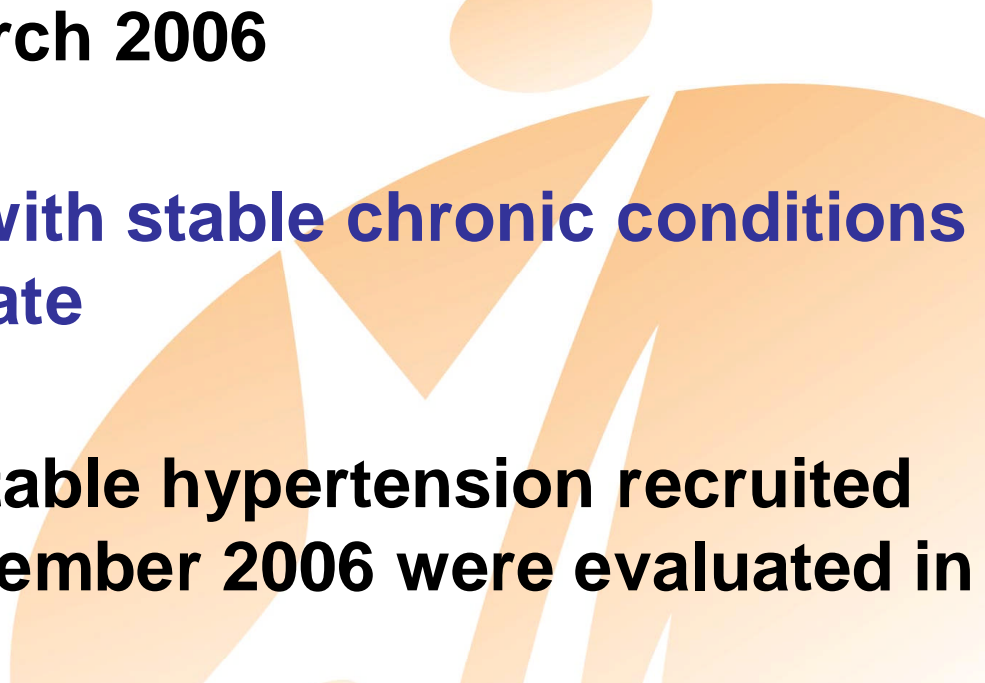
Renders, C.M., Valk, G.D., Griffin, S.J., Wagner, E.H., Eijk Van, J.T. & Assendelft W.J. (2001). Interventions to improve the management of diabetes in primary care, outpatient, and community settings: a systemic review. *Diabetes Care*, 24: 1821-1833.

Whitlock, W.L., Brown, A., Moore, K., Pavliscsak, H., Dingbaum, A., Lacefield, D., Buker, K. & Xenakis, S. (2000). Telemedicine improved diabetic management. *Military Medicine*, 165 (8): 579-584.

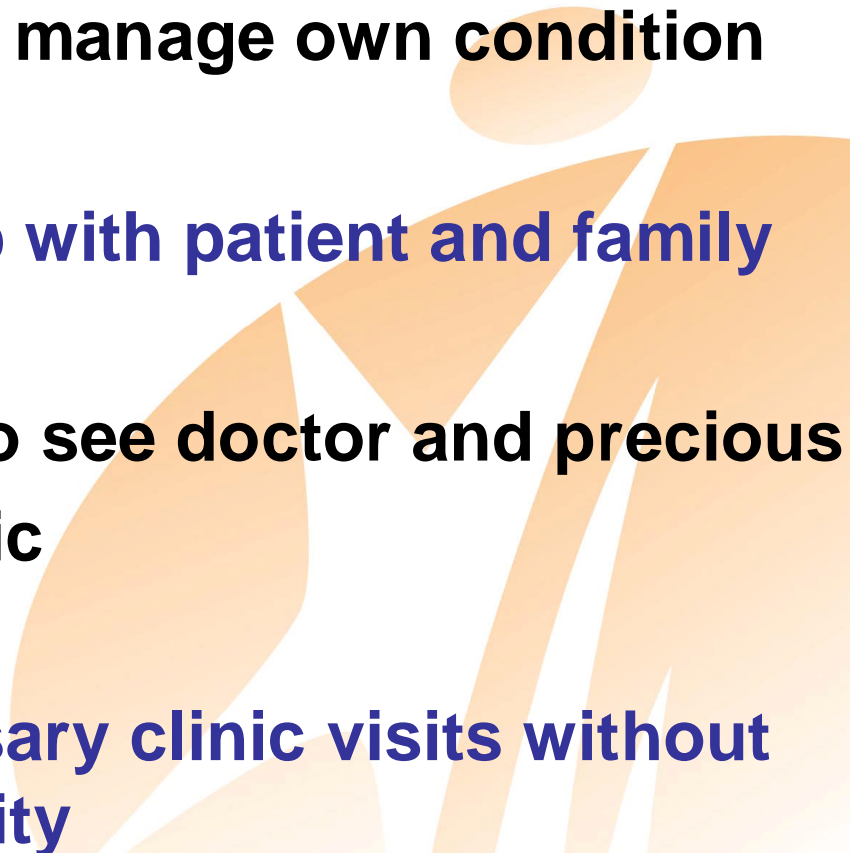
- **Self Management Programme** improves outcomes and reduce costs in the long term.

Bodenheimer, T., Lorig, K., Holman, H. & Grumbach, K. (2002). Patient self-management of chronic disease in primary care. *Journal of the American Medical Association*, 288 (19): 2469-2475.

PEP in Hougang Polyclinic

- Implemented in March 2006
 - Total **937** patients with stable chronic conditions were recruited to date
 - **170** patients with stable hypertension recruited from March to September 2006 were evaluated in this study
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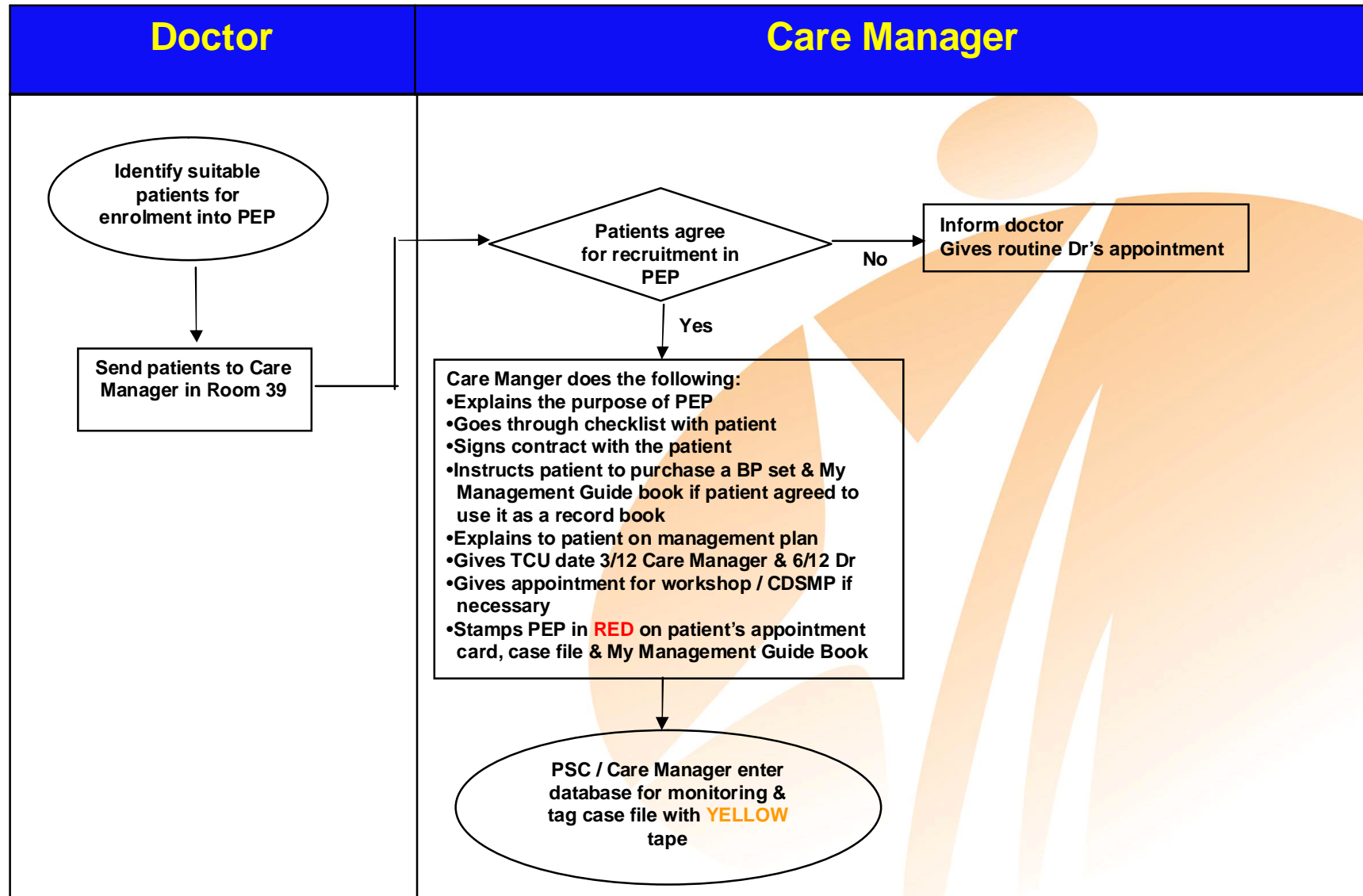
Objectives

- **Empower patient to manage own condition**
 - **Work in partnership with patient and family**
 - **Reduce expenses to see doctor and precious time-off to visit clinic**
 - **Cut down unnecessary clinic visits without compromising quality**
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Selection Criteria

- Achieved target control for BP and LDL-cholesterol for the past 6 months (BP \leq 140/90mmHg and LDL-cholesterol level $<$ 3.4mmol/L)
- No evidence of target organ damage from the disease
- Motivated to do self monitoring with digital BP set and recording at home
- Agreed for alternate visits between doctor / care manager every 6 monthly

Workflow of PEP



Hypertension Checklist

**HOUGANG POLYCLINIC
PATIENT EMPOWERMENT PROGRAMME
CHECKLIST
DIABETES MELLITUS / HYPERTENSION / HYPERLIPIDAEMIA**

Patient's Particulars

Contact no. (M) _____
(H) _____
(O) _____

Other medical conditions :

1) _____
2) _____

Date of enrollment : _____

	Yes	No	NA	Remarks
*A) Contract signed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
*B) Explain the purpose of PEP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
C) Assess patient's learning abilities and educational needs. (Refer to Skills Checklist)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
D) Provide health counselling / education with relevant information and / or instructions to patient / caregiver on :				
• Patient's condition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• dietary recommendations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• physical activities /exercises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• compliance and effects of medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• signs and symptoms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• complications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
*E) Patient has				
• home glucometer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• BP machine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
*F) Does patient have My Management Guide book ?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
G) Has patient attended Workshop ? If no, to offer				
• DM Workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
• Hypertension Workshop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
H) Chronic Disease Self Management Programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
* I) Management Plan given to patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

J) TCU date : _____
Teleconsult date : _____

Name & Signature of Care Manager : _____



Contract

I agree to be recruited in the **Patient Empowerment Programme** and will :

- a) Measure my blood pressure at home
- b) Follow the management plan as prescribed / instructed
- c) Adhere to the follow up appointments

Signature of patient : _____ Date: _____

Signature of witness : _____ Date: _____

Hypertension Management Plan

HOUGANG POLYCLINIC HYPERTENSION MANAGEMENT PLAN

Patient Particulars

Date:

Part 1: General Information

- A) If you are feeling well and your blood pressure is within target range, continue your usual routine, keep notes in your Management Guide Book – home blood pressure (BP) monitoring.
 B) If you feel fine, but your blood pressure reading is a little higher than the target range, write it down in your home BP monitoring records and repeat the test ½ hour later.

Part 2: Important Contact Information

Care Manager (CM) Tel No: 64898256/64898066

Part 3: Daily Medicines (To take your medication regularly as prescribed)

Medicine	Amount	When to take

Part 4: General Health / Targets

- A) Blood Pressure target : _____mmHg B) Exercise target: ___ minutes ___ times/week

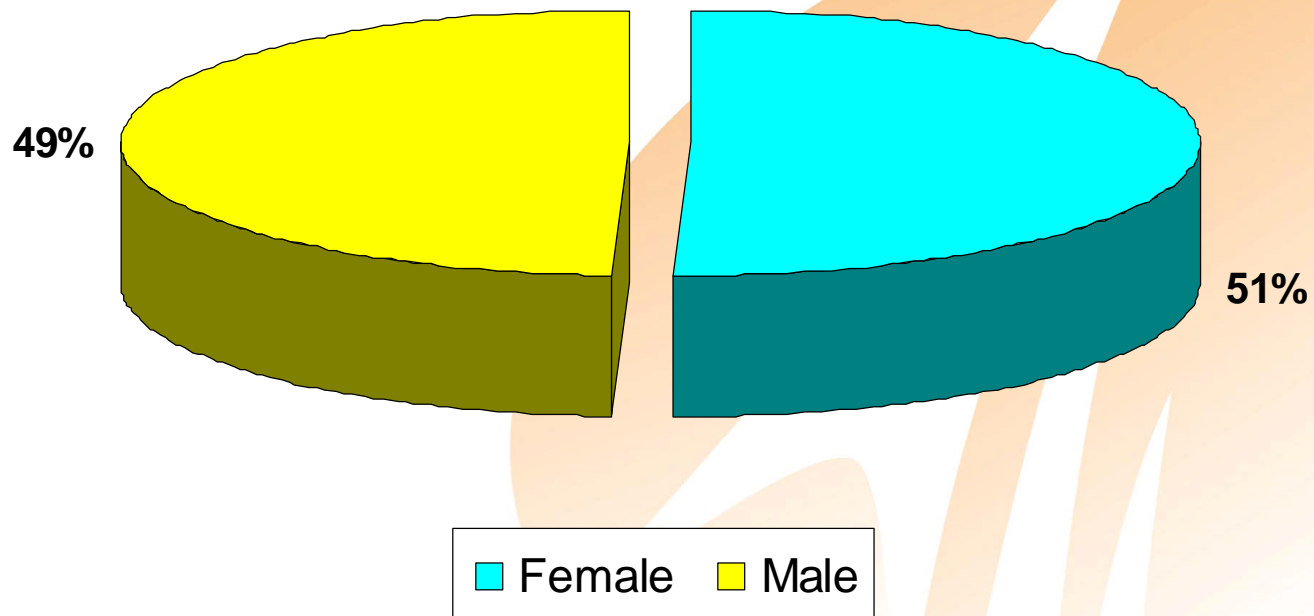
Part 5: Hypertension Management Plan

Green Zone	Green Zone means:
Blood Pressure < 140/90 mmHg	Your blood pressure is under control Continue taking your medication as ordered Continue routine blood pressure monitoring once a week Follow healthy eating habits Keep all Dr's appointments
Yellow Zone	Yellow Zone means:
Blood Pressure 140/90 mmHg to 159/99mmHg	Your blood pressure levels may indicate that you need to adjust your medications Continue routine blood pressure monitoring 2 times a week If BP >150/95 mmHg, measure your BP every day, call CM if BP >150/95 mmHg for 3 consecutive days
Red Zone	Red Zone means:
Blood Pressure 160/100 mmHg and above	Repeat measurement after resting ½ hour To consult Dr if: 1. BP >160/100 mmHg x3 times at ½ hour interval 2. BP(diastolic) >100 mmHg with symptoms of chest pain, breathless, weakness, headache, mental confusion, visual disturbances, nausea & vomiting

Results

Distribution of gender

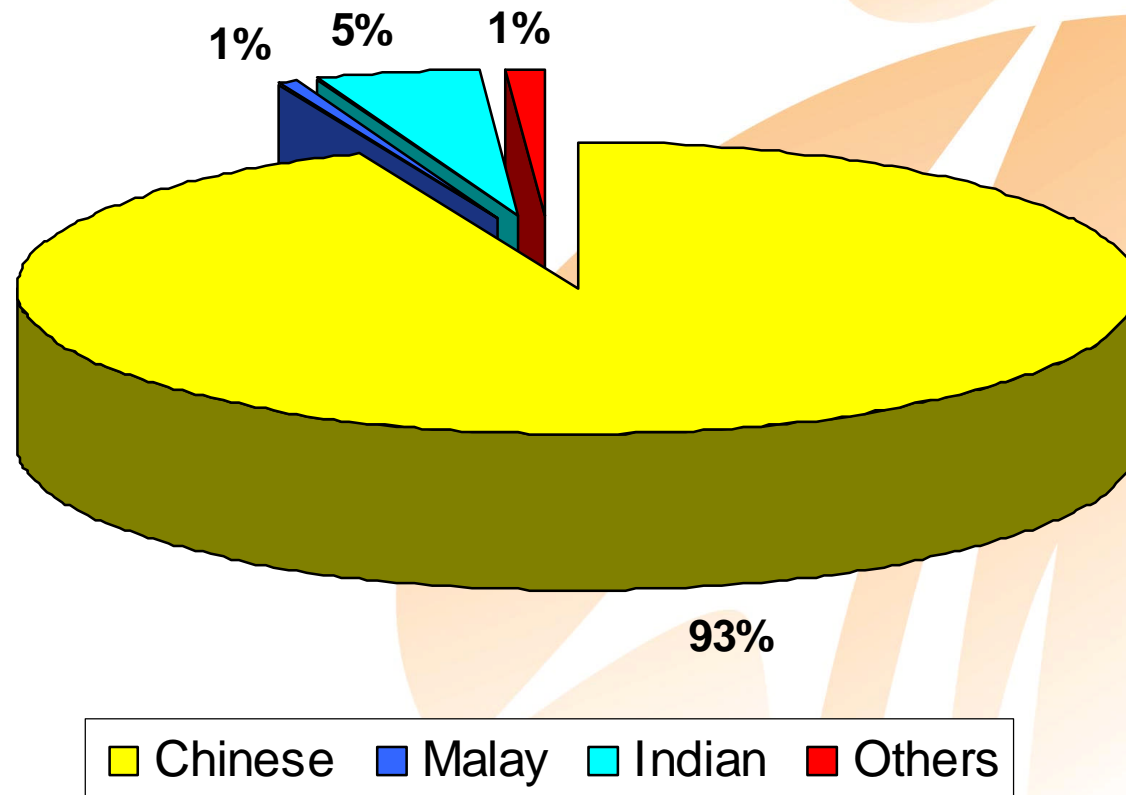
n = 170



Results

Distribution of ethnicity

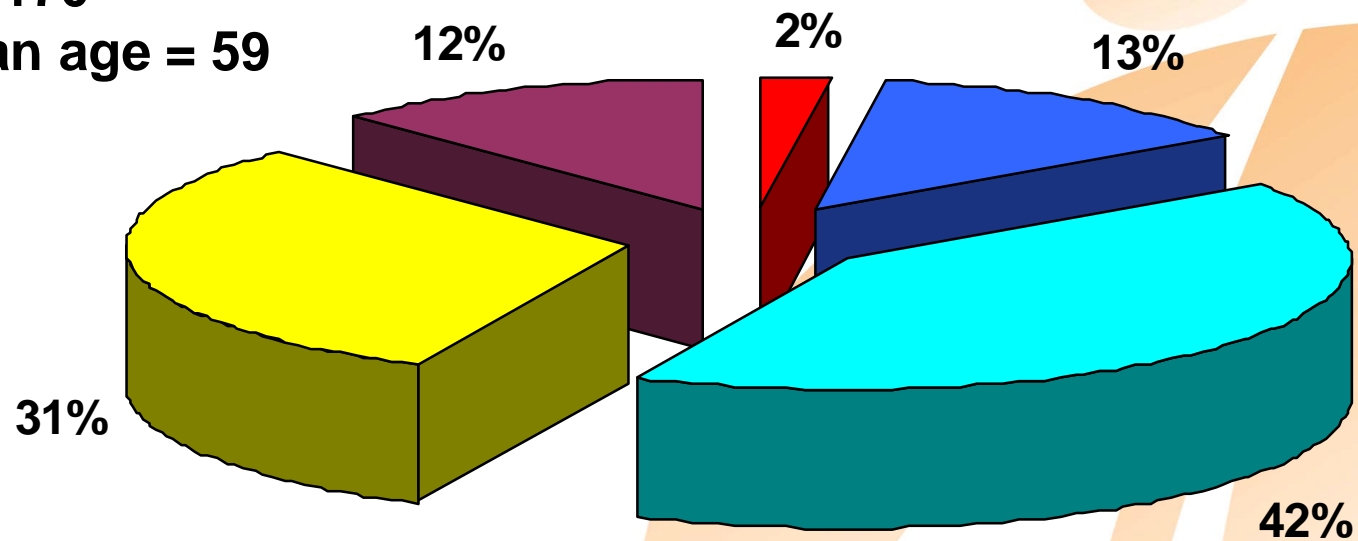
n = 170



Results

Distribution of age

n = 170
Mean age = 59



■ 31 to 40 years old

■ 41 to 50 years old

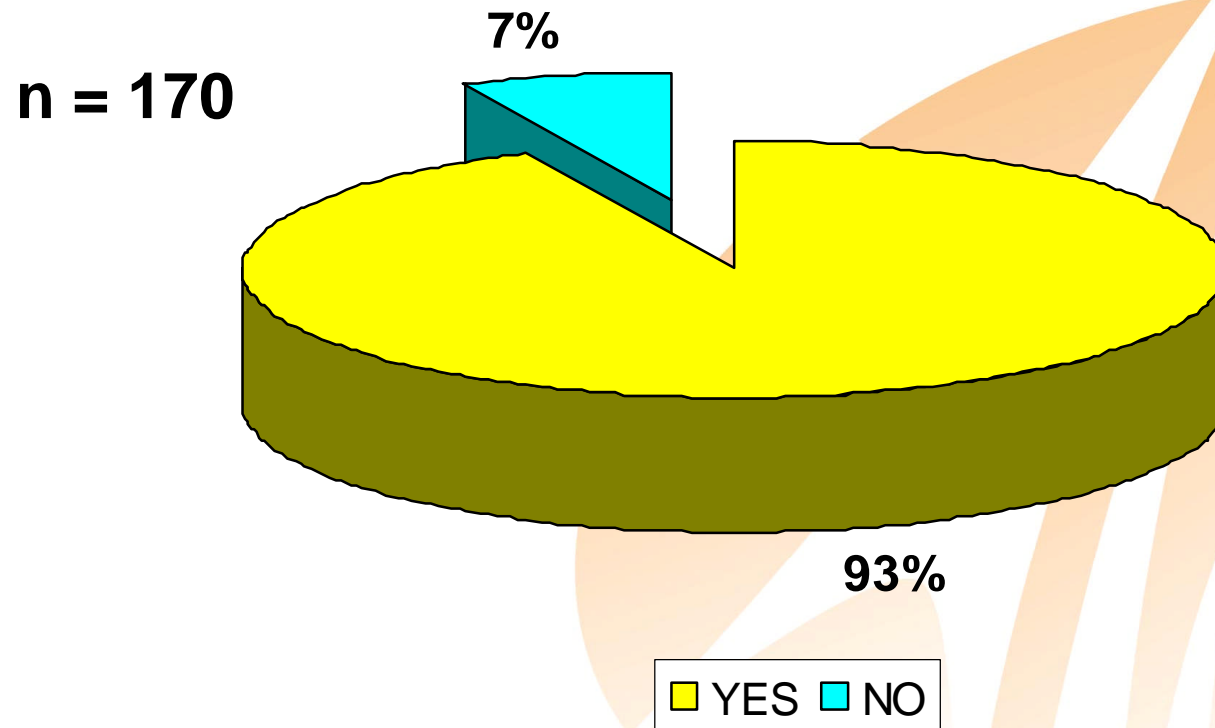
■ 51 to 60 years old

■ 61 to 70 years old

■ 71 years and above

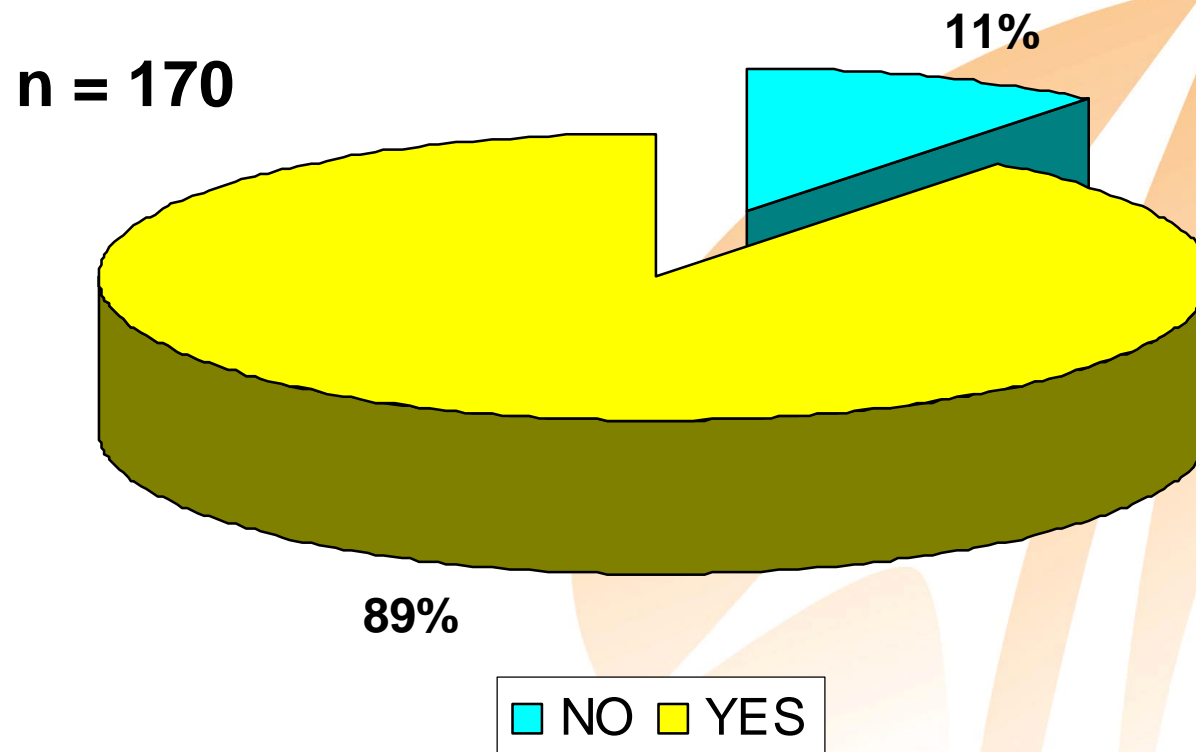
Results

Percentage of patients who engaged in self blood pressure monitoring



Results

Percentage of patients who attended the nurse interim visit



Understanding towards Management Plan

1. How often do you check your BP when it is less than 140/90mmHg?

Answer: Once a week or more frequent

Less frequent than once a week

2. When should you call the CM?

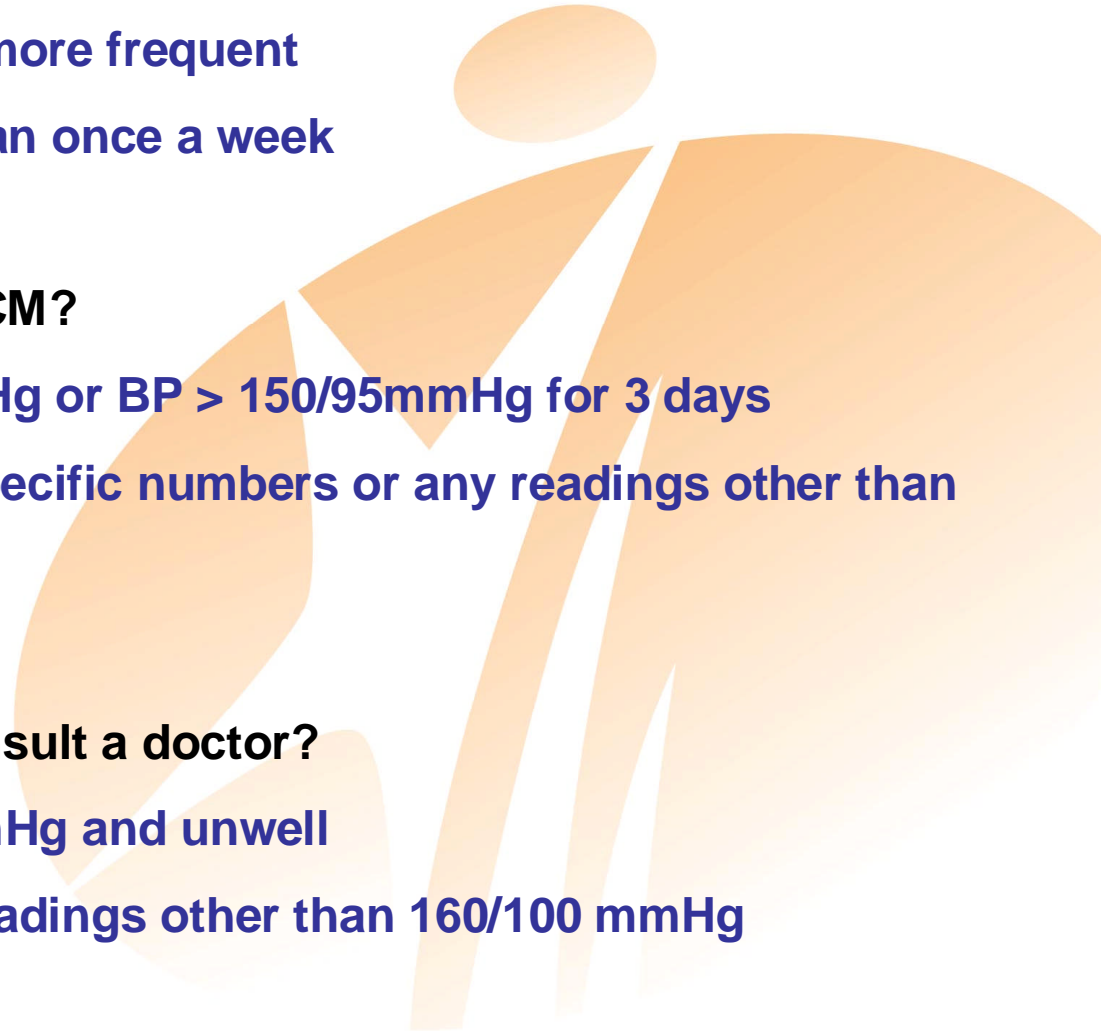
Answer: BP > 150/95mmHg or BP > 150/95mmHg for 3 days

“High” with no specific numbers or any readings other than 150/95 mmHg

3. At what BP should you consult a doctor?

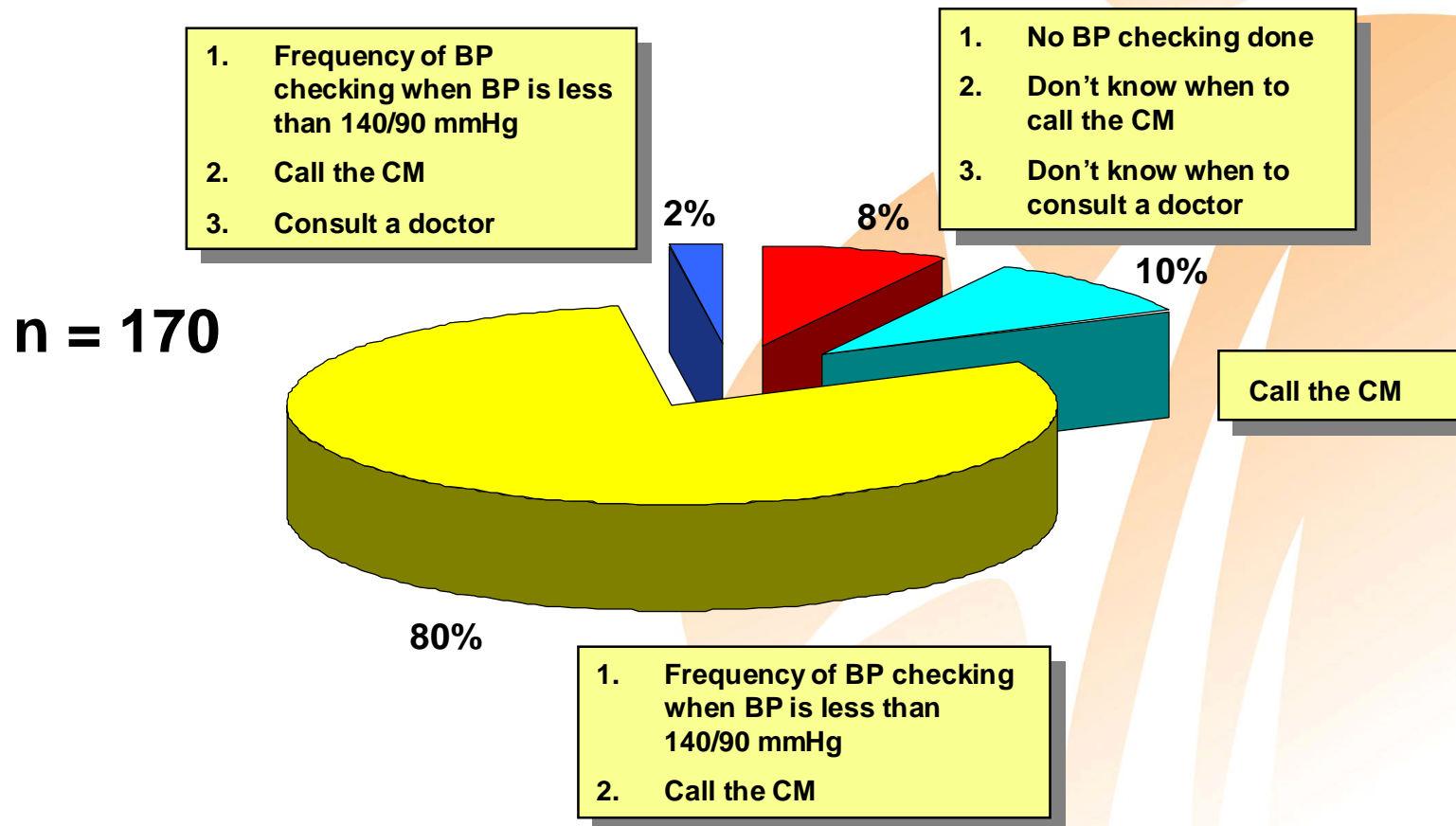
Answer: BP > 160/100mmHg and unwell

Unwell or any readings other than 160/100 mmHg



Results

Percentage of patients who show understanding of management plan



Action towards Blood Pressure readings

1. Has your blood pressure readings ever reached above 160/100mmHg?

a) Yes. What did you do then?

Answer: See Doctor

Do nothing. Measure again the next day and it went down

Do nothing at all

Others: _____

b) No. ****Skip to Question 2** (NA)**

2. Has your blood pressure readings ever reached above 150/95mmHg?

a) Yes. What did you do then?

Answer: See Doctor

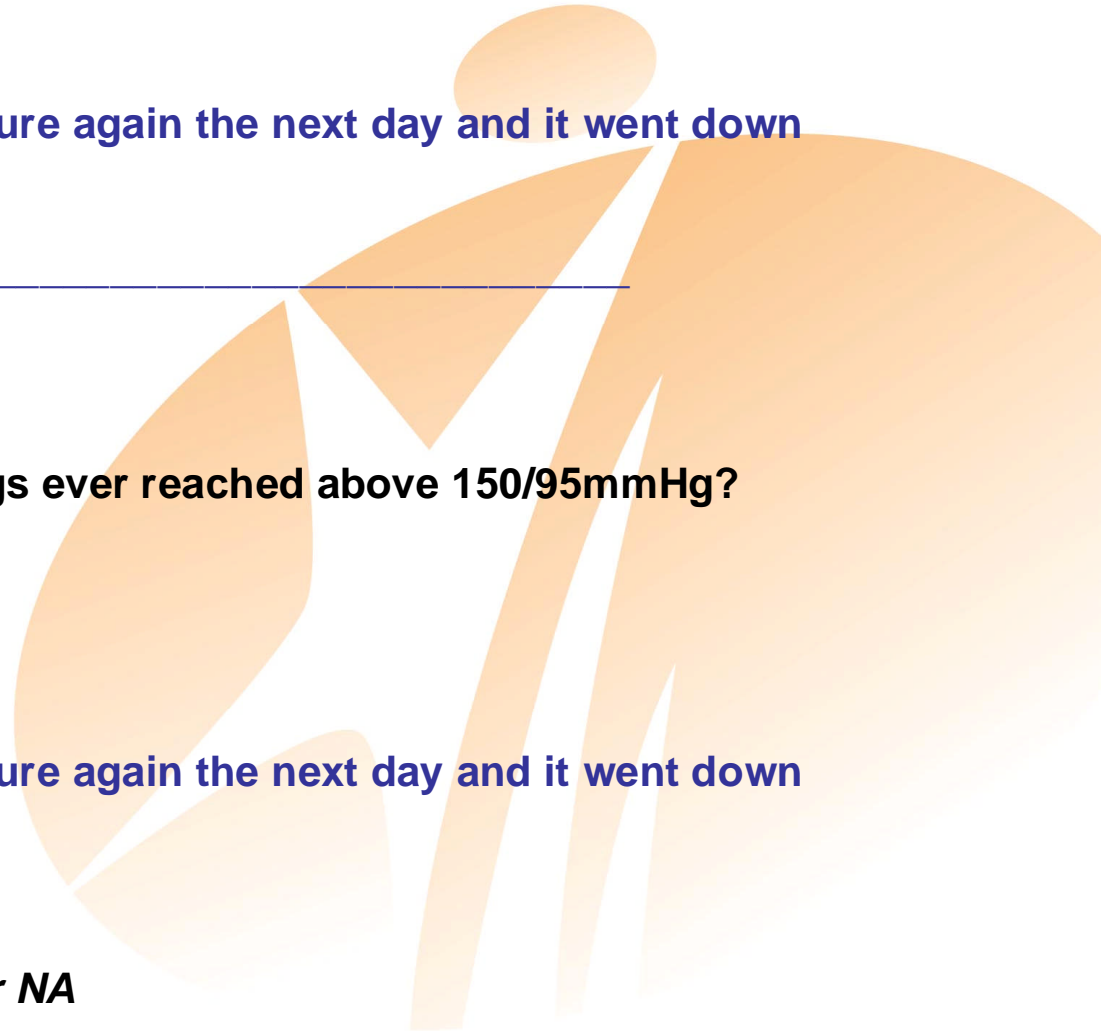
Call Nurse

Do nothing. Measure again the next day and it went down

Do nothing at all

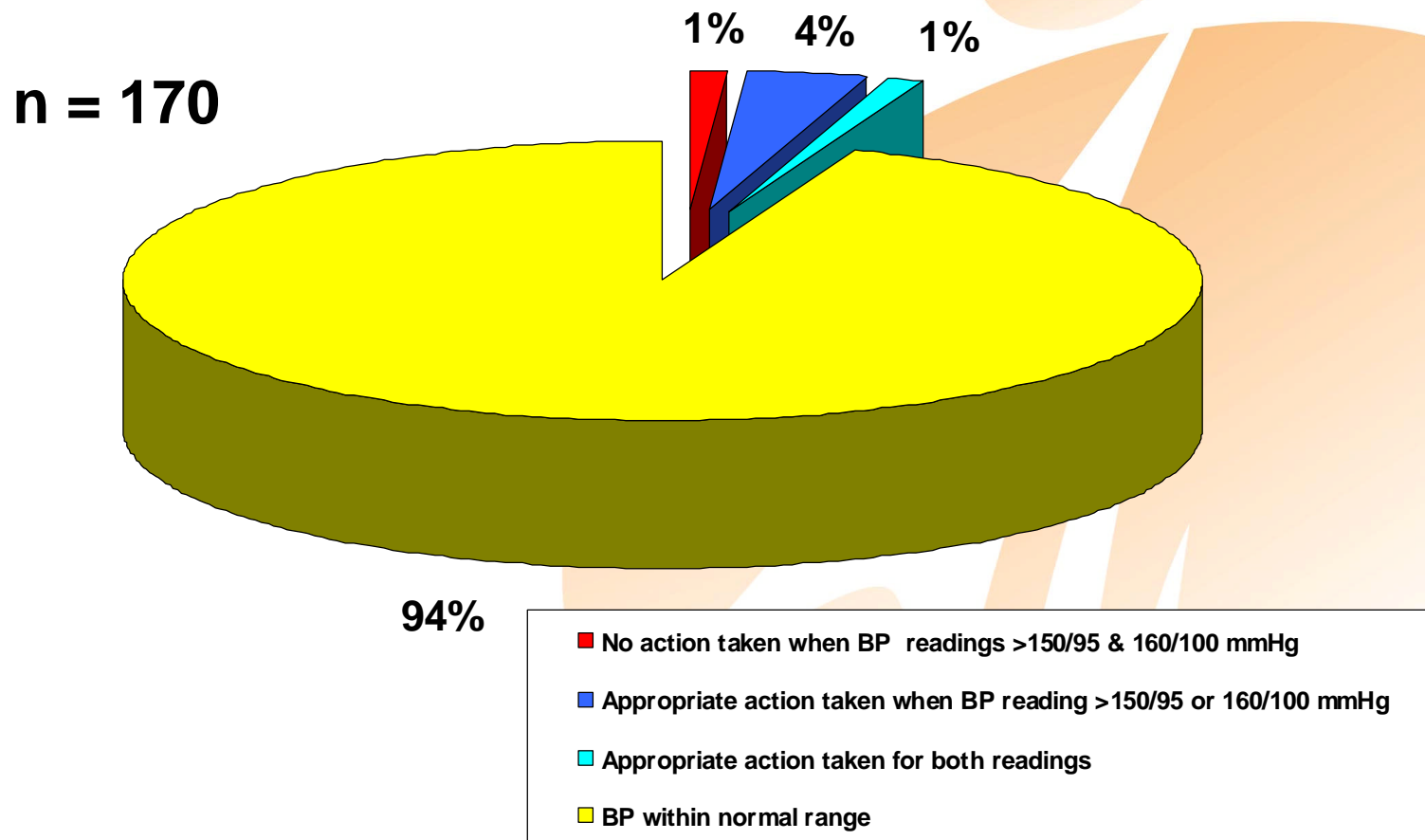
b) No. (NA)

Total points: _____ **or NA**



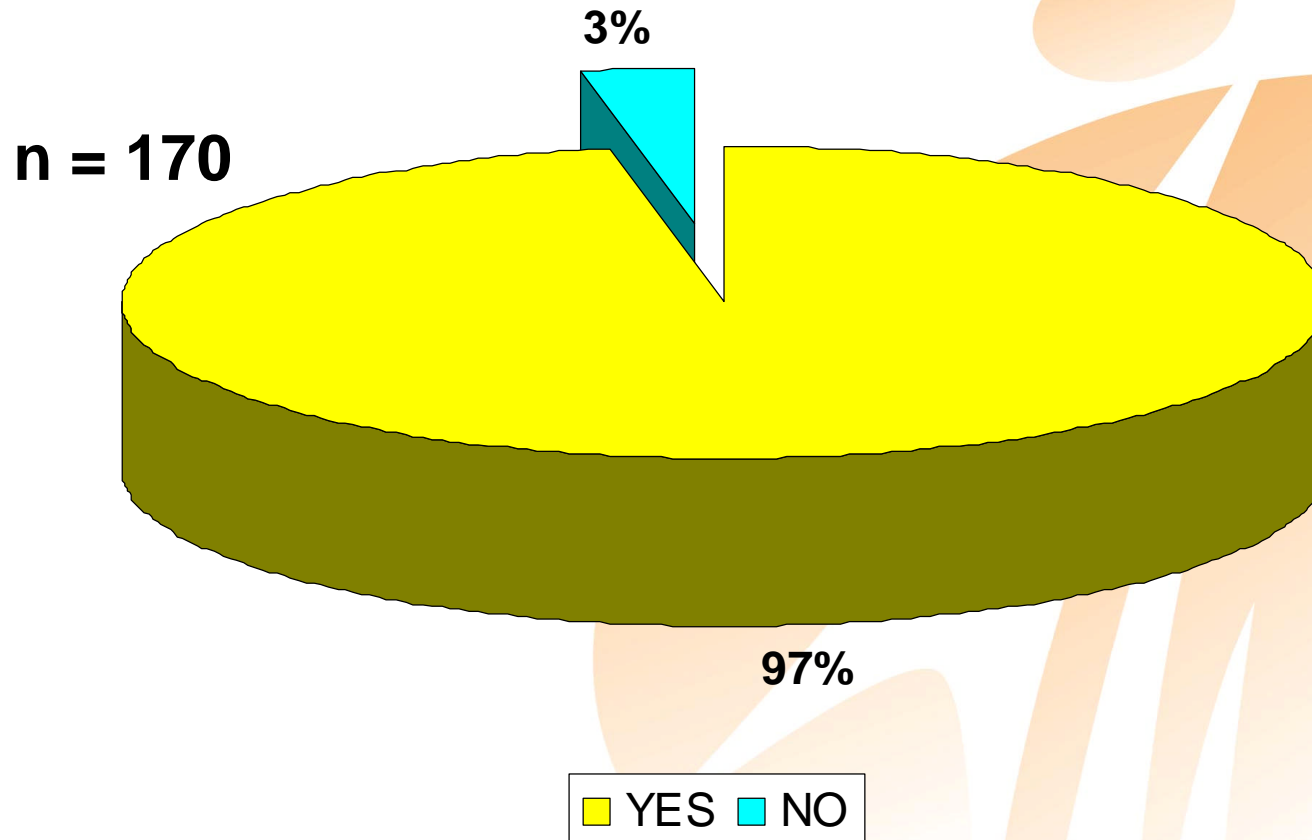
Results

Percentage of patients who took appropriate action towards high BP readings



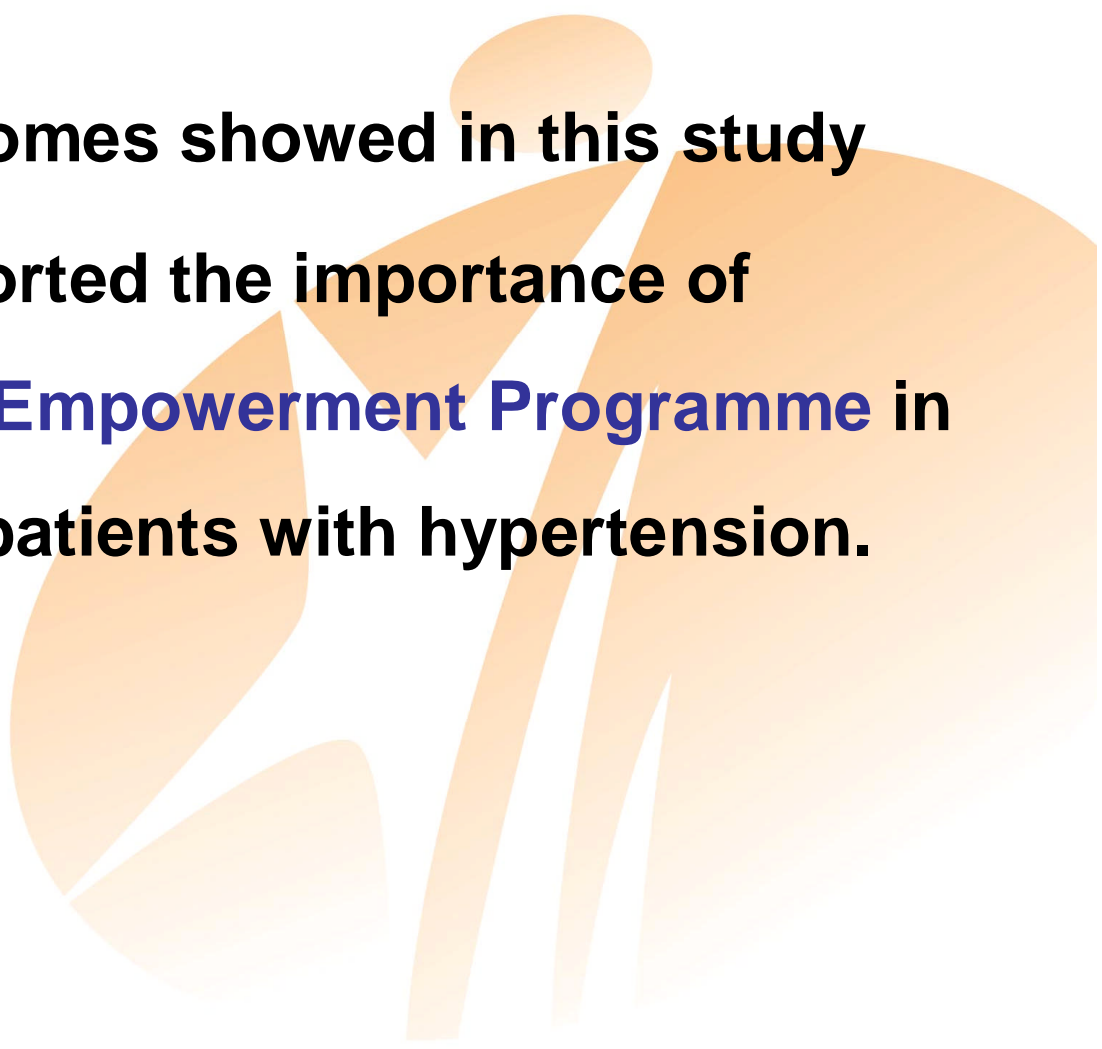
Results

Compliance to medication



Conclusion

The process outcomes showed in this study strongly supported the importance of a structured Patient Empowerment Programme in self-managing of patients with hypertension.





Thank You

